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MEDICAL JURISPRUDENCE.

A

TREATISE

ON

MEDICAL JURISPRUDENCE.

BY

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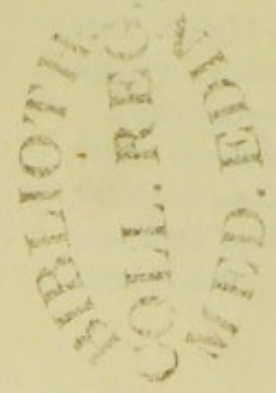
THE MEDICAL PART REVISED AND CORRECTED, WITH NUMEROUS ADDITIONS,

BY

ALFRED STILLÉ, M.D.



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PREFACE TO THE SECOND EDITION.

In the present edition nearly three hundred pages have been added to the legal and psychological department. The chapters on Insanity have been rearranged, expanded, and in some material points corrected, so as to bring them in harmony with the current decisions of the English and American courts. Several distinct topics have been introduced and examined at length; among which may be mentioned Survivorship; Medical Malpractice; the Legal Relations of Identity; the presumptions to be drawn from wounds and the Instrument of Death, and the Psychical Indications of Guilt. On the other hand, the chapters on circumstantial evidence have been condensed by abridging cases which in the first edition were new to the professional eye, but which have since become generally accessible.

Without making any alteration in the general arrangement of the medical portion of the work, the editor has added to it about eighty pages of new matter, consisting of a chapter on the Signs of Death, besides many illustrative cases, and recent methods of investigation.

Very little space has been devoted to the discussion of general principles, for in criminal legal proceedings particular persons and acts are concerned, whose reciprocal relations constitute the sole subject of inquiry. All rules, therefore, which are liable to frequent exceptions, should be very cautiously admitted as tests in practice, when their weight may incline the scales of justice, and affect the life, liberty, or character of the accused.

The original text has been carefully revised, and pains everywhere taken to render the language clear, and the statements accurate; in a word, to make this portion of the work, as nearly as possible, what its lamented author would have done, had he survived to perform a similar duty.

F. W.
A. S.

PREFACE.

THE two points which were mainly before the authors of the following treatise when they entered upon its preparation, and the hope of reaching which formed their chief inducement in approaching a topic which has already been in other respects so ably and fully discussed elsewhere, were, first, the incorporation in its pages of the results of late continental, and particularly French and German, research; and secondly, the bringing together stereoscopically—if the metaphor can be permitted—of the Legal and Medical points of vision, so that the information required by each profession might be collected and viewed at the same time and within the same compass. It was felt that in the usual range of medico-legal exposition there was a great deal that, though interesting to the medical man, is unnecessary to the legal practitioner; and, on the other hand, it is equally clear that there are many points upon which the latter needs information, which the former, either from inadvertence or from what would be to him their extreme simplicity, may forbear to touch. The converse also is true, viz., that the legal writer who undertakes such a work, except in subordination to medical advice, may exhibit very satisfactorily the necessities of legal practice, but will fail to supply the information by which these necessities can be met.

These two points, viz., the absorption of recent medico-legal research in France and Germany, and the union of the medical and legal stand-points, it was here hoped to reach, not so much by a concurrent authorship of each page, as by a general preliminary comparison of views and adjustment of material by the two writers by whom the task was undertaken, followed up by a division of the subject matter between them in subordination to the plan previously agreed upon. In pursuance of this scheme, the second, third, fourth, and fifth books —viz., those on the Fœtus and New-born Child, on Sexual Relations, on Identity, and on the Causes of Death—were assigned to Dr. Stillé, with the exception of those sections in the two former which concern the legal relations of gestation, abortion, and rape; while to the present writer fell the preparation of the first and sixth books, embracing Mental Unsoundness and the Legal Relations of Homicide, together

with the general disquisition on Indicatory Evidence with which the latter book concludes.

Of the manner in which was performed at least a portion of the task whose history is now given, it may not be unsuitable for the writer who now survives to speak. It was to the preparation of this portion that the last year of Dr. Stillé's short but distinguished professional career was given. It was a year of patient and severe research, marked, to an extent of which the annals of science afford few parallels, by the most self-denying industry, as well as by a rigorous and almost fastidious conscientiousness in the pursuit, not only of truth, but of the most appropriate terms by which that truth could be expressed. And the labor was not one which derived any portion of its severity from the want of prior preparation. Dr. Stillé had not only enjoyed great opportunities for literary and professional culture, but, what is rarer, these opportunities were faithfully improved. The liberalizing influences of European culture, as well as the simpler discipline of home instruction, passed not over him in vain. The schools of Europe received from him in the prime of his early manhood the same single and conscientious attention as the schools of Philadelphia in his youth. He found the pleasures of travel and the desultory influences of foreign habits of no more avail in drawing him from a laborious personal attendance on the hospitals—those great repositories of disease which, in the development of God's wonderful providence, are made the arsenals which supply the weapons by which the maladies that necessitate them are to be combated—than he found the more primitive habits and more limited associations of his native city. The great continental tongues, in their scientific as well as their popular relations, were mastered by him to a completeness of which, among persons of his age, we have rare examples. Few men, even among the most mature, have gone to the grave so richly fraught with the literature of a profession, which to him was a philosophy as well as an art. And few, at so early an age, have gone to the grave with faculties under more complete moral discipline. To one of his most remarkable qualities—that delicate and yet modest firmness of perception which, unwarped on the one side by pride in his own opinion, or on the other by undue deference to that of others, enabled him, after the most difficult and subtile research, not only to reach but to express the truth—no one has had better cause to testify than the present writer. The work which these lines now close was one which brought both of those who engaged in it into the most intimate and affectionate personal intercourse for many months; and the one who survives can now scarcely look back upon the preparation of a single page without having additional cause to remember and record those high mental qualities and culture, whose value in the present case was only increased by the gentleness,

the refinement, and the fine sense of personal honor with which they were associated.

Dr. Moreton Stillé was born in Philadelphia, on October 27th, 1822, and, after having gone through a preliminary course at the Edgehill Seminary, at Princeton, entered the Department of Arts of the University of Pennsylvania in 1838, and graduated on July 15th, 1841. He immediately began his professional studies in the office of his brother, Dr. Alfred Stillé, to whose training and instruction he became so greatly indebted; and in the spring of 1844 he received from the Medical School of the same University the degree of Doctor of Medicine, his thesis, on "Cyanosis," having obtained the rare compliment of having been called for by the Faculty for publication. In October, 1844, he embarked for Liverpool; from November, 1844, to March, 1845, was engaged in attendance upon the hospitals and schools in Dublin; and was employed in the same duties from March, 1845, to September, in London, and from September, 1845, to March, 1846, in Paris. After travelling for some time, he visited Vienna, where he was occupied in study from October, 1846, to April, 1847; and finally returned to Philadelphia in the fall of 1847, when he entered at once into practice. In the summer of 1848 he became a candidate for and was elected to the post of Resident Physician at the Pennsylvania Hospital, where he continued until April, 1849; and it is no slight evidence of the zeal with which he pursued his profession, and the generous and self-denying spirit by which he was actuated, that in the succeeding summer, upon the appearance of the cholera in a malignant type at the Blockley Hospital, he volunteered to attend at that institution, and remained there until he was himself attacked and prostrated by the epidemic. Perhaps, indeed, even in a profession whose history has been so marked by acts of zeal and of disinterestedness, when we take into consideration the fact that Dr. Stillé was impelled by no other motive than that of professional love and enterprise in the severe course of study and self-sacrifice in which he was engaged, there will be found few cases where these qualities have been so eminently exhibited as the present. Possessed of an ample fortune, he was one of those uncommon instances in which the most arduous and protracted courses of preliminary trial are gone through with under the calm and equal effect of a will which is impelled neither by necessity nor the desire of present applause, but by the faith in a distant future, in which the result will be none the less precious because it is the longer delayed.

But this future was one which to Dr. Stillé—and to the great loss of popular as well as of medical science—was only in part to arrive. Early in 1855 he received the appointment of Lecturer on the Practice of Medicine in the Philadelphia Association for Medical Instruction,

and at the end of June closed the first portion of a course of lectures of which it is not too much to say that they were received with unmixed satisfaction by the class to whom they were addressed, and the colleagues with whom he was associated. In the first week of July he sent from his office the last of the manuscript of that portion of the following pages which fell under his charge, and almost immediately afterwards was stricken down by a disease which found him with strength impaired by the exhausting studies of the preceding winter. On August 20, 1855, he died, at Saratoga, almost at the moment when the press was issuing the last sheets of a work which contains so much worthy of being erected as a monument in which his professional brethren will recognize the impress of his high intellectual gifts and culture. And now, when on this the final inscription is being recorded, it will not be considered out of place to add to it a single tribute to those eminent domestic virtues, which it is here hardly possible justly and at the same time delicately to express, and yet which gave to MORETON STILLÉ when living, and now places on his monument when dead, a character which is the highest that human standards can afford, that of a husband, son, and father, always true, tender, and just.

F. W.

PHILADELPHIA, *October* 1*st*, 1855.

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CHAPTER I.

MENTAL UNSOUNDNESS CONSIDERED LEGALLY.(a)

§ 1. Three relations exist in which mental unsoundness becomes a subject of inquiry in the courts of the United States :—

I. Capacity to perform particular acts for the disposal of property, such as making contracts or gifts, and executing deeds or wills, in which cases the question is brought up by contesting the validity of the particular act itself.

II. General business capacity, in which case the question arises upon a petition to the chancellor or proper judicial officer of the jurisdiction, for a decree pronouncing the party to be incapable from lunacy or habitual drunkenness, of managing his estate, and transferring the custody of it to a committee.

III. Responsibility for crime.

In each of these relations the tests of unsoundness are distinct. In the first, as will presently be seen, a very modified degree of incapacity will be sufficient, when accompanied by fraud, imposition or over-exercise of authority, to set aside a contract or to invalidate a will. In the second, a much less degree of general capacity is sufficient, than is necessary in the third; for there must always be a number of cases in which a party is morally capable of crime, and yet intellectually incapable of business. Keeping these facts in view, it is proposed to discuss the subject under the following heads :—

I. What degree of unsoundness invalidates a contract or will.

1st. Imbecility generally, and herein of fraud and compulsion.

2d. Partial insanity.

3d. Lucid intervals.

4th. Intoxication.

(a) As to the general meaning of the term "mental unsoundness," see the authorities collected in 1 Beck's Med. Jur. (11th edition) p. 764.

II. What is necessary to be proved in order to deprive a party of the management of his estate.

III. What degree of unsoundness avoids responsibility for crime.

I. What degree of unsoundness invalidates a contract or will.

§ 2. With regard to lunatics or idiots, in the popular sense, there can be no question in this connection. Upon them the law affixes its visible stamp, and by virtue of a commission of lunacy,(*aa*) to be considered under the next head, pronounces them incapable of transferring property. Nor to invalidate their acts is it necessary that a decree of lunacy should have been actually pronounced. The madman, even though his madness be a mere temporary delirium, cannot, by an executory contract,(*b*) bind himself either in person or in property; and consequently in such a class of cases the judgment of the law must relieve him from responsibility. In this respect the test is the same in the criminal and the civil courts. There are, however, a large class of cases in which, as has been noticed, a contract or a will will be declared void, but in which there is a sufficient degree of intellect to create a responsibility for crime. These may be ranked as follows:—

1st. Imbecility generally, and herein of fraud and compulsion.

2d. Partial insanity.

3d. Lucid intervals.

4th. Intoxication.

1st. *Imbecility generally, and herein of fraud and compulsion.*

§ 3. Of this an illustration may be found in Lord Portsmouth's case, which has been too often erroneously supposed by medical writers to sustain the position, that mere mental debility is enough, by itself, to avoid even the most solemn contract. Lord Portsmouth was married for the second time in March, 1813, to a young woman who was the daughter of one of his trustees, the solicitor of the family, under whose charge he was at the time living. From earliest childhood he had displayed great weakness, both moral and mental, being cruel, timid, and fickle in his management of his household, and exceedingly capricious in his tastes. Upon his arrival at twenty-one, however, his

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(*aa*) A prior inquisition of lunacy is competent, but not conclusive evidence of incapacity (Whitenack *v.* Striker, 1 Green, C. R. 8), but even when the jury find that the lunacy was prior to the disputed act, and without lucid intervals, the finding may be collaterally impeached. (Bannatyne *v.* Bannatyne, 15 Jur. 864; 14 English R. 581.)

(*b*) It should always be borne in mind, that in point of practice there is a great distinction between contracts *executed* (i. e., those which have already been performed), and contracts executory (i. e., those whose performance is sought to be enforced). The *latter* a court will not in general lend its aid to execute, when the party sought to be affected was at the time a lunatic. But on the other hand, when in good faith a party makes a contract with a lunatic, supposing him to be of sound mind, and it is impossible to restore the parties to their original position, the contract cannot afterwards be rescinded and the purchase money or other consideration recovered back. (See Beavan *v.* M'Donnell, 24 English Rep. 486; S. C. 9 Wels. H. & G. 310; Molton *v.* Camroux, 2 Exch. R. 487, 4 Exch. R. 17; see also cases cited, 9 Wels H. & G. 314, *n.*) See post, § 11.

incapacity was such, as to induce his family to take steps to put him under the charge of a committee, and at their instance he joined with his father in suffering common recoveries, and making a new settlement of the estate. It was not disputed that he mixed in society generally, corresponded with his friends, and settled his own accounts with his steward. His first marriage was in 1799, and took place under his family's directions, with a lady several years older than himself, who it was understood took a general supervision of his affairs. In the settlement made at that marriage the father of his second wife was one of the trustees. The first wife died in November, 1813, and in February, 1814, Lord Portsmouth went down to London with his medical attendant, and being left in his trustee's hands, a week afterwards contracted a second marriage to the trustee's daughter. In 1823, not until after the birth of a child, which took place in 1822, a commission was issued to inquire into his lunacy, the result of which, after a long contest, was a finding that he was of unsound mind, and had been so since January, 1809. The committee appointed under this procedure immediately filed a petition in the Ecclesiastical Court to annul the second marriage. Sir John Nicholl, in deciding the case, said: "That considerable weakness of mind, circumvented by proportionate fraud, will vitiate the fact of marriage, whether the fraud is practised on his ward by a party who stands in the relation of a guardian, as in the case of Harford against Morris,(c) which was decided principally on the ground of fraud; or whether it is effected by a trustee, procuring the solemnization of the marriage of his own daughter with a person of very weak mind, over whom he has acquired great ascendency. A person incapable from weakness of detecting the fraud, and of resisting the ascendency practised in obtaining his consent to the contract, can hardly be considered as binding himself in point of law by such an act. At all events, the circumstances preceding and attending the marriage itself may materially tend to show that the contracting party was of unsound mind, and was so considered and treated by the parties engaged in fraudulently effecting the marriage. In respect to Lord Portsmouth's unsoundness of mind, the case set up is of a mixed nature, not absolute idiocy, but weakness of understanding—not continued insanity, but delusions and irrationality on particular subjects. Absolute idiocy, or constant insanity, would have carried with them their own security; for in either case, the forms preceding, and the ceremony itself, could not have been gone through without exposure and detection; but here a mixture of both, by no means uncommon, is set up—considerable natural weakness, growing at length from being left to itself and uncontrolled, into practices so irrational and unnatural as in some instances to be bordering on idiocy, and in others to be attended with actual delusion—a perversion of mind—a deranged imagination—a fancy and belief of the existence of things which no rational being, no person possessed of his powers of reason and judgment, could possibly believe to exist. * * * It appeared that in February, 1814, Lord Portsmouth was brought to London by his medical attendant, and delivered up to his trustees, Hanson being one, and then in town—that day week he was married to the daughter of Mr.

(c) 2 Hag. Cons. R. 423.

Hanson. The confidential solicitor of the family, one of the trustees, who had a great ascendency over him, who owed him every possible protection, married him to one of his daughters! It is unnecessary to state the jealousy with which the law looks at all transactions between parties standing in these relations to each other. The whole transaction will bear but one interpretation: every part of it is the act of the Hansons! Lord Portsmouth is a mere instrument in their hands, to go through with the necessary forms; the settlement is begun in forty-eight hours after Lord Portsmouth's arrival in London! The contents of that settlement; the mode in which it was prepared; the concealment of the whole from the friends and the other trustees who were in town, some in the same house with Lord Portsmouth, all these particulars bear the same character. The necessary forms are gone through with, but in support of these mere forms, not a witness is produced to show that this nobleman was conducting himself as a man understanding what he was doing, or capable of judging, or acting as a free and intelligent agent; nothing tending to show he was a person of unsound mind; nothing in his conduct inconsistent with unsoundness of mind; every circumstance conspires to prove that he was the mere puppet of the Hanson family, and that the celebration of this marriage was brought about by a conspiracy among them to circumvent Lord Portsmouth, over whom they, and particularly the father, had a complete ascendency, so as to destroy all free agency and rational consent on his part to this marriage. A marriage so had, wants the essential ingredient to make the contract valid—the consent of a free and rational agent. The marriage itself, and the circumstances immediately connected with it, do not tend to establish restored sanity; it was neither 'a rational act' nor was it 'rationally done'—the whole 'sounds to folly' and negatives sanity of mind. The Hansons, in the mode of planning and conducting the transaction, show that they treated and considered Lord Portsmouth as a person of unsound mind, and Lord Portsmouth in submitting and acquiescing, and not resisting, confirms his own incompetency. Even if no actual unsoundness of mind, strictly so called—if no insane derangement existed—if only weakness of mind—and all admit that he was weak—yet considering the passiveness and timidity of his character on the one hand—the influence and relation of Hanson, his trustee, on the other—and the clandestinity and other marks of fraud which accompanied the whole transaction—I am by no means prepared to say, that without actual derangement in the strict sense, the marriage would not be invalid—but in my judgment Lord Portsmouth was of unsound mind, as well as circumvented by fraud."(*d*)

§ 4. While, therefore, the learned judge before whom this case was heard, came to the conclusion that Lord Portsmouth was of "unsound mind," the position was broadly taken by him that weakness alone, when circumvented by fraud, would be sufficient to invalidate even so solemn a contract as marriage, and on this position his decision in part rested. Still more unequivocal was the decree of the Privy Council in dismissing an appeal from the Court of Chancery of the Isle of Man, setting aside two deeds, on the ground that

(*d*) Portsmouth *v.* Portsmouth, 1 Hag. Ec. R. 355.

the grantor in both of them was of unsound mind at the time he executed them, and that they were obtained from him by fraud and undue means. The evidence showed that the grantor, an old man, feeble both in body and mind, separated from all his relations, without a friend to advise him, and surrounded by those only who were contriving to get his fortune, conveyed away nearly all that he was possessed of, even the house he lived in, to persons not related to him, either in blood or connection: and all his estate in lease was to become the property of the same strangers after his death. The consideration of £100 was inserted for conveying away property worth £1400; and this was not to be paid to the grantor, but to his executor after his death, without any interest being charged on it in the meantime. Lord Wynford, in giving the opinion of the Privy Council, said, that the law would "not assist a man who is capable of taking care of his own interests, except in cases where he has been imposed upon by deceit, against which ordinary prudence could not protect him. If a person of ordinary understanding, on whom no fraud has been practised, makes an improvident bargain, no court of justice can release him from it. Inadequacy of consideration is not a substantial ground for setting aside a conveyance of property. But those who, from imbecility of mind, are incapable of taking care of themselves, are under the special protection of the law. The strongest mind cannot always contend with deceit and falsehood; a bargain, therefore, into which a weak one is drawn under the influence of either of these, ought not to be held valid, for the law requires that good faith should be observed in all transactions between man and man. If this conveyance could be impeached on the ground of the imbecility of the grantor only, a sufficient case has not been made out to render it invalid; for the imbecility must be such as to justify the jury, under a commission of lunacy, in putting his property and person under the protection of the Chancellor; *but a degree of weakness of intellect far below that which would justify such a proceeding, coupled with other circumstances to show that the weakness, such as it was, had been taken advantage of, will be sufficient to set aside any important deed.*"(*e*) This same view has been uniformly acted on in the English and American courts, and it is expressed by Mr. Justice Story with his usual precision.(*f*) "The acts and contracts of persons who are of weak understandings, and who are thereby liable to impositions, will be held void in courts of equity, if the nature of the act or contract justify the conclusion, that the party has not exercised a deliberate judgment, but has been imposed upon, circumvented or overcome by cunning or undue influences."(*g*) When articles furnished are suitable necessaries, the estate of a person of weak mind is liable, if there be no fraud.(*gg*)

§ 5. With even greater emphasis has the same doctrine been announced by courts of law in respect to wills. Peculiarly liable as is a dying man, even though his intellect be of average strength, to have his comfort destroyed, if not his purpose overturned, by those in whose society he is placed, the policy

(*e*) Blachford *v.* Christian, 1 Knapp's Rep. 73; Shelford on Lunacy, 272.
(*f*) 1 Story Eq. Juris. § 238.
(*g*) See also 1 Fonbl. Eq. B. 1, ch. 2, § 3; Holland *v.* Miller, 12 La. An. 624.
(*gg*) Skidmore *v.* Romaine, 2 Bradf. (N. Y.) 122.

of the law has anxiously sought for every safeguard by which such intrusions upon the sanctity of dissolution, as well as upon the rights of families, can be deprived of motive. "The same memory for the making of a will," agreed all the judges of England at an early date, "is not at all times when the party can answer to anything with sense, but he ought to have judgment to discern and to be of perfect memory, otherwise the will is void."(*h*) "He ought to have a disposing memory," said Lord Coke, "so that he is able to make a disposition of his lands with understanding and reason; and that is such a memory as the law calls sane and perfect."(*i*) While, therefore, it is only necessary that there should be the capacity of reasonable disposition, great jealousy has been exercised for the correction of extraneous influence on the testator. Thus wills have been set aside when they were preceded by over-importunity of friends standing in confidential relations,(*j*) where the housekeeper and physician were shown to have earnestly urged a non-natural scheme of distribution;(*k*) where the wife in fact dictated the will, the testator being at the time unable to speak, she pretending to understand him, and making herself the sole devisee for life, and imposing as a devisee in remainder a fictitious niece;(*l*) where one relation produced the disinheritance of another by false representations as to his character;(*m*) where the testator was old and feeble, and the will was made under the directions and to suit the purposes of a colored woman in the family,(*n*) and where a husband exercises coercion.(*o*) In short, whenever the provisions of a will are inconsistent with natural justice, it will require strong proof of capacity and volition to sustain it, and slight proof of undue influence or fraud to set it aside.(*p*) Where a presumption of imposition exists, e. g., from the fact of the penman of the will taking a pecuniary benefit under it, the courts exact "the most decisive proof of the complete absence of influence and excitement at the preparation and making of the asserted will, and must require unimpeachable evidence of unbiassed volition

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(*h*) Combe's case, Moore R. 759.

(*i*) Marquis of Winchester's case, 6 Rep. 24; 2 Buls. 211. The same point is put with still greater simplicity by Judge Washington: "Had he a disposing memory—was he capable of recollecting the property he was about to bequeathe—the manner of distributing it and the objects of his bounty." (Stevens *v.* Vanclerc, 4 W. C. C. R. 262.) Proof, however, of intellect having been impaired by disease, or of intellectual feebleness alone, will not avail by itself to defeat a will, when adequate capacity remains. Sloan *v.* Maxwell, 2 Green. Ch. 563; Andrews *v.* Weller, ibid. 604; Dunick *v.* Reichenback, 10 S. & R. 84. The cases will be found enumerated in 1 Powell on Devises, 127; Shelford on Lunacy, 275–6; 4 Kent's Com. 566; 1 Jarman on Wills, 28. See also Converse *v.* Converse, 21 Vt. 168; Horne *v.* Horne, 9 Ired. 99; Harrison *v.* Rowan, 3 W. C. C. R. 580; Grabil *v.* Barr, 5 Barr, 441; Denn *v.* Johnson, 2 South. 454; Kinne *v.* Kinne, 9 Conn. 102; Ford *v.* Ford, 7 Humph. 92; Howard *v.* Coke, 7 B. Monr. 665; Blanchard *v.* Nestle, 3 Denio, 37; Modern Probate of Wills, 91. In Scotland an arbitrary test is applied, it being there provided that no settlement or gift executed after the commencement of the disease of which a person dies, except those in the ordinary administration of the estate, shall be valid. If the testator survives sixty days afterwards, or has been to market unsupported, the will is validated. Bell's Dict. "Death Bed."

(*j*) Hacker *v.* Newborn, Style, 427. (*k*) *Ex parte* Fearon, 5 Ves. 633.

(*l*) Scribner *v.* Crane, 2 Paige C. C. R. 147.

(*m*) Dietrick *v.* Dietrick, 5 S. & R. 207; Nussear *v.* Arnold, 13 S. & R. 323; Patterson *v.* Patterson, 6 S. & R. 55.

(*n*) Denton *v.* Franklin, 9 B. Monr. 28. (*o*) Marsh *v.* Tyrel, 2 Hag. Ec. 84, 141.

(*p*) Brydges *v.* King, 1 Hag. Ec. R. 256; Goble *v.* Grant, 1 Green C. R. 629; Baker *v.* Lewis, 4 Rawle, 356.

and of clear capacity, and must expect it to be shown by instructions coming from the deceased himself."(q) To authorize a will in favor of a wife, however, to be set aside, the influence alleged to have been exerted must be shown to have reached coercion, destroying the husband's free agency,(r) or fraud itself must be proved.(s) In ordinary cases also, it will not be enough to prove mere influence, without proof of fraud or contrivance,(t) or such coercion as destroys free agency.(u) "Honest intercession and persuasion," "and fair and flattering speeches," though abundantly proved to have been used, do not affect the instrument's validity.(v) The fact of the paper being entirely in a party's handwriting gives a strong presumption of sanity, which is not effaced by proof of generally impaired intellect, nor by the fact, that when the paper is a will, in it omissions of property exist.(w) The same presumption exists when the testator has a distinct recollection, at the time of the execution of the will, of the terms he directed at the time it was prepared.(x)

§ 6. It is obvious, therefore, that no fixed minimum of capacity can be determined upon, which will be necessary to sustain a contract or will. While, on the one hand, it is clear that a madman or a drunkard, during the prevalence of the insane or drunken delusion is totally incompetent for such a purpose, it is equally clear that persons whose intellects are abundantly strong enough to create an entire responsibility for their acts in a criminal court,(y) will yet be held incompetent to pass away their property, when it appears undue influence or fraud has been used upon them to produce an unjust result.(yy).

§ 7. The existence of idiocy, when that alone is set up, can be determined by comparatively simple tests. If the pretended idiot can be shown to have intelligently performed acts of business during the period in which idiocy is claimed to exist, the allegation of incompetency falls, unless fraud or constraint be shown. Thus in a case determined in Doctors' Commons in March, 1852,(z) Dr. Lushington said, "Before entering upon this branch of the case, I must bear in mind what the nature of the case set up in opposition to the will is. I must repeat that it is not lunacy—it is not monomania—it is not any species of mental disorder, the symptoms of which it may, at periods, be difficult to detect; but the case presented is that of idiocy or imbecility, the characteristic of which is permanence, with little or no variation, though often, in case of idiots, it does sometimes happen that there will be a greater degree of excitement demonstrated than at other periods. How is such a case to be met? I apprehend, to meet it and to show that such a state of things did not exist

(q) Dodge v. Meech, 1 Hag. E. R. 620; Barry v. Butlin, 1 Curtis, 637; see 2 Jarman on Wills, (Am. ed.) 421.
(r) Clarke v. Sawyer, 3 Sanf. Ch. R. 351; Gardiner v. Gardiner, 22 Wend. 526.
(s) Scribner v. Crane, 2 Paige C. R. 147.
(t) Lowe v. Williamson, 1 Green C. R. 82; Blanchard v. Nestle, 3 Denio, 37; 1 Jarman on Wills (2d Am. ed.) 36; 1 Williamson on Exs. (2d Am. ed.) 37.
(u) Brown v. Mollison, 3 Wh. 129; Potts v. House, 6 Georg. 324; Woodward v. James, 3 Strob. 552; see 1 Jarman on Wills (2d Am. ed.) 36.
(v) 1 Jarman on Wills (2d Am. ed.) 37.
(w) M'Daniel's Will, 2 J. J. Marsh, 331; Fullock v. Allison, 3 Hag. 527.
(x) Hathorn v. King, 8 Mass. 371.
(y) See M'Taggart v. Thompson, 2 Harris, 149.
(yy) Chevalier v. Whatley, 12 La. An. 651.
(z) Bannatyne v. Bannatyne, 16 Jur. 864, 14 English R. 581.

at any given period, proofs of acts of business are most important evidence. Many acts of business could possibly be done by a lunatic, and the lunacy not detected; but it is scarcely possible to predicate the same of an idiot or lunatic, or an imbecile person. I shall look, therefore, in the first instance, to the acts of business. It is proved by Mr. Falkner, that the deceased kept an account with Messrs. Tuckwell, at Bath, for four years, from 1818 to 1821, and during all that period, occasionally drew drafts, and all those drafts were paid to himself over the counter. According to the evidence, the deceased came himself to the counter, and there is no proof of any one accompanying him on such occasions; he asked for the sum he wanted; the clerk filled it in, he signed it, and took the money. Surely no idiot could have done this, for he must have exercised thought to go to the bank, memory and judgment as to the thing required; and moreover, his conduct and demeanor could not at such times have been as described by the witnesses against the will, or, from the glaring colors in which his imbecility is depicted, it must have been discovered, and the business never could have been transacted at all. * * * I consider these transactions, then, of first rate importance towards solving all the difficulties of this case; for here, after the lapse of about thirty years, the court has the advantage of facts proved, with the dates duly affixed to them. There is, I must say, not the least evidence to show that in any one of these acts of business the deceased was assisted by any person whatever, the presumption is the other way; and to put these acts upon the very lowest basis on which they can be placed, they do utterly disprove idiocy or imbecility. I will simply repeat what I have already indeed said, that those who are afflicted with lunacy, sometimes have the management of, and can manage, their pecuniary affairs—an idiot, never."

§ 8. It should be kept in mind, that the question of competency is intimately affected by the character of the act or instrument which it is sought to annul. A reasonable marriage, such as that of Lord Portsmouth to his first wife, entered upon under the advice of his family, and to a person every way competent to secure his position and his character from disgrace or injury, may be sustained; while an unsuitable one, to a woman of light character, will be set aside, when it appears that it was influenced by overpowering authority or trickery. A will, making a just distribution of an estate, will be held *per se* strong evidence of disposing capacity, while one turning the testator's property into an unnatural channel, gives at least some presumption to the contrary.(*a*) This is broadly stated by Sir John Nicholl in a recent case,(*b*) where he declares, that where a will is traced into the hands of a testator whose sanity is fairly impeached, but of whose sanity or insanity at the time of doing or performing some act with relation to the will, there is no direct evidence, the agent is to be inferred rational, or the contrary, from the character of the act.(*c*)

§ 9. In all cases except those when the act sought to be annulled was com-

(*a*) Stewart *v.* Lispenard, 26 Wend. 255; Means *v.* Means, 5 Strobh. 167; Roberts *v.* Trawick, 13 Alab. 68; Couch *v.* Couch, 7 Alab. 519; Bannatyne *v.* Bannatyne, 16 Jur. 864, 14 English Rep. 581.

(*b*) Scruby *v.* Fordham, 1 Addams, 90.

(*c*) See generally 1 Jarman on Wills (2 Am. ed.) 69.

mitted during actual insanity, the question is not whether the party had a capacity to do the particular thing intelligently, but whether he had capacity and information enough to comprehend and disregard any attempt which may have been made to coerce or deceive him. Precedents and authority on this branch of law, consequently, must stand by themselves, and cannot be considered as applying to the more important part of the present chapter, where this subject of responsibility for criminal offences is considered.

Mr. Shelford's views on this point are worthy of grave consideration. "One person," he says, "seeing a testator in extreme age, or under extreme sickness, thinks that if he knows those about him, and can answer an ordinary question with respect to the state of his illness, or his wants, such and similar matters render him capable of giving effect to a disposition by will, however complicated it may be, by the mere formal execution of the instrument; while another person may be of opinion, that though a testator, in the ordinary management of his affairs, can hold reasonable conversation, can fully comprehend all the usual and simple transactions of life, yet, if he is unable to take the active management of all his concerns, however involved those concerns may be, or if he is liable to become confused by entering into intricate transactions, he is totally incapable, and cannot enter into a testamentary disposition, however plain and simple it may be. Now, when opinions are formed by such opposite standards, it is obvious much contrariety will occur. Sir John Nicholl observed that experience in the Ecclesiastical Court teaches us, that evidence upon questions of capacity is almost always contradictory, such evidence being commonly that of opinion merely; and this contrariety proceeds from the obvious grounds, that of the witnesses, no two, possibly, have seen the party whose estate is deposed to, at precisely the same circumstances; and that each, again, of the several witnesses, no matter how numerous, measures, possibly, testamentary capacity by his own particular standard. These sources of discrepancy, and many more might be enumerated, are common to all cases of this description. There is an additional source, when the transaction of which they have to speak is remote, a circumstance sufficient in itself to account for no inconsiderable degree of contrariety of evidence, even where the witnesses have to speak of facts merely, and not of opinions formed and inferences built upon facts, of which most of the evidence furnished upon questions of capacity is commonly made up. If the court, therefore, on questions of capacity, is accustomed to rely but little upon such evidence, so far as it is that of mere opinion, but to form its own judgment from the facts and the conduct of the parties at the time, it becomes it to do so, more peculiarly when much of the evidence not merely consists of opinions delivered long subsequently to the transactions which they profess to have suggested them, upon loose recollections, too, and after repeated discussions of the subject matter with interested parties."(*d*)

§ 10. The lowest test of capacity was applied in a very much contested case in New York, which is cited at large by Dr. Beck, and which excited great interest from the immense property at stake, and the respectability of the

(*d*) Shelford on Lunacy, 277–8. See *ex parte* Vanauken, 2 Stockt. (N. U.) 186.

parties. It was there ruled—and for the facts it is not necessary to do more than refer to the pages of the report, or to Dr. Beck's excellent summary—that where a female had been always under the control of her friends, had never attempted to transact business, and manifested intellect and understanding only to a very low degree, a will executed by her in favor of a relative with whom she had spent the latter portion of her life, which was in accordance with intentions previously expressed by her, which was reasonable in itself, and the object of which she understood, was valid, though it did not appear that she had given previous instruction for the draft of the will.(*e*) The authority of the case, it is true, is greatly weakened by the fact that it was decided by a vote of 12 to 6 of the Court of Errors of New York, which, under the constitution then in force, was the Senate of the State, and being chiefly a lay court, never possessed high professional authority, and which in the present instance reversed a decision to the contrary of the late very able Chancellor. Without regarding this case, therefore, as of great weight, so far as the authority of the senators who concurred with the majority are concerned, it may nevertheless be cited as a powerful illustration of the reluctance felt in both the professional and popular mind to overturn a will which in itself is in accordance with common sense and proper feeling.

§ 11. Upon similar principles the contracts of a person claimed to be imbecile or lunatic, are to be tested. An important distinction, however, is to be noticed in this respect. While on the one hand the courts will not lend their aid to *execute* or carry into effect a contract entered into by an incapable person, unless, perhaps, for necessaries,(*f*) where the fact of incapacity was known to the creditor; yet such is not the law when the incapacity was unknown, and no advantage has been taken, particularly when the contract has been in part executed.(*g*) "Where a person," says Pollock, C. B.,(*h*) "apparently of sound mind, and not known to be otherwise, enters into a contract for the purchase of property which is fair and bona fide, and which is executed and completed, and the property, the subject of the matter of the contract, has been paid for and fully enjoyed, and cannot be destroyed, so as to put the parties in *statu quo*, such contract cannot afterwards be set aside, either by the alleged lunatic, or those who represent him."(*i*) It is true that the leaning of American authority was for some time towards the position that the contracts of a lunatic, executed or unexecuted, were *per se* void, unless for necessaries;(*j*) but more recently the justice of the exceptions already noticed has been recognized.(*k*) Nothing, however, but a strong case of fairness, innocence, and fulness of consideration, can validate a deed when the grantor is insane.(*l*)

(*e*) See 2 Beck's Med. Jur. 828, &c.; Stewart *v.* Lispenard, 26 Wend. 255.

(*f*) Chitty on Contracts, 112; Story on Contracts, § 27; Addison on Contracts, 873. Skidmore *v.* Romaine, 2 Bradf. (N. Y.) 122.

(*g*) Molton *v.* Camroux, 4 Exch. 17; S. C. 2 Exch. R. 49. See *ante*, § 2.

(*h*) 2 Exch. 503.

(*i*) See also Beavan *v.* M'Dowell, 24 English R. 486; 9 Wells, H. and G. 309.

(*j*) La Rue *v.* Giltyson, 4 Barr, 375; Mitchell *v.* Kingman, 5 Pick. 431; Rice *v.* Peet, 13 Johns. 543; Grant *v.* Thompson, 4 Connect. 103; Long *v.* Whidden, 2 N. H. 435; Fitzgerald *v.* Reed, 9 Sm. & Mar.; Ceaver *v.* Phelps, 11 Pick. 304.

(*k*) Beals *v.* See, 10 Barr, 56.

(*l*) Desilver's Est. 5 Rawle, 11; Bonsall *v.* Chancellor, 5 Wharton R. 37.

§ 12. Testamentary incapacity does not necessarily presuppose the existence of insanity, in its technical sense. Weakness of intellect from extreme old age, whether arising from great bodily infirmity, or from intemperance, when it disqualifies the testator from knowing or appreciating the nature, effect, or consequences of the act he is engaged in, works a similar disability.(*m*) Great caution, indeed, should be used, lest the existence of extreme old age should lead the medical witness to presume consequent imbecility. Against such a sequence the policy of the law and the interest of humanity unite in protesting. "It is one of the painful consequences of extreme old age," very beautifully said Chancellor Kent, in one of his earlier judgments, "that it ceases to excite interest, and is apt to be left solitary and neglected. The control which the law still gives to a man over the disposal of his property, is one of the most efficient means which he has in protracted life to command the attention due his infirmities. The will of such an aged man ought to be regarded with great tenderness, when it appears not to have been procured by fraudulent acts, but contains those very dispositions which the circumstances of his situation and the course of the natural affections dictated."(*n*)

In harmony with these views, wills have been sustained when the testator was eighty years of age, very deaf, and partially blind;(*o*) where he was of the same age, and was afflicted with a palsy, so that he could neither write nor feed himself;(*p*) and when he was between ninety and a hundred, and greatly debilitated.(*q*) It is true that when in old age the testator is shown to have been imposed upon or coerced, the will will be set aside; but this rather tends to strengthen than invade the sanctity of the testamentary privilege.(*r*)

The same view is to be taken of the bodily infirmities peculiar to old age. If they produce mental debility, of course, they work incapacity. But their mere existence will not be sufficient to produce this result.(*rr*) As long as it can be done consistently with public justice, the policy of the law requires that the protection to old age, afforded by the right of testamentary disposal, should continue unimpaired; and it is permitted to cease only when actual wrong would be done to third parties by its continuance, or where by exposing the possessor to undue solicitation or to imposition, it proves an annoyance rather than an advantage. Nor is this rule without its foundation in the results of observation. The truth that the mind is not necessarily affected by bodily infirmity, is illustrated by numerous cases, one of the most striking of which is that of Dugald Stewart, who when unable from disease to take general exercise, to use his right hand, or to articulate distinctly, composed the third and fourth volumes of his Philosophy of the Human Mind.

§ 13. While a person blind, or deaf and dumb, is fully competent to make a will, the burden is upon the party setting the will up to prove that the tes-

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(*m*) Leech *v.* Leech, 11 Penn. Law J. 177. See in this connection Dr Day's "Practical Treatise on the Domestic Management of the Most Important Diseases of Advanced Life." T. & W. Boome, London. 1849.

(*n*) Van Alst *v.* Hunter, 5 Johns. Ch. 148.

(*o*) Lowe *v.* Williamson, 1 Green Ch. 82.

(*p*) Reed's Will, 2 B. Monr. 79.

(*q*) Van Alst *v.* Hunter, 5 Johns. Ch. 148.

(*r*) 1 Jarm. on Wills, (2d Am. Ed.) 53.

(*rr*) *Ex parte* Vanauken, 2 Stockt. (N. J.) 186.

tator knew the contents of the will, and was not imposed upon.(*s*) It has been questioned whether a person who was both blind and deaf and dumb, is competent to execute any instrument requiring consideration,(*t*) though in a late South Carolina case the possibility of a contrary view seems to be intimated.(*u*) And, however wisely such may have been held to be the law at a time when to be deaf, dumb, and blind, was equivalent to being utterly deprived of the avenues of perception, such can hardly be considered to be the case now, when to that unfortunate class a method of communication has been opened which may fit them to sustain and appreciate the relations of society.

2d. *Partial Insanity.*

§ 14. In most of the American States, proof of the existence of partial insanity is insufficient to defeat a will, unless the will be its direct offspring: provided, that, at the time of making the will, the testator be sane in other respects upon ordinary subjects.(*v*) "It appears to me," says Mr. Justice Sergeant, in delivering an opinion of the Supreme Court of Pennsylvania in 1839,(*w*) "that the only question in such a case is, whether the person was of sound memory and discretion, considering the act done in all its bearings, and judging of the soundness of the mind of the supposed testator by his conduct and declarations at the time, and as connected with his previous insanity, and the degree of restoration of mind in the interval; and that if the erroneous and groundless impressions, received during the time of his delirium, shall retain their hold (whether by some physical derangement of the brain, or by some indelible stamp on the thinking faculties), that person must be considered still under a delusion—the effect continues, and it is only by effects we can judge of the existences of the exciting cause—and if he is under a delusion, though there be but a partial insanity, *yet if it be in relation to the act in question, it is well settled it will invalidate contracts generally, and defeat a will which is the direct offspring of this partial insanity.*"

The converse of this result, depending, however, on the same principle, is illustrated by a case decided by Judge King, in Philadelphia, in 1851. "A monomaniacal delusion," he said, "inveterately entertained by a testator against one who would otherwise have been the natural object of his bounty, and shown to be the reason which has excluded him from it, and to have had no other existence except the distempered imagination of the testator, would invalidate a will made under such influence. And for the very plain reason that a will made under the suggestion of such an insane delusion, is not what the law requires a will to be, the product of a mind capable of reasoning rightly. For although the law recognizes the difference between general and partial insanity, yet if the will has been made under the influence of such partial insanity, and as the product of it, it is as invalid as if made under the effects of

(*s*) 1 Jarman on Wills (2d Am. ed.), 48. (*t*) Ibid.
(*u*) Reynolds *v.* Reynolds, 1 Spear, 756–7.
(*v*) Shelford, Lunacy, 41, 296; 1 Jarm. on Wills (2d Am. ed.), 58.
(*w*) Boyd *v.* Eby, 8 W. 70.

an insanity never so general. Eccentricities of conduct, absurd opinions, or belief in things appearing to us extravagant, although they may be and are evidences of testamentary incapacity, do not constitute it necessarily and in themselves. A man may believe in witches and witchcraft, as it seems this testator did, or like him he may have believed his health to have been permanently affected by slow poisons surreptitiously administered to him, and yet be competent to make a will, where such will is not shown to have some connection with such absurd opinions or extravagant belief, and where the mind is shown to be in other respects sound and vigorous, and the judgment intelligent and clear. This testator was upwards of eighty-three years old when he died, and consequently received his early impressions when the belief in witches and witchcraft still lingered among persons of a much higher social position, and of much better education than himself. Colonial America either inherited from the mother country, or received from the emigration of continental Europe, this absurd notion. Pennsylvania did not so far escape the general contagion as to make it very surprising that a man in the condition of life occupied by the testator, born before the American Revolution, should have participated in it."(*x*)

§ 15. The English rule was for a long time considered settled on the same basis, and was set forth with great fulness by the Prerogative Court, during Sir J. Nicholl's presidency.(*y*) The question there was as to the testamentary capacity of a gentleman named Stott, an eminent electrician, who had an only child, against whom he had, without cause, imbibed an uncontrollable disgust and aversion, which manifested itself in acts of great cruelty and oppression, and ultimately in a will by which she was cut off in favor of collateral relations. Sir J. Nicholl pronounced against the will, saying, "The deceased's state of mind at the time of making his will, is intimately, I think, connected with his state of mind on the subject matter of his will—understanding by this, the disposal, by will, of his property. If the deceased were at *all* times of unsound mind on the subject matter of his will, he *must* have been of unsound mind at *the* time of making his will. To suppose the contrary would be to suppose the deceased both sane and insane at the *same* time and on the *same* subject; a supposition, I apprehend, equally absurd in a legal and moral point of view. And, subject to these considerations, the question in the end to be determined, the point at final issue is—not whether the deceased's insanity in certain *other* particulars, as proved by the daughter, should have the effect of defeating *a* will, *generally*, of the deceased, or even this *identical* will—but it is, whether his insanity, on the subject of his daughter, *as*, also proved by the daughter, should have the effect of defeating, not so much any will (*a* will *generally*), of the *deceased*, as this identical will—and to the decision of that question I am to be understood as solely addressing myself in the following observations:—

"Now the daughter being in this case the sole next of kin, the deceased's only child, it is quite impossible, I think, to disconnect the daughter from the subject matter of his will, that is of his property—they are subjects, in effect, identified. Hence the deceased's insanity on the subject of his daughter *gene-*

(*x*) Leech *v.* Leech, 11 Pa. L. J. 179.
(*y*) Dew *v.* Clark, 1 Addams, 279; 2 Ibid. 102; 3 Ibid. 79.

rally speaking, being proved at *all* times, in my judgment, it follows that his insanity, at the time of making his will, is also proved, in my judgment, unless the contrary is to be inferred from the will itself. But the inference furnished by the will itself (and it is for this only that I refer to the dispositive part—to the contents of the will at all), is quite the other way. For the prominent feature of the deceased's insanity, in respect to the daughter, was aversion or antipathy to the daughter, so pleaded and so proved; and the will is a will plainly inofficious, so far as regards the daughter, being a will by which she is, in effect, disinherited—disinherited, too, in favor of parties nearly utter strangers to the deceased (for so it appears), though not remotely connected with him by blood, being his sister's children. Therefore, it follows, that, in my judgment, the deceased is proved, upon the whole matter, to have been insane at the time of his making this will: which was the daughter's case. * * * Had the contents of the will furnished a contrary inference—had the will, so far as respects the daughter, been in all parts of it, an officious will, the conclusion on this head, and so upon the whole case, *might* have been different; the very contents of the will would in that case have inferred that however partially insane (insane on the subject of his daughter), the deceased might have been, generally speaking, still, that such partial insanity was not in actual operation at the time of his making the will, in which respect the the will *might* have been valid. * * * It has been said repeatedly by the counsel for the residuary legatees, that this 'partial insanity' is a something unknown to the law of England. Now if it be meant by this, that the law of England never deems a person both sane or insane at one and the same time, upon one and the same subject, the assertion is a mere truism (as well, indeed, in reason as in law), and as such is incapable of being effectively opposed. At the same time, as no such sort of partial insanity is set up by the daughter, the case of partial insanity which she has *really* undertaken to sustain, is at no risk from the truth of that position, so understood, being conceded. But if, by that position, it be meant, and intended, that the law of England never deems a party both sane and insane at *different* times, upon the *same* subject; and both sane and insane at the same time upon *different* subjects—(the most usual sense, this last, of the phrase '*partial insanity*,' and the one in which I take it to have been used throughout, by the counsel for the next of kin), there can scarcely be a position more destitute of legal foundation; or rather, there can scarcely be one more adverse to the streams and current of legal authority." The learned judge sustained himself by the authority of Locke, who says, "A man who is very sober, and of a right understanding in all other things, may in *one* particular, be as frantic as any man in Bedlam;" and of Lord Hale, who expressly declares "there is a partial insanityof mind, and a total insanity. The former is either in respect to things [*quoad hoc, vel quoad illud insanire*—some persons, that have a competent use of reason in respect to some subjects, are yet under a particular *dementia*, in respect of some particular discourses, subjects, or applications], or else it is partial in respect of degrees; and this is the condition with very many, especially melancholy persons, who, for the most part, discover their defect in excessive fears and grief, and yet are not wholly destitute of the use of reason."

§ 16. It is true, that when in the same case a bill of review was applied for to Lord Chancellor Lyndhurst, he limited with evident caution his approval of the judgment of Sir J. Nicholl in such a way as to reserve the question of partial insanity as above stated. "I have read his judgment," he says,(*z*) "with great attention; and I collect from it that his meaning is this: that there must be unsoundness of mind to invalidate a will, but that the unsoundness may be evidenced in reference to one or more subjects. All that the learned judge meant to convey was, that it was no objection to the imputation of unsoundness, that it manifested itself only or principally with reference to one particular question, or one particular person."

§ 17. But in 1848, in a very remarkable case before the Privy Council an opinion was delivered, without dissent, by Lord Brougham, as the judgment of himself, Lord Langdale, Dr. Lushington, and Mr. T. Pemberton Leigh, in which the notion of partial insanity on one point as consistent with testamentary capacity, was explicitly repudiated.(*a*) It is true that the case was one in which the same result could have been reached even on Sir J. Nicholl's reasoning. The testatrix, who was advanced in years, was excessively penurious and eccentric, was extremely irritable, wrangled with her servants to an excess, at times indulged in very obscene conversation, believed herself the object of various amorous enterprises, and among others from Lord Melbourne, and Lord J. Russel, who she believed prowled about the house as fishwomen. All this, and more, on Sir J. Nicholl's hypothesis, might have been consistent with a testamentary capacity. But in addition to this, it was shown that the testatrix had an insane delusion that her brother, whom she disinherited, had joined the Catholics, to whom she had an aversion, and haunted her house, also in disguise. Certainly, even on the theory of partial insanity, this, coupled as it was with an inquisition of lunacy, would have been enough to have vacated the will. But Lord Brougham, in delivering the judgment of the Privy Council, went further. "The question being," he said, "whether the will was duly made by a person of sound mind or not, our inquiry, of course, is, whether or not the party possessed his faculties, and possessed them in a healthful state. His mental powers may be still subsiding, no disease may have taken them away, and yet they may have been affected with disease, and thus may not have entitled their possessor to the appellation of a person whose mind was sound.

"Again, the disease affecting them may have been more or less general; it may have extended over a greater or less portion of the understanding, or rather, we ought to say, that it may have affected more, or it may have affected fewer of the mental faculties. For we must keep always in view that which the inaccuracy of ordinary language inclines us to forget, that the mind is one and indivisible; that when we speak of its different powers or faculties, as memory, consciousness, we speak metaphorically, likening the mind to the body, as if it had members or compartments, whereas, in all accuracy of speech, we mean to speak of the mind acting variously, that is, remembering, fancying, reflecting, the same mind in all these operations being the agent. We

(*z*) 5 Russ. Ch. Cases, 163. (*a*) Waring *v.* Waring, 6 Moore P. C. Cases, 349.

therefore cannot in any correctness of language speak of general or partial insanity; but we may most accurately speak of the mind exerting itself in consciousness without cloud or imperfection; but being morbid when it fancies; and so its owner may have a diseased imagination, or the imagination may not be diseased, and yet the memory may be impaired, and the owner be said to have lost his memory. In these cases we do not mean that the mind has one faculty, as consciousness, sound; while another, as memory or imagination is diseased; but that the mind is sound when reflecting on its own operations, and diseased when exercising the combination termed imaginary, or casting the retrospect, called recollecting.

"This view of the subject, though apparently simple, and almost too unquestionable to require, or even to justify a formal statement, is of considerable importance when we come to examine cases of what are called, incorrectly, 'partial insanity,' which would be better described by the phrase 'insanity,' or 'unsoundness,' always existing, though only occasionally manifest.

"Nothing is more certain than the existence of mental disease of this description. Nay, by far the greater number of morbid cases belong to this class. They have acquired a name;—the disease called familiarly, as well as by physicians, 'Monomania,' on the supposition of its being confined, which it rarely is, to a single faculty or exercise of the mind: a person shall be of sound mind, to all appearance, upon all subjects save one or two, and on these he shall be subject to delusions—mistaking for realities the suggestions of his imagination. The disease here is said to be in the imagination; that is, the patient's mind is morbid or unsound when it imagines; healthy and sound when it remembers. Nay, he may be of unsound mind when his imagination is employed on some subjects, in making some combinations, and sound when making others, or making one single kind of combination. Thus he may not believe all his fancies to be realities, but only some or one. Of such a person we usually predicate that he is of unsound mind only upon certain points. I have qualified the proposition thus on purpose; because if the being or essence which we term the mind is unsound on one subject, provided that unsoundness is at all times existing on that subject, it is quite erroneous to suppose such a mind really sound on other subjects. It is only sound in appearance; for if the subject of the delusion be presented to it, the unsoundness which is manifested by believing in the suggestions of fancy, as if they were realities, would break out; consequently, it is absurd to speak of this as a really sound mind (a mind sound when the subject of the delusion is not presented), as it would be to say that a person had not the gout, because, his attention being diverted from the pain by some more powerful sensation by which the person was affected, he, for the moment, was unconscious of his visitation. It follows, from hence, that no confidence can be placed in the acts, or in any act, of a diseased mind, however apparently rational that act may be, appear to be, or may in reality be. The act in question may be exactly such as a person without mental infirmity might well do. But there is this difference between the two cases: the person uniformly and always of sound mind could not, at the moment of the act done, be the prey of morbid delusion, whatever subject was presented to his mind; whereas, the person called partially insane—that is to

say, sometimes appearing to be of sound, and sometimes of unsound mind, would inevitably show his subjection to the disease the instant the topic was suggested. Therefore, we can, with perfect confidence, rely on the act done by the former, because we are sure that no lurking insanity, no particular, or partial, or occasional delusion does mingle itself with the person's act, and materially affect it. But we never can rely on the act, however rational in appearance, done by the latter, because we have no security that the lurking delusion, the real unsoundness, does not mingle itself with, or occasion the act. We are wrong in speaking of partial unsoundness; we are less incorrect in speaking of occasional unsoundness, we should say that the unsoundness always exists, but it requires a reference to the peculiar topic, else it lurks and appears not. But the malady is there, and as the mind is one and the same, it is really diseased, while apparently sound; and really its acts, whatever appearance they may put on, are only the acts of a morbid or unsound mind. Unless this reasoning be well founded, we cannot account for the unanimity with which men have always agreed in regarding as the acts of an insane mind those acts, to all appearance rational, which a person does who labors under delusions of a plainly extravagant nature, though there is nothing in the act done, and nothing in the conduct of the party while doing it, at all connected with the morbid fancies. If these fancies only affect the party now and then; if for some months he is free from them—laboring under them at other times, then his acts apparently rational would not be regarded as those of a person mentally diseased. But if we were convinced that at the time of doing the acts the delusion continued, and was only latent by reason of the mind not having been pointed to its subject, and would have instantly shown itself had that subject been presented, then the act is at once regarded as that of a madman. Thus there have been many cases of persons laboring under the delusion that they were other than themselves; have believed themselves deceased emperors or conquerors; others, supernatural beings. Suppose one, who believed himself the Emperor of *Germany*, and, on all other subjects, was apparently of sound mind, did any act requiring mind, memory, and understanding. Suppose he made his will, and either did not sign it (before signing was required), or, if he did, signed it with his own name; but suppose we were quite convinced that, had any one spoken on the German Diet, or proceeded to abuse the German Emperor, the testator's delusion would at once break forth, then we must at once pronounce the will void, but as officious and as rational, in every respect, as any deposition of property could be; of course, no one could propound such a will with any hopes of probate, if it happened that while making it the delusion had broken out, even although the instrument bore no marks of its existence at the time of its concoction, it must always be a question of evidence, on the whole facts and circumstances of the case, whether or not the morbid delusion existed at the time of the *factum;* that is, whether, had the subject of it been presented, the chord been struck, there would have arisen the insane discord which is absent, to all outward appearance, from the chord not having been struck. The principles which have been laid down do not at all differ from those on which the courts have acted, which text writers have construed, and which scientific men, both moralists and

physicians, have approved. In the well known case of Dew *v.* Clark, reported 3 Addams, 97, but also reported, with the great advantage of the learned judge's corrections, and published separately by Dr. Haggard, we find Sir John Nicholl stating that mere eccentricity is not enough to constitute mental unsoundness, nor great caprice, nor violence of temper, but that there must be an aberration of reason; and he adopts a definition of delusion given by the learned counsel in the cause (now a member of this court), deeming it well described by the expression that 'it is a belief of facts which no rational person would have believed.' Perhaps, in a strictly logical view, this definition is liable to one exception, or, at least, exposed to one criticism, namely: that it gives a consequence for a definition; and it may be more strictly accurate to term 'delusion' the belief of things as realities which exist only in the imagination of the patient. The frame or state of mind which indicates his incapacity to struggle against such an erroneous belief, constitutes an unsound mind. Sir John Nicholl justly adds that such delusions are generally attended with eccentricities, often with violence, very often with exaggerated suspicions and jealousies." * * * * "The existence of delusions being proved, and their continuance proved or assumed, at the date of the *factum*, so that the court is satisfied of the testatrix then laboring under their influence, it is wholly immaterial that they do not appear in the will itself. The party propounding often approached this point in argument, and repeatedly adverted to the fact—perhaps we should say the assertion or assumption—that this will betrays no marks of the alleged delusions, or generally of an unsound mind. There was a manifest disposition to lay down a rule that no person laboring under monomania, or partial insanity, can be deemed intestable, unless the kind of insanity appears on the face of the will. But there was wanting the courage to lay down a proposition which would at once have been rejected, and must have been met with the question, Could any court admit to probate the will of the man who said (in the case cited by Sir John Nicholl in Dew *v.* Clark), 'I am the Christ,' although that will bore no marks whatever of an unsound mind, still less of the dreadful delusion under which the party labored?"

§ 18. It may therefore be considered as the present law of England, that a person partially insane is incompetent, so far as the making of wills or contracts is concerned, though as yet there has been no attempt to adopt the rule in this country. In fact its practical operation would be attended with many difficulties. It is true there are many cases, such as that just commented on, in which the particular monomania overshadows the entire intellect, or where it at least infringes upon the peculiar province of testamentary capacity. But it cannot be denied that in practice, cases of partial insanity or monomania frequently occur, in which there is an inflection of reason so definite and appreciable, as to make it impossible to exclude it from the general class of delusions, and yet which is found to be perfectly consistent with right reason, and with recognized business capacity in other respects. These cases will briefly be noticed.

§ 19. In the first place may be considered that common species of hallucination by which the mind, on being presented with a particular object, groups round it in a kind of reverie, the circumstances by which it is ordinarily asso-

ciated, and then assumes these circumstances as substantive existing facts. This is familiar to every one in the common process of a dream. "Thus," says Sir Walter Scott, "a dreamer hears a noise not sufficiently loud to awaken him entirely; at the same time something accidentally touches him. These impressions instantly form a part of his dreams, and adapt themselves to the tenor of the ideas that occupy his mind, whatever they may be. Nothing is more remarkable than the rapidity with which the imagination furnishes a complete explanation of this interruption to sleep, according to the manner in which ideas are presented by the dream, even without requiring a moment's respite for this operation. For example, if a duel is the subject of the dream, the noise that is really heard becomes the discharge of the pistols of the combatants. If an orator, in his dream, is making a speech, the noise becomes the plaudits of his supposed auditory. If the dreamer is transported in his dreams to the midst of ruins, the noise appears that of the fall of some portion of the walls. In a word, an explanatory system is adopted, in which the rapidity of thought is so great, that if we suppose the noise heard to be the first efforts of some one to awaken the sleeper, the explanation, although requiring a certain train of deductions, is usually finished and complete before a second effort has perfectly awakened the sleeper. There exists in the succession of ideas during sleep, an intuition so rapid, that it recalls the vision in which the prophet Mohammed saw all the wonders of heaven and hell, although the water contained in the jar, which was upset when his ecstasy commenced, was not completely emptied when he recovered the use of his ordinary faculties."

§ 20. The same process of association exists in many temperaments when the faculties are awake, and the hallucination becomes so blended with the reality as to become part of the texture of actual consciousness.

A vivid illustration of this—though in this instance the hallucination was fleeting while for the time entire—is cited from Wigan by De Boismont.(*b*) "I was in Paris," says the former, "at a soirée given by M. Bellart, some days before the execution of the Prince of Moskowa. The usher, having the name of M. Maréchal *aîné*, announced M. le Maréchal Ney. An electric shudder ran through the assembly, and, for my part, I own that the resemblance to the prince was for a moment as perfect to my eyes as reality."

§ 21. An instance of hallucination, produced by association, of a much more permanent character, occurred to the present writer. Having occasion to receive a check as a dividend, for an amount which was readily remembered, as it was the same as had been received on the same day for several previous years, he deposited it, as he supposed, with the teller of the particular bank, which may be called bank A., where he kept an account. It so happened that at the opposite wing of the same building, with an entrance precisely similar, stood another bank, which may be called bank B. He went by mistake into the latter bank, and at once, supposing himself to be in the former, he invested it with the same drapery which it would have had if his supposition had been correct. Not having his bank-book with him, he presented the check to the

(*b*) Rational History of Hallucination, 106.

receiving teller, asking him to credit him with it as a deposit. It so happened that it had been his custom to hold a conversation in reference to a particular matter in which they had a common interest with the teller of bank A. When some weeks afterwards he discovered, on applying to bank A. for the entry in his own book of the deposit, that no such deposit had been noted by the teller, he turned back to the particular day when the check was received, of which the day and the amount was accurately planted on his memory, for the reasons already mentioned, and the actual fact of the deposit was brought to his recollection, grouped with the hallucination that it was bank A. that he had gone into—that it was the teller of bank A. whom he met—and that the particular inquiry so frequently before put to him in bank A. had been put to him then. The fact had been that on forming for himself an arbitrary and fictitious stand-point, he grouped around it the associations which would have attended the reality. So fixed, indeed, was his belief in the reality of the whole scene, that he would have testified to it under oath with as much positiveness as to any fact in his recollection. It was not until some time had expired that his mistake was discovered, and then only upon his accidentally being in bank B. and receiving an inquiry from the teller whether he meant to follow up the isolated deposit he had made on the particular day.

§ 22. Dr. Johnson was confident that he heard his deceased mother's voice, crying "Samuel;" nor was this hallucination ever corrected; and yet no one would maintain that he was incapable of making a will.

§ 23. Lord Castlereagh, a short time before his very solemn death, and under every sanction which could exclude jesting, gave a narrative of a supposed apparition, in which he firmly believed, and which exercised a material influence on his life. When in the Irish Parliament, he went to visit a friend at a castle in the North of Ireland. Shown into a dark and venerable chamber, where there existed every material which would excite a superstitious imagination, having dismissed his valet, he went to bed. Hardly, however, was his candle extinguished when he became aware of a glimmer of light in his room. No fire had been lighted—the curtains were closed—and no explanation affording itself of this phenomenon, he rose from the bed, when, to his surprise, on turning to the point whence the light proceeded, he perceived the figure of a young and beautiful child, with a halo encircling its brow. With perfect confidence in the reality of the object, but believing it had been got up artificially as a joke, he followed it until it nestled in the arch of the great chimney, and at last sunk beneath the fireboard. The next morning he sought in vain for a clue by which the mystery could be dispelled. It was a subject which his host evidently shunned. On putting the question pointedly, however, Lord Castlereagh was informed that it was true that such a spectre as that had been reported in former times to have appeared under the title of the "Radiant Child." Once again the phantom appeared to the same noble and capable statesman—but no longer, it is said, with a radiant crown. This last appearance was not long before his own self-destruction, and yet, if the exterior alone was considered, when he was at the height of his power and glory. Certainly the spectre can now be easily explained, because a man who is weak enough to commit suicide, is not too strong to be haunted in a dream

by an apparition of whose traditional reputation he had undoubtedly heard, though the recollection afterwards escaped him. And yet we have here a case of an hallucination so entire as to produce partial insanity on that point, and perhaps to have been a motive power in his own suicide. Still, it would hardly have been maintained that Lord Castlereagh, than whom no man of his day exhibited, when in public life, greater coolness or business clearness, was incapable, because of this single delusion, of making a contract or will.

§ 24. It is immaterial, so far as the principle is concerned, whether the hallucination be the result of a morbid imagination, as was the case with Lord Castlereagh, or of imposition on the part of others. In either case, if the hallucination be groundless and absurd, the seizing upon it by the mind as an item of faith, equally constitutes partial insanity.

§ 25. A butcher in full health, many years ago, as was related by an eminent physician of Philadelphia, was on his way to the city, when he was met by a party of medical students, who determined to see what would be the effect on him of an attempt to persuade him that he was affected with the premonitory symptoms of a fever then prevalent. At different points, one by one, they accosted him with inquiries as to what was the cause of his paleness, of the livid state of his skin, &c., and as to whether he was aware that marks of the epidemic were on him, &c. At first he sturdily repelled the supposition, but gradually became frightened, and at last returned home to be attacked by the very disease which had been attributed to him. Hearing that their experiment had been carried too far, his tormenters set to work in earnest to undeceive him; but it was to late. "You are joking now; or you are trying to cure a dying man by a trick," was his reply. "You were right at first; you cannot deceive me now by telling me it was a hoax."

It was the firm belief of Lord Herbert, of Cherbury, that a divine vision had indicated to him the correctness of a particular course of religious speculation which, on the faith of the supposed vision, he published, and which he made the basis of his future action. The second Lord Lyttleton was equally persuaded that a divine warning had admonished him of his approaching death. And no less confident, though less serious in its consequences, was the conviction of Philip, second Earl of Chesterfield, of the reality of a similar preternatural interference. One night, in the year 1652, he saw something white, like a spread sheet, at the head of his bed. He tried to seize it, but it slid away and disappeared. His thoughts immediately turning to his wife, who was at Networth, with her father, he hurried there, but was met by a servant, with a letter from his wife, which informed him that precisely the same apparition had appeared to her, and had been the cause of the journey of the messenger whom she had dispatched to inquire as to his health.

§ 26. Abercrombie gives an illustration of habitual hallucination which at the same time was consistent with reason. The patient, when he met a person in the street, was uncertain whether the latter was a real person or a phantom, though with close observation he was able to detect the dissimilarity. The features of the real person would be more decided and more complete than those of the phantom; but the power of discrimination by this process was too uncertain to be relied on, and the only test of which the patient felt cer-

tain was that of the voice, footstep, or touch. The phantom had none of these; the substance, of course, had all. He had the faculty of recalling his visions at will, by powerfully fixing his attention on the conceptions of his mind, but while the hallucination could be invoked at will, it could not be arbitrarily dispelled. That it *was* a hallucination, he was perfectly convinced; and that it was entirely consistent with general reason was demonstrated by his clearness of head and business capacity.

§ 27. A recent case in this country illustrates the same position with remarkable point. A merchant who had for years managed with shrewdness and success an extensive business, became thoroughly imbued with the spirit rapping and spirit conversing hallucination. Though he conducted his business as well as those who were not thus afflicted, his family conceived that this and cognate eccentricities made him a fit subject for a commission of lunacy. This he soon discovered, and laid his plans accordingly. He had theretofore done a cash business, and his punctuality and accuracy had won him extensive credit. He immediately proceeded to buy a large stock of goods from a number of the most sagacious business men within his reach, and gave long notes in exchange. "I do not know how it strikes you," was the way he broached the matter to his family, "but whatever may have been your chances once, they are but light now. All I have to do is to subpœna my friends to whom I have just given my notes, and you may depend upon it, they will not only testify strongly as to their opinion of my sanity, but will bring that opinion down to this particular hour."

§ 28. If the principle announced by Lord Brougham be correct, in no one of the preceding cases could the party affected be considered as possessed of testamentary capacity, or the capacity to contract. "Insane on one point, insane on all," would certainly disfranchise multitudes who are now considered practically competent to discharge all the business relations of life. Of such a doctrine it is difficult to estimate the perilous consequences. A party who cannot be compelled, on the ground of lunacy, to complete his own contract, cannot compel others to complete theirs, and the practical operations of society would be therefore seriously deranged.

§ 29. The cases which have just been noticed, comprise chiefly those in which, while the hallucination is positive, the practical inflection of conduct produced thereby is slight. This, however, cannot be said to be the case with those instances in which a supposed supernatural vision or monitor is received as a guide on the most momentous actions of life. Napoleon declared on many critical occasions that he was conscious of the preternatural vision of a star, which sometimes even appeared in his own cabinet, by which he allowed himself to be guided. Bernadotte, beyond doubt, on one important movement at least, was swerved from his course by the vision of an old woman. Constantine felt or feigned a similar impressibility. These cases, it is true, may be suspected, but suspicion cannot be thus cast on the multitudes of brave men who were driven in border or highland contests from the battle field by a threatening wraith, or who were encouraged to the wildest sacrifices by the beckoning of an imaginary finger or the invocations of a preternatural voice.

§ 30. There are, however, other cases in which there is a general morbid

derangement of all, or of a material portion of the organs. To these, as well as to the great mass of instances where hallucination forms the groundwork, the observations of De Boismont, on the case of a man who supposed that he had sunk all his wealth at the bottom of a well, apply with great force. "It may be asked whether, in the state of mind in which the patient was, whose history we have related, he was capable of making a will. This is a very difficult question; but its solution is not an impossibility. When the conduct of the individual does not depart from received usages, when it is not controlled by one of those false ideas that make him hate his relations and friends without any motive, and when he regulates his expenses prudently, we do not think that whimsical actions, or words, the results of an erroneous belief, but having no influence on the prominent acts of his life, should deprive a person of his civil liberties, and of the power of making his will."

§ 31. Nor should it be forgotten that the effects of such incapacitation would be most cruel to the sufferer himself. Society is prone enough to make eccentricities and weaknesses the subject of contempt, ridicule or insult. The courts should be cautious how, by taking away the power to insure respect, they thus increase the misfortune of a class into which no man can assure himself he may not fall—which includes almost the whole of those whose lot it is to reach extreme old age—and which already carries a burden sufficiently heavy. If such persons cannot reward by their bounty those by whom they are treated with tenderness, and by whose means their comfort is guarded, they will lose, in most instances, the only means remaining to them of self preservation. The law which thus deprives them of their own means of self support, should tender them in return a refuge by which, by public sanction, they could exact that attention which their own influence no longer enables them to secure. This, however, is certainly not done now, nor could it be done on any intelligible basis, without consigning a large proportion of the most efficient members of society to an asylum. As society at present stands, the only remedy seems to be to throw the same tender guardianship around the feeble minded and the eccentric, as in a passage already cited has been so touchingly invoked by Chancellor Kent for the old.

§ 32. In this country, as has already been seen, the law continues to be, that a vein of partial insanity does not affect testamentary capacity, except where it enters into the texture of the will. This has been expressly held to be the case with regard to mere eccentricities, no matter how extravagant, such as a belief in witches, or in the loss of health from the application of slow poison surreptitiously administered.(*c*) When they enter into the subject matter of the will, however, it of course falls.(*d*) And a will, otherwise capable of being sustained, was upheld, notwithstanding it appeared that the testator believed in reference to a future state of existence that there were degrees of happiness therein correspondent to and sympathizing with the circles of society on earth—that as a man stood in the latter, so he stood in the former—and that there his position would be very much determined by the amount of property which he had acquired here.(*e*)

(*c*) Leech *v.* Leech, 11 Penns. Law J. 177; Lee *v.* Lee, 4 M'Cord, 183.
(*d*) Johnson *v.* Moore, 1 Litt. 371. (*e*) Gass *v.* Gass, 3 Humph. 278.

3d. *Lucid Intervals.*(*ee*)

§ 33. Of course, a person who is actually at the time a lunatic, cannot bind himself civilly, and so far as this, there is no ground for discussion. When a party is once proved to have been at the time insane, all question is at an end. The difficulty, however, is to the fact of *time*. Unless what in the courts has been called *habitual* insanity be shown, *i. e.*, such insanity as is, in its nature, continuous and chronic, the fact of the existence of a prior period of lunacy does not suffice even to throw the burden of proof on the party setting up competency.(*f*) The case, however, is otherwise when such habitual insanity is shown to have existed; in which case the presumption is that the party was insane at the time, and the burthen is on those seeking to prove the contrary.(*ff*) "If you can establish," says Sir Wm. Wynne, as cited by Mr. Jarman,(*g*) "that the party afflicted habitually by a malady of the mind has intermissions, and if there was an intermission of the disorder at the time of the act; that being proved, is sufficient, and the general habitual insanity will not affect it; but the effect of it is this: it inverts the order of proof and presumption; for, until proof of habitual insanity, the presumption is, the party agent, like all human creatures, was rational; but when an habitual insanity in the mind of the person who does the act is established, then the party who would take advantage of the fact of an interval of reason must prove it." And in a recent Massachusetts case, Dewey, J., said, "Neither observation nor experience shows us that persons who are insane from the effect of some violent disease, do not usually recover the right use of their mental faculties. Such cases are not unusual, and the return of a sound mind may be anticipated from the subsiding or removal of the disease which has prostrated their minds. It is not, therefore, to be stated as an unqualified maxim of the law, 'once insane, presumed to be always insane;' but reference must be had to the peculiar circumstances connected with the insanity of an individual, in deciding upon its effects upon the burthen of proof, or how far it may authorize the jury to infer that the same condition or state of mind attaches to the individual at a later period. There must be kept in view the distinction between the inferences to be drawn from proof of an habitual or apparently confirmed insanity, and that which may be only temporary."(*h*)

§ 34. In case of idiocy, a slightly different rule seems laid down. Thus, in a late case, the evidence showed that the deceased was, in 1815, placed in confinement as a lunatic, and there remained till 1817, when he was released. In 1820, about which time he was proved to have committed certain rational acts of business,(*hh*) he made a rational will. In 1822 he was again placed in confinement, and so remained till his death, in 1849. In 1833 he was found

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(*ee*) See for the psychological view of this question, *post*, § 254.

(*f*) Ackey *v.* Stephens, 8 Ind. 411; Menkins *v.* Lightner, 18 Ill. 282.

(*ff*) Ibid. Hoge *v.* Fisher, 1 P. C. C. R. 163; Whitenack *v.* Strykee, 1 Green, C. R. 8; Harrison *v.* Rowan, 3 W. C. C. R. 580; Gable *v.* Grant, 2 Green, C. R. 629; Stevens *v.* Vancleve, 4 Wash. C. C. R. 262; Jackson *v.* Vandusen, 5 Johns. 144; Kelly *v.* Webster, 8 Shep. 46; 1 Jarm. on Wills (2d Am. ed.), 65.

(*g*) 1 Jarm. on Wills (2d Am. ed.), 65. (*h*) Hix *v.* Whittemore, 4 Metc. 545.

(*hh*) See *ante*, § 7.

on a commission, to have been of unsound mind, without lucid intervals, since 1815. The will was sustained on the ground that though it is otherwise with regard to lunacy, yet when idiocy is set up, it is disproved by contemporaneous intelligent acts of business.(*i*)

§ 35. Where no extraneous influence is shown to have been exerted, the character of the act itself, as has already been noticed, goes far to determine the capacity of the party at the particular time. In a very late case(*j*) Dr. Lushington said; "In the opinion of a very great judge, Sir William Wynne, in the colebrated case of Cartwright *v.* Cartwright, he said where a rational act was done in a rational manner, such was the strongest and best proof which could arise even as to a lucid interval. Now, I cannot say that I subscribe altogether to this observation of Sir William Wynne, for I do not, but it is entitled to great weight; and, to a certain extent, a rational act done in a rational manner, though not, I think, the strongest and best proof of a lucid interval, does contribute to the establishment of a lucid interval."

4th. *Intoxication.*

§ 36. As has been already incidentally observed, intoxication, when at the time prevailing, renders a party incompetent to make a contract or execute a will.(*jj*) It is true that most of the cases go on the ground of express or implied fraud, so far as acts *inter vivos* are concerned; for it is certainly only a little less culpable to enforce a bargain made with a drunken man than it is to make him drunk on purpose to secure it.(*k*) But the general position is well expressed by Pothier:(*l*) "Drunkenness," he says, "when it goes so far as absolutely to destroy the reason, renders a person, so long as it continues, incapable of contracting, since it renders him incapable of consent."(*m*) So rigorously has this doctrine been applied, that it was even held that drunkenness is a good defence by an indorser of a note against an innocent and bona fide holder;(*n*) though when a man is sober enough to write his own name correctly, it will require strong evidence of stupefaction or delirium to induce a jury to sustain his irresponsibility against an innocent third party. But drunkenness, though it is a shield, cannot be made an offensive weapon; and the law will not permit a man to use his drunkenness as a means of cheating others. Thus, a man who after buying goods when drunk retained them when sober, was held responsible for the price.(*o*)

§ 37. The distinction in this respect is thus stated by Vice-Chancellor Stuart: "The principles acted upon in Cook *v.* Clayworth were that a party being in liquor when he entered into an agreement, was no reason for the court to refuse a decree for specific performance, and they pointed out the rule to be acted on in these cases. In Cory *v.* Cory, and, subsequently, in Nagle *v.* Baylor, the same rule had been acted upon. The course of the court had

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(*i*) Bannantyne *v.* Bannantyne, 16 Jur. 864, 14 English R. 581. (*j*) Ibid.
(*jj*) See Menkins *v.* Lightner, 18 Ill. 282.
(*k*) Parke, B., Gore *v.* Gibson, 13 M. & W. 626; 2 Greenleaf on Ev. § 170; Pitt *v.* Smith, 3 Campb. 33; Fenton *v.* Halloway, 13 Stark, 126. (*l*) Obligations, N. 49.
(*m*) See also Chitty on Contracts, 112; Story on Contracts, 27.
(*n*) Sentance *v.* Poole, 3 C. & P. 1. (*o*) Alderson, B., Gore *v.* Gibson, *ut supra.*

been, in cases of this kind, that it would not assist a person who had obtained or wished to get rid of an agreement or deed on the mere ground of intoxication; but only where any contrivance was used to draw him in to drink, or any unfair advantage taken of his situation, or in that extreme state of intoxication which deprived a man of his reason, did the court interfere. The court was disinclined to interfere in such cases; and if a bill were filed to enforce an agreement and it appeared that no fraud had been used, the duty of the court was to dismiss the bill."(*p*)

§ 38. In actions, however, for *torts* (*i. e.*, cases where the gist is personal injury), drunkenness is no defence to the merits. Thus, if a man is sued for injury to my property or person, it is no defence that he was drunk at the time, for the policy of the law is both to redress such wrongs and to discountenance intoxication.(*q*) And the plaintiff may even introduce the fact of drunkenness as an aggravating item, when the question is whether proper care was used in avoiding an accident. Thus, in a suit for injury to the plaintiff by running a sleigh against him, a very eminent American judge, Gibson, C. J., said, "The evidence of intoxication ought to have been received, not because the legal consequences of a drunken man's acts are different from those of a sober man's acts, but because, where the evidence of negligence is nearly balanced, the fact of drunkenness might turn the scale, inasmuch as a man partially bereft of his faculties would be less observant than if he were sober, and less regardful of the safety of others. For this purpose, but certainly not to inflame the damages, the evidence ought to have been admitted."(*r*)

§ 39. Drunkenness to such an extent as to render a party unconscious of what he is engaged in, or drunkenness even to a slight degree, when its effect is to render a party subject to the influence of others, avoids a will;(*s*) though the mere fact of the testator being at the time under the influence of liquor, will not suffice, unless consequent disability be proved.(*t*) Long continued prior habits of intoxication, also, will not of themselves afford a presumption of incapacity, unless the testator was proved to have been drunk at the time.(*u*) The reason of this distinction between drunkenness and insanity is well pointed out by Sir John Nicholl. Insanity, he argued, may often be *latent*, whereas there can scarcely be such a thing as latent ebriety; and, consequently, all that is required to be shown, in ordinary cases, is the absence of excitement at the time of the act done; at least, the absence of excitement in any such degree as would vitiate the act done; "for," he said, "I suppose it will be readily conceded that, under a mere slight degree of that excitement, the memory and the understanding may be, in substance, as correct as in the total absence of any exciting cause. Whether, where the excitement in some degree is proved to have actually subsisted at the time of the act done, it did or did

(*p*) Stuart, V. C., Shaw *v.* Thackeray, 23 Eng. Reports, 21.
(*q*) Ray. Med. Jur. 292; Co. Lit. 247 (*a*); 4 Rep. 124 (*b*); 4 Bl. Com. 25.
(*r*) Wynn *v.* Allard, 5 W. & S. 525. (*s*) Shelford on Lunacy, 274, 304.
(*t*) Shelford on Lunacy, 276; Starret *v.* Douglass, 2 Yeates, 48; Andress *v.* Weller, 2 Green, C. R. 604; Gardner *v.* Gardner, 21 Wend. 526.
(*u*) Ibid., Black *v.* Ellis, 3 Hill, S. C. 68; Ayrey *v.* Hill, 3 Addams, 206; Shelford on Lunacy, 276.

not subsist in the requisite degree to vitiate the act done, must depend, in each case, upon a *due* consideration of all the circumstances of that case in particular; it belonging to a description of cases that admits of no more definite rule, applicable to the determination of them, than the one I have suggested, that I am aware of."(*v*) Where the will was executed under the influence of drink intentionally and fraudulently administered, of course it falls, by the operation of a rule already noticed with regard to contracts; but where such is not the case, actual derangement of the reasoning faculties, arising by undue excitement, must be shown.(*w*) Certainly the effect would be most deleterious if the mere existence of excitement produced by stimulants was held to vitiate any act performed during its continuance.

II. What is necessary to be proved in order to deprive a party of the management of his estate.

§ 40. In most of the United States, as in England, process exists by which, when a party is incapable of the management of his estate, whether from mental unsoundness or from habitual drunkenness, a committee may be appointed, to whom the custody of his property is committed. It would be out of place to set forth here the statutes by which this process is defined and settled; it is enough now to notice the general scheme of practice which exists in England, and which has been, with the exceptions of only slight alterations of detail, adopted in this country.

§ 41. When there is reason to believe that a party, from unsoundness of mind or habitual drunkenness, is incapable of managing his affairs, a petition lies, generally from any person interested in his person or estate, for the issuing of a commission. Upon the reception of the petition, the court directs a commission to issue to one or more persons—generally required to be learned in the law—directing the inquiry by commissioner and jury, as to the facts of the petition. The commissioner being thus authorized, directs a precept to the sheriff, commanding him to summon a jury, who, when they meet, hear testimony—on both sides if desired—on the matter submitted to them, and after being charged by the commissioner as to the law of the case, return a finding as to whether, from the lunacy or habitual drunkenness complained of, the respondent is incapable of managing his estate. Should the finding be in the affirmative, the court will appoint a committee who will take charge of the respondent's estate,(*x*) subject, however, to the absolute right(*y*) of the respondent to traverse the finding, *i. e.*, to put in a formal denial of it, in which case the question is determined before a court and jury, in the same way with any contested fact. Whether the alleged lunatic really is capable of volition as to a traverse, and desires that a traverse should be entered, will be deter-

(*v*) 1 Jarman on Wills (2d ed.), 54.
(*w*) Wheeler *v.* Alderson, 3 Hagg. 602; 1 Jarman on Wills (2d ed.), 54–5.
(*x*) See as to the practice in regard to the appointment and removal of committees, Black's Est. 6 Harris, 434; Hulings *v.* Laird, 9 Harris, 268.
(*y*) Cumming in Re. 11 Eng. Law and Eq. 202.

mined, it seems, by the chancellor himself by personal examination or otherwise.(z)

§ 42. It will be seen that the point at issue under a commission of lunacy or habitual drunkenness, is the *general*, and not the *partial* or *particular* incompetency of the party who is the subject of the inquiry. It is a matter of some moment, also, that the fullest opportunity of examination be given. When a particular instrument is sought to be vacated, or a particular crime to be excused, the testimony of the medical witness is necessarily drawn from but casual observation, made in most cases at a time when he had no reason to suspect the existence of the disease. Great incentives to fraud also exist, and it is well known how acute must be the penetration, and how sharp the tests which are not sometimes baffled by the simulation of mental unsoundness. On the other hand, a commission of lunacy is executed with deliberation, after a calm and full review of the previous life of the party under consideration. Nor is he likely himself to aid the inquiry by any undue sympathy, for his interests and his pride are both enlisted in resisting his moral and intellectual disfranchisement. It becomes, therefore, a simple test, Is the respondent prevented by mental unsoundness or habitual drunkenness from managing his own estate? If not, no matter how responsible he may be for crime, or capable at particular times of making a bargain, the finding must be against him. Upon a recovery of competency, the commission, on due cause shown, will be superseded.(a)

§ 43. "In commissions of lunacy," says Dr. Winslow, "the witness must not only be prepared to give an opinion as to the then state of mind of the party, and competency to take care of his person and manage his affairs, but he must be prepared occasionally to pronounce judgment as to a prior questionable condition of brain and mind. The alleged lunatic may, under the exercise of undue influence, have previously alienated his property by will, or been induced to execute other important documents. The witness will be called upon to depose as to the probable state of the brain at the time, and as to the length of the alleged existing attack of insanity. Well-marked symptoms of organic cerebral disease may be present, and it will in some cases be an important point to decide, whether such a condition of physical ill health has not been of some years' duration, impairing the mental vigor, destroying all power of rational conduct and healthy continuity of thought, and thus interfering with a right exercise of the judgment and affections in the legitimate disposal of property."(b)

In a case which attracted much popular attention at the time,(c) Chief Baron Pollock declared, that "no person ought to be confined in a lunatic asylum unless dangerous to himself and others." This *dictum*, which certainly is inconsistent with the necessities of medical practice, has been combated and

(z) Cumming in Re. 11 Eng. Law and Eq. 202.

(a) See Lackey *v.* Lackey, 2 B. Monr. 478; Matter of Russel, 1 Barbour C. R. 38; Matter of Barbour, 2 ib. 97; Matter of Mason, 1 ib. 436; John Beaumont's case, 1 Wharton R. 52.

(b) Winslow on Medico-Legal Evidence in cases of Insanity, 129, 130.

(c) Nottridge *v.* Ripley, before Chief Baron Pollock, sitting at Nisi Prius, June, 1849, reported in full in Journ. of Psyc. Med. vol. 2, p. 630.

exploded with great ability by very eminent psychological authority,(*d*) and has not been followed by the current of American judicial opinion. There are necessarily cases when the safety of property and the health of the patient himself, require confinement in an asylum, though there be no danger of violence to himself and others, and it is not likely that the existence of such cases will be again judicially questioned. Whether the confinement, in any particular case, was proper or not, will be for the court and jury, if an action of false imprisonment be brought, to determine specially. And the law in such a case undoubtedly is, that confinement is justifiable, if either the safety of the patient or others require it, or it is necessary for his restoration to health.(*e*)

§ 44. In respect to *drunkenness*, the law is, that while occasional acts of intoxication will not justify a finding of "habitual" drunkenness, yet on the other hand, it is not necessary for such a finding that the party should be constantly in an intoxicated state. Thus, in Pennsylvania, Knox, P. J., in putting the case upon a traverse to the jury, said: "Neither was it necessary to make out the case that a person should be constantly in an intoxicated state, that a man might be an habitual drunkard, and yet be sober at times for days and weeks together. That the question was, had the traverser a fixed habit of drunkenness? Was he habituated to intoxication whenever the opportunity offered? The question is one of fact for the jury to find, but the court has no hesitation in saying, that the man who is intoxicated or drunk the one-half of his time, should be pronounced an habitual drunkard." And in the Supreme Court, Rogers, J., said: "To constitute an habitual drunkard, it is not necessary that a man should be always drunk. It is impossible to lay down any fixed rule as to when a man shall be deemed an habitual drunkard. It must depend upon the decision of the jury under the direction of the court. It may, however, be safely said, that to bring a man within the meaning of the act, it is not necessary that he should always be drunk. Occasional acts of drunkenness, as the judge says, do not make one an habitual drunkard. Nor is it necessary he should be continually in an intoxicated state. A man may be an habitual drunkard, and yet be sober for days and weeks together. The only rule is, has he a fixed habit of drunkenness? Was he habituated to intemperance whenever the opportunity offered? We agree that a man who is intoxicated or drunk one-half his time is an habitual drunkard, and should be pronounced such. We also concur with the court, that if the jury found the traverser to have been at the date of the inquisition an habitual drunkard, it was necessary to decide whether he was capable or incapable of managing his estate. His incapacity in that event is a conclusion of law. It is not necessary to say, it is a *presumptio juris et de jure;* but, at least, it throws the burden of proof of capacity on the traversers. Indeed, it may be well doubted, whether his management or mismanagement of his estate is a matter of inquiry. It is very certain, under the act of the 13th of June,

(*d*) See a remonstrance with the Lord Chief Baron, touching the case of Nottridge *v.* Ripley, by John Conolly, M. D., 1849. A letter to the Lord Chancellor on the defect of the law regulating the custody of lunatics, by Charles Curten Cooper, London, 1849. Psychological Review, vol. 2, p. 564; ib. vol. 3, p. 14. A letter to the Right Hon. Lord Ashley, M. P., relative to the case of Nottridge *v.* Ripley, Dundee, 1849.

(*e*) Hinchman *v.* Ritchie, Brightley R. 143.

1836, proceedings may be instituted against an habitual drunkard who has no estate. But this cannot be if the mismanagement of it be necessary. It is well said, that there must be an evidence of squandering property, to support a proceeding to declare an individual an habitual drunkard, else the object of the act in many cases would be defeated. For it is precautionary in its design, and hence a disposition of mind or body which might lead to the wasting of an estate, is sufficient to justify the enforcement of its provisions.(*f*) It is indeed impossible that a man can be an habitual drunkard without waste or mismanagement, as the very act of drunkenness is itself waste. In this case, even if required, the evidence was full and plenary to this point."(*g*)

III. What degree of unsoundness avoids responsibility for crime.

§ 45. The consideration to be given to this species of defence is thus justly and humanely stated by Parker, C. J., of New Hampshire, in a charge to the grand jury: "The public papers, in giving reports of trials, often say, 'the defence was, as usual, insanity,' or make use of some other expression, indicating that this species of defence is resorted to, in desperation, for the purpose of aiding in the escape of criminals. Such opinions are propagated, in many instances, by those whose feelings are too much enlisted, or whose ignorance respecting the subject is too great, to permit them to form a dispassionate and intelligent judgment; and they have a very pernicious tendency, inasmuch as they excite the public mind, and the unfortunate individual who is really entitled to the benefit of such defence is thereby sometimes deprived of a fair trial. They tend to make the defence of insanity odious, to create an impression against its truth in the outset, and thus to bias the mind of the jury against the prisoner, and to induce them to give little heed to the evidence, in the very cases where the greatest care and attention and impartiality are necessary for the development of truth and the attainment of justice.

"We all concur in the doctrine of the law, that for acts committed during a period of insanity, and induced by it, the party is not responsible; that when the criminal mind is wanting—when, instead of being guided by the reason which God bestowed, the individual is excited and led on by insane fury and impulse, or by the aberrations of a wandering intellect, or a morbid and diseased imagination, or a false and distorted vision and perception of things—punishment should not follow the act as for an offence committed; that when the faculty of distinguishing between right and wrong is wanting, the individual ought not to be held as a moral and accountable agent. As well, nay, much better, might we, as was formerly done in France, institute prosecutions against the brute creation for offences committed by them, and hang a beast for homicide, than to prosecute and condemn a human being who is deprived of his reason; for in such case there is no hope of restoration to a right mind, and a reinstating of a fellow-citizen, who has been once lost to the community,

(*f*) Sill *v.* M'Night, 7 W. & Ser. 245. (*g*) Ludwick *v.* Com. 6 Harris, 173.

in the rights and affections of humanity. But if we imbibe the idea that instances of insanity are very rare—that derangement exists only when it manifests itself by incoherent language and unrestrained fury—that the defence, when offered, is probably the last resort of an untiring advocate, who, convinced that no real defence can avail, will not hesitate to palm off a pretended derangement to procure the escape of his client from merited punishment—if in this way we steel our hearts against all conviction, it is of little avail that we agree to the abstract proposition, that insanity does in fact furnish a sufficient defence against an accusation for crime.

"There are undoubtedly instances where this defence is attempted from the mere conviction that nothing else will avail—cases where the advocate forgets the high duty to which he is called, and excites a prejudice against the case of others, by attempting to procure the escape of a criminal under this pretence; but such are truly rare, and usually unsuccessful."(*gg*)

The difficulties that have attended the discussion of this branch of the law of lunacy have arisen from an attempt to reduce into an inflexible code opinions which, while relatively true in their particular connection, were not meant for general application. Thus, for instance, when a defendant, in whom there is no pretence for mania or homicidal insanity, claims to be exempt from punishment on the ground of incapacity to distinguish right from wrong, the court very properly tells the jury that the question for them to determine is, whether he labors under such incapacity or not. The error has been to seize such an expression as this as an arbitrary elementary dogma, and to insist on its application to all other cases. Or, take the converse, and suppose the defence is merely homicidal insanity. In such a case it would be very proper to tell the jury that, unless they believe the homicidal impulse to have been uncontrollable, they must convict. And yet nothing would be more unjust than to make this proposition, true in itself, a general rule to bear on such cases as idiocy. It is proposed to avoid this difficulty by treating this question practically, in the only way in which it can arise in courts, and to consider briefly, not what is the general limit of moral responsibility in the abstract, but in what cases such responsibility ceases to exist.(*h*) These will be considered as follows:—

(*gg*) Cited Elwell's Malpractice, p. 364.

(*h*) The difficulty in this respect has been increased by the looseness with which legal adjudications are cited by even some of the more eminent text-writers. In fact, while the exigencies of counsel and the duty of judges require a constant recourse to the text-books on this particular science, in making up such text-books the authorized law reports have not been sufficiently relied upon. Dr. Beck, it is true, in his valuable treatise, has spread on his pages reports of several of the older cases, and the same line of authorities has been more cursorily reviewed by others. And even in the very recent edition of Dr. Ray's work on this particular subject—"The Medical Jurisprudence of Insanity"—a work as remarkable for precision of expression and elegance of style as for general judiciousness and accuracy, it is declared that, "judging from the few cases that have been reported, the course of practice in the English criminal courts has been in strict conformity with the principles laid down by Hale." The "principles laid down by Hale" are those which that humane judge and laborious text-writer—who prided himself in having never, on speculations of his own, advanced an opinion or pronounced a judgment—had drawn from the medical authorities of that day. These principles have since then been greatly modified both by legal and medical writers; and it is to be regretted that either class, in reviewing the matter, should confine themselves to the earlier authorities, and then declare that the old law continues unaltered, "judging from the few cases that have been reported." The fact is that both in this country and in England the cases "reported" on the subject are not

1. Where the defendant is incapable of distinguishing right from wrong in reference to the particular case.

"few," but numerous; and if they had been examined in detail, it would have been found that they kept pace with almost equal step with the advance of medical science. How far the latter has kept pace with them may be estimated from the fact that Dr. Ray, the author of the fullest and most recent work on this vexed subject, has, even in his edition of 1853, cited scarcely a single volume of the thousands in which the authorized reports of the American Courts are published. It is true that several American cases are noticed, and delicate shades of opinion declared to have been settled by them, but they are cited from the "notes of counsel," from "Niles' Register," from the "Dollar Newspaper," and from "Zion's Herald." Were no authorized reports to be had, these references might be received, though even then with great allowances; but in two, at least, of the four cases mentioned, authorized reports, both in pamphlet and in aggregate form, have been for some years before the public. Of course not even substantial exactness can be secured by the use of evidence not only so entirely secondary, but which, at the time it was issued, was meant only for popular use.

Of the mistakes arising from looseness of citation in this respect, we may take as an illustration Wood's case, which is relied upon with much complacency by Dr. Winslow, in his late Lectures on Insanity (p. 102), to show that in America "a verdict of lunacy" will be recorded under circumstances which really show nothing more than vehement passion and morbid excitement. In that case, which occurred in Philadelphia in 1838, a father shot his daughter in a paroxysm of rage, caused by her improvident marriage. The prosecution was abandoned by the attorney-general, under circumstances which were not at all connected with the defendant's sanity or insanity; and a verdict of *acquittal* was rendered, not of lunacy, in the teeth of a charge from the very able and humane judge (Judge King) who tried the case, that the defence of insanity had not been in any degree substantiated. The verdict is no authority whatever. It was produced by circumstances very derogatory to public justice, it was received with unbroken disapprobation by the entire community, and it was in direct opposition to the charge of the court, instead of being responsive to it. Had the official report of the case been resorted to, the last fact, at least, would have been discovered.

Some degree of the severity of the censure with which the common law has been visited in this connection will be abated by the accomplished gentlemen who have pronounced it, when they consider these facts. In fact, when the nature of the Common Law—words oftener used than understood—is considered, a much modified view will be taken. The common law has been defined to be statutes worn out by time; it may more properly be treated as the precipitate of the wisdom of all ages, all professions, all countries. If a question is to be tried involving the most delicate point of mechanics, the testimony of experts is taken, and what they declare to be the law of philosophy, the judge declares to be the law of the land. If a question of marine right is to be determined, the mysterious laws of the sea are invoked—the "sweet influences of the Pleiades and the bands of Orion"—and as taught by science, they become part of the common law. And so on a trial where the question at issue was whether a certain species of fish was able to surmount obstructions by which a river in Maine had been dammed up by parties interested in the soil, it was held that the observations of scientific men, versed in this particular topic, were part of the common law of the land for the specific case; and that therefore naturalists, who had given attention to the habits of this fish under such circumstances, could be called to give their opinion on the merits. (Cottrill *v.* Mason, 3 Fairf. 222. See more fully as to cases in which the opinions of experts are evidence, post, § 94.) And the great works of the masters in all professions have become also part of the common law. Even by a judge of remarkable rigidity as a literal commentator of the old writers, this is freely admitted. "I consider the administrators of criminal law greatly indebted to them (writers on medical jurisprudence, &c.) for the results of their valuable experience, and professional discussions on the subject of insanity; and I believe that those judges who carefully study the medical writers, and pay the most respectful but discriminating attention to their scientific researches on the subject, will seldom if ever submit a case to a jury in such a way as to hazard the conviction of a deranged man." (Hornblower, C. J., 1 Zabriskie, 196.) So that when in any particular instance ignorance may be exhibited or injustice done, it must be attributed, not to a want of flexibility in the system, but to an imperfect dissemination of truth by those who have assumed its guardianship.

Newspaper and other unofficial reports, in fact, however interesting, are of no legal authority, and they should be to a peculiar degree received with the same qualifications which have been noticed as required by all *nisi prius* charges. What a judge tells a

2. Where he is acting under an insane delusion as to facts which, if true, would have relieved the act from responsibility, or when, in connection with such insane delusion, his reasoning powers are so depraved as to make the commission of the particular act a natural result of the delusion.

3. When he is impelled by a morbid and uncontrollable impulse to commit the particular act.

After which will be considered,

4. The relations of drunkenness to responsibility for crime.

When other cases arise in which a sober and enlightened medical observation declares that there is no real moral responsibility in the patient, the same opinion will be adopted by the courts upon trial.

At present the reported cases may be classed under the preceding heads, to which attention is now invited.

1st. *When the defendant is incapable of distinguishing right from wrong in reference to the particular act.*

§ 46. Under this head may be enumerated persons afflicted with idiocy or amentia, or with general mania. It is certain that wherever such incapacity is shown to exist, the court will direct an acquittal; or if a jury should convict in the teeth of such instructions, the court will set the verdict aside. The authorities to this effect are so numerous, that a general reference to them is all that is here necessary, it being observed at the same time, that while the earlier cases lean to the position that such depravation of understanding must be general, it is now conceded that it is enough, if it is shown to have existed in reference to the particular act.(*i*)

To precisely this effect is the answer of the fifteen judges to the question propounded to them by the House of Lords in June, 1843—answers which were extra-judicially delivered, and which, therefore, though of weight as *opin-*

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jury is meant for a particular issue. If the evidence should show an old grudge, his duty would undoubtedly be to say to the jury that drunkenness must be left entirely out of consideration. If the defendant and the deceased were mere strangers, and the defendant in sudden passion, from what, to a man in his state of mind, would be adequate provocation, killed the deceased, it would be proper to tell the jury that drunkenness in this case would lower the case to manslaughter. It is plain, however, that expressions directed to a particular state of facts, cannot properly be severed from the context, and propounded as absolute independent principles applicable to all cases whatever. It is only by carefully marshalling the facts that we learn what the opinion of the judge trying the case really was, and even then the position of the court, the opportunities it has possessed for revision and a consultation of authorities after argument, and the authenticity and accuracy of the report, enter largely into the question how far the opinion so expressed is of weight.

(*i*) 1 Inst. 247; Bac. Abr. Idiot. Co. Litt. 247, (*a*); 1 Russ. on Cr. by Greaves, 13; 1 Hawk. cl. s. 3; 4 Bla. Com. 24; Collinson on Lunacy, 573, 673, (*n.*); R. *v.* Oxford, 9 C. & P. 533; Burrow's Case, 1 Lewin, 238; R. *v.* Goode, 7 Ad. & El. 536; 67 Hans. Par. Deb. 728; Bowler's Case, Hadfield's Case, Ibid. 480; 1 Russ. 11; 27 How. St. Tr. 1316; Com. *v.* Rogers, 7 Metc. 500; 7 Bost. Law Rep. 449; Com. *v.* Mosler, 4 Barr, 267; Freeman *v.* People, 4 Denio, 10; State *v.* Spencer, 1 Zabriskie, 196; State *v.* Gardiner, Wright's Ohio R. 392; Com. *v.* Farkin, 3 Penn. L. J. 482; Vance *v.* Com. 2 Virg. C. 132; M'Allister *v.* State, 17 Alab. 434; U. S. *v.* Shults, 6 McLean, 121; People *v.* Sprague, 2 Parker C. R. 43; State *v.* Hunting, 21 Mis. (6 Bennet) 464; R. *v.* Barton, 3 Cox C. C. 275; R. *v.* Offord, 5 C. & P. 168; R. *v.* Higginson, 1 C. & K. 129; R. *v.* Stokes, 3 C. & K. 185; R. *v.* Layton, 4 Cox, C. C. 149; R. *v.* Vaughan, 1 Cox, C. C. 80.

ions, are not binding as *authority*. "The jury," they said, "ought to be told in all cases that every man is presumed to be sane, and to possess a sufficient degree of reason to be responsible for his crimes until the contrary be proved to their satisfaction; and that to establish a defence on the ground of insanity, it must be clearly proved that at the time of committing the act, the party accused was laboring under such a defect of reason, from disease of the mind, as not to know the nature and quality of the act he was doing, or if he did know it, that he did not know he was doing what was wrong."(*j*)

2d. *When the defendant is acting under an insane delusion as to circumstances, which, if true, would relieve the act from responsibility, or where his reasoning powers are so depraved as to make the commission of the particular act the natural consequence of the delusion.*

§ 47. The answer of the English judges on this point is worthy of notice. The question propounded to them in this respect, was, "If a person, under an insane delusion as to existing facts, commits an offence in consequence thereof, is he thereby excused?" "To which question," they replied, "the answer must of course depend on the nature of the delusion: but, making the same assumption as we did before, namely, that he labors under such partial delusion only, and is not in other respects insane, we think he must be considered in the same situation as to responsibility, as if the facts with respect to which the delusion exists, were real. For example; if under the influence of his delusion, he supposes another man to be in the act of attempting to take away his life, and he kills that man, as he supposes, in self defence, he would be exempt from punishment. If his delusion was, that the deceased had inflicted a serious injury to his character and fortune, and he killed him in revenge for such supposed injury, he would be liable to punishment."

§ 48. So far as the law thus stated goes—and it is stated with extreme caution—it has been always recognized as binding in this country. Even where there is no pretence of insanity, it has been held in one State, that if a man, though in no danger of serious bodily harm, through fear, alarm, or cowardice, kill another under the impression that great bodily injury is about to be inflicted on him, it is neither manslaughter nor murder, but self defence;(*k*) and though this proposition is too broadly stated, as is remarked by Bronson, J., when commenting on it in a recent case in New York, and should be qualified as to make it necessary that there should be facts and circumstances existing which would lead the jury to believe that the defendant had reasonable (in proportion to his own lights) grounds for his belief, yet with this qualification it is now generally received.(*l*) And, indeed, as shown by Mr. Justice Bronson, in the case just noticed, after the general though tardy acquiescence

(*j*) 1 Car. & Kir. 134; 8 Scott, N. R. 595. (*k*) Granger *v.* State, 5 Yerger, 459.

(*l*) Shorter *v.* People, 2 Comstock, 197–202, S. C. 4 Barb. 460; Monroe *v.* State, 5 Geo. 85; State *v.* Scott, 4 Iredell, 409; People *v.* M'Leod, 1 Hill, 420; People *v.* Pine, 2 Barbour, 168; Roberts *v.* Slate, 3 Georg. 310; Com. *v.* Rogers, *supra*. See generally Wharton on Homicide, 216, 7, 8, 9, &c., and Whart. C. L. 1024–8, and a very interesting series of notes in 7 Bost. Law. Rep. (N. S.) 575, 689, &c. See, also, Sloo's case, reported in 15 Am. Journ. Ins. 33.

in Selfridge's case, where the same view was takan as early as 1805, by Chief Justice Parker, of Massachusetts, and after the almost literal incorporation of the leading distinctions of the latter case in the revised Statutes of New York, as well as into the judicial system of most of the States, the point must be considered as finally at rest. Perhaps the doctrine, as laid down originally in Selfridge's case, would have met with a much earlier acquiescence had not the supposed political bias of the court in that extraordinary trial, and the remarkable laxity shown in the framing of the bill and in the adjustment of bail, led to a deep-seated professional prejudice which struck at even such parts of the charge as were indisputably sound.(*m*)

In Levett's case, which has never been questioned, and which has been sanctioned by the most rigid of the common law jurists, it was held a sufficient defence to an indictment for murder, that the mortal blow was struck by the defendant under the delusion that the deceased was a robber, who had entered the house.(*mm*)

§ 49. In none of the cases which have just been noticed, is the *actual* existence of danger an essential ingredient, and certainly, as the intentions of an assailant are incapable of positive ascertainment, such a danger can never be absolutely shown to exist. It is true that when the point has not been directly before the judicial mind, *dicta* have been thrown out to the effect, that the danger must be such as to alarm a reasonable man, but whenever the requisite state of facts has been presented, courts have not hesitated to say that the danger must be estimated, not by the jury's standard, but by that of the defendant himself. Thus, a very enlightened and learned judge in Pennsylvania, one who would be among the last to weaken any of the sanctions of human life, in a late case directed the jury to take into consideration "the relative characters, as individuals," of the deceased and the defendant, and, in determining whether the danger really was imminent or not, to inquire "whether the deceased was bold, strong, and of a violent and vindictive character, and the defendant much weaker, and of a timid disposition." And to the same effect will be found the cases in other American Courts elsewhere more particularly noticed.(*mmm*)

(*m*) In a former work (Wharton's C. L. 2d ed. 390), the present writer went into a critical examination of Selfridge's case, and advanced the opinion that the verdict, as well as the preliminary proceedings, were inconsistent with a just appreciation of human life, and with the dignity of public justice. This view is by no means retracted; and the gradual development of the political correspondence of those days shows that an approval of Selfridge's course—the shooting down by a man of thirty of a lad of eighteen, then an undergraduate in Harvard College, *because* the latter thought proper to suppose that the former, whose father he had just posted, might be ready to avenge the insult—was made a party test. Indeed, John Adams (Cunning. Cor. 70) tells us that "the great political parties in the State were arranged under their respective standards on the simple question of the guilt or innocence of an individual under a criminal accusation." But it is due to the excellent jurist who presided at the trial to say that, however, in the reception and adjustment of bail—two thousand dollars—he may have been influenced by those political heats to which even the bench in those times was subject, his charge is a fair statement of the English common law, as adapted to our social condition. And however great may have been the zeal with which the case has been assailed, it is now impossible to refuse to recognize it as having been largely and definitely influential in settling this branch of American Jurisprudence.

(*mm*) Levett's case, Cro. Car. 438, 1 Hale, 42, 474, Wharton's C. L. § 18, 1027.

(*mmm*) See Wh. C. L. § 641, &c., 1026-7.

§ 50. If, therefore, a delusion that a party is in danger, whether such delusion be the result of insanity or of physical causes, is a justification of violence adequate to remove the supposed danger—and the answer of the English judges on this point corresponds with our own—it is difficult to avoid the conclusion, that a delusion as to the amount of force necessary to obviate the imagined attack should be equally potent. Thus, for instance, it is stated by the English judges, that if the party is under an insane delusion that the deceased is about to take his life, and he kills him to prevent it, he is to be exempt from punishment. The gist of this position consists in the *delusion*. If, therefore, by an insane delusion, or *depravation* of the reasoning faculty, the defendant insanely believes, either that the imagined evil is so intolerable as to make life-taking necessary or justifiable in order to avert it, or that while the evil is of a lesser grade, life-taking is an appropriate and just way of getting rid of it, the same reasoning applies. The principle may logically be stated thus :—

1. Any species of insane delusion exempts from punishment the perpetrator of an act committed under its influence.

2. The belief, unfounded in fact, that a party is in immediate danger of his life from another, is such a delusion.

Or the belief that taking the life of another is the appropriate remedy for a minor though imagined evil, is also such a delusion.

3. Therefore, homicide, under either of these beliefs, is not liable to punishment.(*n*)

§ 51. The minor premise, it will at once be seen, may be varied, without weakening the conclusion, by inserting in its place any insane delusion, the existence of which would deprive the act of guilty consciousness. That an insane delusion, as to the value or meaning of human life, will have this effect, even though the party himself knows when committing the act that he is doing wrong, and is violating the laws of the land, is illustrated by Lord Erskine, in a well-known case : "Let me suppose," he said, "the character of an insane delusion consisted in the belief that some given person was any brute animal, or an inanimate being (and such cases have existed), and that upon the trial of such a lunatic for murder, you, being on your oaths, were convinced, upon the uncontradicted evidence of one hundred persons, that he believed the man he had destroyed to have been a potter's vessel; that it was quite impossible to doubt that fact, although to other intents and purposes he was sane—answering, reasoning, acting as men not in any manner tainted with insanity converse and reason and conduct themselves. Suppose, further, that he believed the man whom he destroyed, but whom he destroyed as a potter's vessel, to be the property of another, and that he had malice against such supposed person, and that he meant to injure him, knowing the act he was doing to be malicious and injurious; and that, in short, he had full know-

(*n*) It is important that by "punishment," as here used, should be understood such punishment as is inflicted on persons of sound mind. It is essential, however, to the policy of the present more humane mode of treatment for the insane, that, in all cases where a party is acquitted *on ground of insanity*, strict confinement should be directed, in such a way as will exempt the community from any probable recurrence of such delirious outrages. This will hereafter be more fully considered : *post*, §§ 259–276.

ledge of all principles of good and evil; yet would it be possible to convict such a person of murder, if, from the influence of the disease, he was ignorant of the relation in which he stood to the man he had destroyed, and was utterly *unconscious* that he had struck at the life of a human being?"(*o*)

An instance of an hallucination, founded on an intended auricular deception, is given in Charles Brockden Brown's novel of Wieland, and is well known to be founded on facts. A man of excessively morbid temperament is so wrought upon by ventriloquism, as to believe himself under supernatural command to kill his wife. He does so under the stress of what he conceives to be a pure legal necessity. A similar case may be supposed in a sincere believer in spirit-rapping, who is ordered by the medium to commit a violation of the law. In this case the medium is the principal in the first degree, but the actual perpetrator of the act, under the present condition of the law, is entitled to an acquittal on the ground of insanity. At the same time it is very important that in all such cases future restraint should be applied, until a sound condition of the reason be restored. Similar delusions in case of sleep-drunkenness have been held to confer irresponsibility.(*oo*)

A man fancies himself to be the Grand Lama or Alexander the Great, and supposes that his neighbor is brought before him for an invasion of his sovereignty, and he cuts off his head or throttles him. He knows he is doing wrong; perhaps, from a sense of guilt, he conceals the body: he may have a clear perception of the legal consequences of the act. According to Mr. Wigan, such an association of a consciousness of the objective guilt and consequences of an act with an insane delusion, as to its subjective relation, is readily explained on the principle of the duality of the human mind; but however this may be, it is a matter in which all observers agree that the lunatic is, in most instances, conscious of the moral relations of his conduct.(*p*) Nor, even under the severe sanction of the older English text writers (who have, by their failure to reach this point, demonstrated how dangerous it is, with our imperfect experience, to attempt to codify or dogmatize the laws into a few absolute propositions), has this truth evaded the practical recognition of the courts. Thus, in a case where it was proved that the defendant had taken the life of another under the notion that he was set about with a conspiracy to subject him to imprisonment and death, Lord Lyndhurst, while quoting with apparent entire acquiescence, Hale's doctrine, as affirmed by Sir James Mansfield in Bellingham's case, thought it not too liberal a sweep for him to tell the jury that they might "acquit the prisoner on the ground of insanity, if he did not know, when he committed the act, what the effect of it was with reference to the crime of murder." Now an acquittal would be easy enough if it be necessary, in order to create responsibility, that the party should know the effect of the act with reference to a question whose meaning, even to the court itself, appears to have been enveloped in so much mist. But there can be no

(*o*) Winslow on Plea of Insanity, 6. (*oo*) Post, § 151, &c.

(*p*) Wigan on Insanity, &c., London, 1844, 65; Winslow, Plea of Insanity, 16; Ray. Med. Jur. of Ins. § 17; Siebold Gericht, Med. § 219; Pinel, Traité sur alienation mentale, 2d ed., Par. 1809, 156; Riel, Fieberlehre, 4 Bd. 396; Groos, Die Lehre von der Mania sine Delirio, Heidelberg, 1830; De Boismont on Halluc., Phil. 1853, 506.

doubt, after careful examination of the whole case, that the point Lord Lyndhurst decided was, that a man who, under an insane delusion, shoots another, is irresponsible when the act is the product of the delusion. Such, indeed, on general reasoning, must be held to be the law in this country, and such will it be held to be when any particular case arises which requires its application. The fact that against this view militate certain expressions—*obiter dicta*—in recorded opinions, as well as in the answers of the English judges, will not prevent its practical recognition, any more than Lord Lyndhurst was prevented, by the first class of authorities, from advising the acquittal of Offord, and afterwards maintaining that that acquittal was consistent with the very precedents now cited against it.

§ 52. The delusion, however, must go to the root of the crime; or, in other words, the crime must have been the result of the delusion. Dr. Caspar(*q*) has given us a pregnant illustration of this: A merchant, named Schraber, was convicted of cheating by false pretences and false information, and was sentenced to imprisonment for six years. On an application to the court to reconsider the sentence, insanity was set up, and it appeared that the prisoner either felt or feigned a belief that he was a legitimate son of the late Duke Charles of Mecklenberg Strelitz; which certainly, if not a mere fiction, was an insane delusion. Much reason existed to believe that the whole thing was simulated; but independently of this, the court was clear that as the mania, if real, had no connection with his crime, it formed no ground for a revision of the sentence. Partial insanity, it is clear, does not exonerate when the reason is not affected as to the particular act.(*qq*)

3d. *Where the defendant is impelled by a morbid and uncontrollable impulse to commit the particular act.*(*r*)

§ 53. The questions propounded to the English judges related solely to the doctrine of insane delusions; and the replies, though containing general expressions, can hardly, even in England, be considered as authoritative in a case where the defence is monomaniac impulse. In this country, the effect of such a defence, as distinguished from that of insane delusion, has been the subject of special consideration. The first case in which it was gravely considered is that of Commonwealth *v.* Rodgers, before the Supreme Court of Massachusetts, in the spring of 1844.(*rr*) Chief Justice Shaw—whose conservative tendencies on the great sanctions of human life cannot be suspected—found himself, in preparing his charge, embarrassed by the conflict between the dogmas of the older judges and the necessities of the particular case, and there is an evident struggle on his part to preserve as much as he could of the letter of the former

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(*q*) Wochenschrift, Gr. 31–32.

(*qq*) State *v.* Hunting, 21 Miss. (6 Bennett), 464; Bovard *v.* State, 30 Miss. (1 George), 600; Com. *v.* Mosler, 4 Barr, 266.

(*r*) The editors of the 11th edition of Beck's Medical Jurisprudence (vol. 1, p. 741) give some valuable remarks as to the difficulties attending the nomenclature of this species of derangement.

(*rr*) This case is reported with great fulness, in pamphlet shape, by Messrs. Bemes & Bigelow, and is incorporated, in a condensed form, in the 7th volume of Metcalf's Reports, p. 500.

and at the same time to establish a principle by which the latter could be properly respected. He begins—we cite from the authorized report—by laying down two propositions of great breadth. "In order to constitute a crime," he says, "a person must have intelligence and capacity enough to have a criminal intent and purpose; and if his reason and mental powers are either so deficient that he has no will, no conscience, *or* controlling mental power, *or* if, through the overwhelming violence of mental disease, his intellectual power is for the time obliterated, he is not a responsible moral agent, and is not punishable for criminal acts. These extremes," he then proceeds to state, "are easily distinguished, and not to be mistaken. The difficulty lies between these extremes, in the cases of partial insanity, where the mind may be clouded and weakened, but not incapable of remembering, reasoning, and judging; or so perverted by insane delusion, as to act under false impressions and influences." To such cases—to those where the mind is not "incapable of judging," &c., and to those where it acts "under false impressions and influences,"—and to such alone, he applies the "right and wrong" test; reserving it to a very small sphere of action, since the defence of insanity would scarcely be ventured where there was both a capacity to judge, reason, and remember, and a freedom from false "impressions and influences." Taking up the particular defence of monomania, which was that advanced in the case before him, he proceeds to state the law, with a liberality in entire accordance with the weight of medical authority. "This" (monomania) "may operate as an excuse for a criminal act in one of two modes. 1. Either the delusion is such that the person under its influence has a real and firm belief of some fact, not true in itself, but which, if it were true, would excuse his act: as where the belief is that the party killed had an immediate design upon his life, and under that belief the insane man kills in supposed self-defence. A common instance is where he fully believes that the act he is doing is done by the immediate command of God, and he acts under the delusive but sincere belief that what he is doing, is by the command of a superior power, which supersedes all human laws, and the laws of nature. 2. Or this state of delusion indicates, to an experienced person, that the mind is in a diseased state; that the known tendency of that diseased state of the mind is to break out into sudden paroxysms of violence, venting itself in homicide, or other violent acts towards friend and foe indiscriminately; so that, although there were no previous indications of violence, yet the subsequent act connecting itself with the previous symptoms and indications, will enable an experienced person to say, that the outbreak was of such a character that, for the time being, it must have overborne memory and reason; that the act was the result of the disease and not of a mind capable of choosing; in short, that it was the result of uncontrollable impulse, and not of a person acted on by motives, and governed by will." * * * "Are the facts of such a character, taken in connection with the opinion of professional witnesses, as to induce the jury to believe that the accused was laboring for days under monomonia, attended with delusion, and did thus indicate such a diseased state of the mind, that the act of killing the warden was to be considered as an outbreak or paroxysm of disease, which

for the time being overwhelmed and superseded reason and judgment so that the diseased was not an accountable agent? If such was the case, the accused is entitled to an acquittal."

§ 54. In the fall of 1846, a similar defence was started before three of the judges of the Supreme Court of Pennsylvania, then holding an Oyer and Terminer in Philadelphia. In his charge to the jury, Chief Justice Gibson—a most able judge, thoroughly disciplined in and wedded to the common law, but at the same time endowed with a remarkable zest for and a mastery over collateral sciences—after, in the first place, vehemently repudiating the doctrine that partial insanity excuses anything but its direct results, and sliding, in reference to such cases, into the "right and wrong" test, proceeds: "But there is a *moral or homicidal* insanity, consisting of an irresistible inclination to kill or to commit some other particular offence.(*s*) There may be an unseen ligament pressing on the mind, drawing it to *consequences which it sees but cannot avoid*, and placing it under a coercion which, while its results are clearly perceived, is incapable of resistance. The doctrine which acknowledges this mania is dangerous in its relations, and can be recognized only in the clearest cases. It ought to be shown to have been habitual, or at least to have evinced itself in more than a single instance. It is seldom directed against a particular individual; but that it may be so, is proved by the case of the young woman who was deluded by an irresistible impulse to destroy her child, *though aware of the heinous* nature of the act. The frequency of this constitutional malady is fortunately small, and it is better to confine it within the strictest limits. If juries were to allow it as a general motive, operating in cases of this character, its recognition would destroy social order as well as personal safety. To establish it as a justification in any particular case, it is necessary either to show, by clear proofs, its contemporaneous existence evinced by present circumstances, or the existence of an habitual tendency developed in previous cases, becoming in itself a second nature."(*ss*)

§ 55. In a still earlier case in Pennsylvania, Judge Lewis, then presiding in Lycoming County, and now Chief Justice of Pennsylvania, a judge by whom the subject of medical jurisprudence has received peculiar and careful attention —recognized the same doctrine, though with even greater reluctance. "Moral insanity arises from the existence of some of the natural propensities in such violence, that it is impossible not to yield to them. It bears a striking resemblance to vice, which is said to consist in an undue excitement of the passions and will, and in their irregular or crooked actions leading to crime. It is therefore to be received with the utmost scrutiny. It is not generally admitted in legal tribunals as a species of insanity which relieves from responsibility for crime, and it ought never to be admitted as a defence, until it is shown that these propensities exist in such violence, as to subjugate the intellect, control the will, and render it impossible for the party to do otherwise than yield. Where its existence is fully established, this species of insanity relieves

(*s*) The charge was oral, having been reported by the present writer, and but hastily revised by the judge himself, which may account for the want of literal exactness in this and other expressions.

(*ss*) Com. *v.* Mosler, 4 Barr, 266.

from accountability to human laws. But this state of mind is not to be presumed without evidence, nor does it usually occur without some premonitory symptoms indicating its approach."(*t*)

In Ohio, it has been laid down, though with much hesitation, "that there

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(*t*) The same view was, some years after, repeated by the same enlightened and able judge; Lewis Cr. Law, 404; and by Judge Edmonds (2 Am. Jour. of Ins.): Judge Whiting (Freeman's Trial—Pamph.). In 1858, in John Freeth's case, tried before the Philadelphia Oyer and Terminer, Judge Ludlow charged the jury partly as follows:—

"Besides the kinds of insanity to which I have already referred, and which strictly speaking affect the mind only, we have moral or homicidal insanity, which seems to be *an irresistible inclination to kill, or to commit some other particular offence.* We are obliged by the force of authority to say to you, that there is such a disease known to the law as homicidal insanity; what it is, or in what it consists, no lawyer or judge has ever yet been able to explain with precision; physicians, especially those having charge of the insane, gradually, it would seem, come to the conclusion, that all wicked men are mad, and many of the judges have so far fallen into the same error as to render it possible for any man to escape the penalty which the law affixes to crime.

"We do not intend to be understood as expressing the opinion that in some instances human beings are not afflicted with a homicidal mania, but we do intend to say that a defence consisting exclusively of this species of insanity, has frequently been made the means by which a notorious offender has escaped punishment. What, then, is that form of disease, denominated *homicidal mania*, which will excuse one for having committed a murder?

"Chief Justice Gibson calls it, 'that unseen ligament pressing on the mind, and drawing it to consequences which it sees but cannot avoid, and placing it under a coercion which, while its results are clearly perceived, is incapable of resistance'—'an irresistible inclination to kill.'

"If by moral insanity is to be understood only a *disordered* or *perverted* state of the affections or moral powers of the mind, it cannot be too soon discarded as affording any shield from punishment for crime; if it can be truly said that one who indulges in violent emotions, such as remorse, anger, shame, grief, and the like, is afflicted with homicidal insanity, it will be difficult, yes, impossible, to say where sanity ends and insanity begins; for, by way of illustration, the man who is lashed into fury by a fit of *anger* is in one sense insane.

"As a general rule it will be found that instances are rare of cases of homicidal insanity occurring wherein the mania is not of a *general nature*, and results in a desire to kill any and every person who may chance to fall within the range of the maniac's malevolence; as it is general, so also is it based upon *imaginary* and not *real* wrongs; if it is directed against a particular person (as is sometimes the case), then also the cause of the act will generally be imaginary; when, therefore, the jury find from the evidence that the act has been the result of an imaginary but *real* wrong, they will take care to examine with great caution into the circumstances of the case, so that with the real wrong, they may not also discover revenge, anger, and kindred emotions of the mind to be the real *motive* which has occasioned the homicidal act.

"Orfila has said, 'that the mind is always greatly troubled when it is agitated by anger, tormented by an unfortunate love, bewildered by jealousy, overcome by despair, haunted by terror, or corrupted by an unconquerable desire for vengeance. Then, as is commonly said, a man is no longer master of himself, his reason is affected, his ideas are in disorder, he is *like a madman*. But in all these cases a man does not lose his knowledge of the real relations of things; he may exaggerate his misfortune, but this misfortune is real, and if it carry him to commit a criminal act, this act is perfectly well-motived.'

"The man who has a clear conception of the various relations of life, and the real relation of things, is not often afflicted with insanity of any description. He may become angry, and in a fit of temper kill his enemy, or even his friend, but this is not, and I hope never will be, called in courts of justice insanity. Again, one who is really driven on by an uncontrollable impulse to the commission of a crime, will be able to show its 'contemporaneous existence evinced by present circumstances, or the existence of an habitual tendency developed in particular cases, and becoming in itself a second nature,' and ought further to show that the mania 'was habitual, or that it had evinced itself in more than one instance.'

"Chief Justice Lewis has said that moral insanity 'bears a striking resemblance to *vice;*' and further, 'it ought never to be admitted as a defence until it is shown that these propensities exist in such violence as to subjugate the intellect, control the will, and render it impossible for the party to do otherwise than yield.' And again, 'this

is no authority for holding that *mere moral insanity*, as it is sometimes called, exonerates from responsibility. Chief Justice Shaw's charge in Abner

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state of mind is not to be presumed without evidence, nor does it usually occur without some premonitory symptoms indicating its approach.'

"Gentlemen of the jury, we say to you, as the result of our reflections on this branch of the subject, that if the prisoner was actuated by an irresistible inclination to kill, and was utterly unable to control his will, or subjugate his intellect, and was *not* actuated by anger, jealousy, revenge, and kindred evil passions, he is entitled to an acquittal, provided the jury believe that the state of mind now referred to has been proven to have existed, without doubt, and to their satisfaction."—*Am. Journ. of Insan.*, vol. xv. p. 303.

In Huntington's case, the defendant was tried in New York, in 1858, for forgery. Judge Capron charged the jury partly as follows:—

"The law, as at present administered, regards insanity, whether general or partial, as a derangement of the mind, the intellect, the reasoning and appreciating principle, the spring of motives and passions. To constitute a complete defence, insanity, if partial, must be such in degree as wholly to deprive the accused of the guide of reason in regard to the act with which he is charged, and of the knowledge that he is doing wrong in committing it. If, though somewhat deranged, he is yet able to distinguish right from wrong in the particular case in which crime is imputed to him, and to know that he is doing wrong, the act is criminal in law, and he is liable to punishment. But it is insisted for the prisoner that insanity, either general or partial, may exist, and the subject be totally unable to control his actions, while his intellect, or knowing and reasoning powers, suffer no notable lesion; it is claimed that persons thus afflicted may be capable of reasoning or supporting an argument on any subject within their sphere of knowledge. * * * * This affliction has received the name of Moral Insanity, because the natural feelings, affections, inclinations, temper, or moral dispositions, only are perverted, while the mind, the seat of volition and motive, remains unimpaired. I will not positively assert that this theory is not sound: it may be reconcilable with moral responsibility for human conduct; but I am not reluctant to confess my own mental inability to appreciate the harmony between the two propositions, if it exist."

Under this charge the prisoner was found guilty, and sentenced to the State prison.

So in Spear's case (Am. Journ. for Insan., p. 218), Judge Allen told the jury that there must be evidence, in order to acquit, of "a lesion of the intellect and reasoning powers, or of some derangement or disease affecting the mind and judgment." (Post, § 198.)

Daniel E. Sickles was tried in the U. S. Circuit Court for the District of Columbia, in 1859, for the murder of Philip B. Key. The defence was mania, produced by the defendant discovering an adulterous connection between his wife and the deceased. The following statement of the legal points adjudicated is taken from Elwell's Malpractice, p. 391:—

"Mr. Brady claimed that the immediate circumstances attending the seduction of Mr. Sickles' wife, and the death of Key, were of so atrocious a nature as to overwhelm the mind of Sickles instantaneously, and thus render him irresponsible for the crime of murder. He therefore drew up the following propositions, and requested the court to embody them in its charge to the jury:—

"'1. If, from the whole evidence, the jury believe that Mr. Sickles committed the act, but at the time of doing so was under the influence of a diseased mind, and was really unconscious that he was committing a crime, he is not in law guilty of murder.

"'2. If the jury believe that from any predisposing cause the prisoner's mind was impaired, and at the time of killing Mr. Key he became, or was mentally incapable of governing himself in reference to Mr. Key, as the debaucher of his wife, and at the time of committing said act was, by reason of such cause, unconscious that he was committing a crime as to said Mr. Key, he is not guilty of any offence whatever.

"'3. It is for the jury to say what was the state of the prisoner's mind as to the capacity to decide upon the criminality of the particular act in question—the homicide—at the moment it occurred, and what was the condition of the parties respectively as to being armed or not at the same moment. These are open questions for the jury, as are any other questions which may arise upon the consideration of the evidence, the whole of which is to be taken into view by the jury.

"'4. The law does not require that the insanity which absolves from crime should exist for any definite period, but only that it exists at the moment when the act occurred with which the accused stands charged.

"'5. If the jury have any doubt as to the case, either in reference to the homicide or the question of sanity, Mr. Sickles should be acquitted.'

Rodger's case, and Judge Birchard's charge in Clark's case, 12 Ohio, 424, are quite as favorable to the defence of insanity as the authorities warrant. I

"These propositions were argued at great length by counsel, especially by Mr. Brady, who contended that the great sorrow that had fallen upon Mr. Sickles, had, in fact, dethroned his intellect, and, for the moment, he was not accountable for what he did. CRAWFORD, J., charged as follows on these propositions :—

"'The court is asked to give to the jury certain instructions, whether on the part of the United States or on the defence. The first instruction asked for by the United States, embodies the law of this case on the particular branch of it to which it relates, and is granted with some explanatory remarks as to insanity, with a reference to which the prayer closes. A great English judge has said, on the trial of Oxford, who shot at the Queen of England, "That if the prisoner was laboring under some controlling disease which was, in truth, the acting power within him which he could not resist, then he will not be responsible." And again: "The question is, whether he was laboring under that species of insanity which satisfies you that he was quite unaware of the nature, character, and consequences of the act he was committing, or, in other words, whether he was under the influence of a diseased mind, and was really unconscious at the time he was committing the act that that was a crime. A man is not to be excused from responsibility if he has capacity and reason sufficient to enable him to distinguish between right and wrong as to the particular act he is doing; a knowledge and consciousness that the act he is doing is wrong and criminal, and will subject him to punishment. In order to be responsible, he must have sufficient power of memory to recollect the relation in which he stands to others, and in which others stand to him; that the act he is doing is contrary to the plain dictates of justice and right, injurious to others, and a violation of the dictates of duty. On the contrary, although he may be laboring under a partial insanity, if he still understands the nature and character of his act and its consequences, if he has a knowledge that it is wrong and criminal, and a mental power sufficient to apply that knowledge to his own case, and to know that if he does the act, he will do wrong and receive punishment, such partial insanity is not sufficient to exempt him from responsibility for criminal acts." Now we come to those asked on the part of the defence, the first of which is in these words:—

"'In reply to the ninth instruction, the court responds thus: "It is for the jury to say what was the state of Mr. Sickles' mind as to the capacity to decide upon the criminality of the homicide, receiving the law as given to them in relation to the degree of insanity, whether it will or will not excuse, they (the jury) finding the fact of the existence or non-existence of such degree of insanity."

"'The tenth prayer reads thus: "The law does not require that the insanity which absolves from crime should exist for any definite period, but only that it exist at the moment when the act occurred with which the accused stands charged." That instruction is granted. The time when the insanity is to operate is the moment when the crime charged upon the party was committed, if committed at all. The eleventh and last instruction asked reads this way: "If the jury have any doubt as to the case, either in reference to the homicide or question of insanity, Mr. Sickles should be acquitted."

"'This instruction, as I mentioned in referring to prayer four of the United States, will be answered in conjunction with it.

"'It does not appear to be questioned that if a doubt is entertained by the jury, the prisoner is to have the benefit of it. As to the sanity or insanity of the prisoner at the moment of committing the act charged, it is argued by the United States that every man being presumed to be sane, the presumption must be overcome by evidence satisfactory to the jury that he was insane when the deed was done.

"'This is not the first time this inquiry has engaged my attention. The point was made and decided at the June Term, 1858, in case of the United States *v.* Devlins, when the court gave the following opinion, which I read from my notes of the trial: "This prayer is based on the idea that the jury must be satisfied, beyond all reasonable doubt, of the insanity of the party for whom the defence is set up; precisely as the United States are bound to prove the guilt of a defendant to warrant a conviction. I am well aware, and it has appeared on this argument, that it has been held by a court of high rank and reputation that there must be a preponderance of evidence in favor of the defence of insanity to overcome the presumption of law that every killing is a murder; and that the same court has said that if there is an equilibrium, including, I suppose, the presumption mentioned of evidence, the presumption of the defendant's innocence makes the preponderance in his favor."

"'Whether a man is insane or not, is a matter of fact; what degree of insanity will relieve him from responsibility is a matter of law, the jury finding the fact of the

will not say that they are more so; for, rightly understood, they do not convey the idea that mere moral insanity constitutes a defence."(*tt*)

§ 56. In all cases where clear proof is not presented of the existence of such a malady—difficult though such proof be to secure—it is important to keep in mind the striking observations of Lord Brougham, when the question was in discussion in the House of Lords. "With respect to the point, of a person being an accountable being, that was, an accountable being to the law of the land, a great confusion had pervaded the minds of some persons whom he was indisposed to call reasoners, who considered accountability in its moral sense, as mixing itself up with the only kind of accountableness with which they, as human legislators, had to do, or of which they could take cognizance. He could conceive of the case of a human being of a weakly constituted mind, who might by long brooding over real or fancied wrongs, work up so perverted a feeling of hatred against an individual that danger might occur. He might not be deluded as to the actual existence of injuries he had received, but he might grievously and grossly exaggerate them, and they might so operate upon a weakly framed mind and intellect as to produce crime. He could conceive that the Maker of that man, in his infinite mercy, having regard to the object of his creation, might deem him not an object for punishment. But that man was accountable to human tribunals in a totally different sense. Man punished crime for the purpose of practically deterring others from offending, by committing a repetition of the like act. It was in that sense only that he had anything to do with the doctrine of accountable and not accountable. He could conceive a person whom the Deity might not deem accountable, but who might be perfectly accountable to human laws."(*u*)

§ 57. Chief Justice Hornblower, it is true, in a charge, which bears the impress of his single authority, not having been reviewed by the court in banc, took still more decided ground, involving an emphatic disclaimer of moral insanity *in toto*. At the same time he rejects in a manner quite unexampled for its summariness, all the old tests, and reduces the inquiry to a point which, after all, leaves the widest margin. "In my judgment, the true question to be put to the jury is, whether the prisoner was *insane* at the time of committing the act; and in answer to that question there is little danger

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degree too. Under the instruction of the court, murder can be committed only by a sane man. Everybody is presumed to be sane who is charged with a crime, but when evidence is adduced that a prisoner is insane, and conflicting testimony makes a question for the jury, they are to decide it like every other matter of fact, and if they should say or conclude that there is uncertainty, that they cannot determine whether the defendant was or is not so insane as to protect him, how can they render a verdict that a sane man perpetrated this crime, and that no other can?

"'Nor is this plain view of the question unsupported by authority. In the case of the Queen *v.* Ley, in 1840, Lewin's C. C., p. 239, on a preliminary trial to ascertain whether a defendant was sufficiently sane to go before a petit jury on an indictment, Hullock, B., said to the jury: "If there be a doubt as to the prisoner's sanity, and the surgeon says it is doubtful, you cannot say he is in a fit state to be put on trial. This opinion was approved in the People *v.* Freeman, vol. 4, Denio's Report, p. 9. This is a strong case, for the witness did not say the prisoner was insane, but only that it was doubtful whether it was so or not. The humane, and, I will add, just doctrine, that a reasonable doubt should avail a prisoner, belongs to a defence of insanity, as much, in my opinion, as to any other matter of fact.'"

(*tt*) Thurman, J., Farrar *v.* State, 2, Ohio St. R. 54; see Warden's Forensic View, p. 498.

(*u*) Hans. Par. Deb. LXVII. 728.

of a jury's giving a negative answer, and convicting a prisoner who is proved to be insane on the subject matter relating to or connected with the criminal act, or proved to be *so far* and *so generally* deranged as to render it difficult, or almost impossible, to discriminate between his sane and insane acts."(*v*) Had the most liberal doctrine of the psychologists been given instead of this, the jury could hardly have been allowed greater latitude.

§ 58. It is important not to confound the moral or impulsive insanity recognized by the courts with the *mania sine delirio* of Pinel. An analysis of the cases will show, it is submitted, that in all the instances where this species of insanity is admitted as a defence, there was mental unsoundness either proved or presumed. The strongest instance is where Judge Story once refused to allow the conviction of a young woman who in a fit of puerperal mania threw her infant overboard, though she was perfectly conscious of the enormity of the act.(*w*) But here there was *delirium* as well as homicidal impulse.

§ 59. The consideration of the psychological soundness of the doctrine of *mania sine delirio*, is reserved to a future section.(*x*) It will be there shown that among psychologists, as well as those who have had the most enlightened experience in the management of the insane, there is such a conflict of opinion as to the existence of this mania as to deprive the rendition of experts in this respect of any authoritative weight in courts of justice. On one point, however, all persons versed in the treatment of the insane agree, and this is a protest against the right and wrong test. But the difference in this respect between medical and legal authority is not so great as at first appears. If the courts should be supposed to hold that a perception that the act is wrong makes a lunatic responsible, then it is admitted that the conflict is irreconcilable. But if the language of the more recent decisions be closely scanned, it will be seen that the test applied may be resolved into this: is the party so free from delusion or perversion as to be able to take a sane view of the right and wrong of the particular act? He may know that it is what society calls wrong, and yet he may believe himself impelled to the act by sufficient counter considerations. In all this, on his own false premises, he may reason soundly. He may give every proof (*e. g.* by concealment or subterfuge) of what would be popularly called a knowledge of right and wrong. All this, however, will not in itself confer responsibility. He may nevertheless be insane.(*xx*)

(*v*) State *v.* Spencer, 1 Zabriskie, 196. (*w*) U. S. *v.* Hewson, 7 Bost. Law Rep. 361.

(*x*) *Post*, § 177, &c.

(*xx*) In New York, in Freeman's case, Beardsley, C. J., said, "That a state of general insanity, the mental powers being wholly perverted or obliterated, would necessarily preclude a trial; for a being in that deplorable condition can make no defence whatever. Not so, however, where the disease is partial, and confined to one subject, other than the imputed crime, and contemplated trial. A person in this condition may be fully competent to understand his situation in respect to the alleged offence, and to conduct his defence with discretion and reason. Of this the jury must judge, and they should be instructed, that if such is found to be his condition, it will be their duty to pronounce him sane. In the case at bar, the court professed to furnish a single criterion of sanity, that is, a capacity to distinguish between right and wrong. This, as a test of insanity, is by no means invariably correct; for, while a person has a very just perception of the moral qualities of most actions, he may, at the same time, as to some one in particular, be absolutely insane, and consequently as to *this* be incapable of judging accurately between right and wrong. If the delusion extends *to the alleged crime*, or the contemplated trial, the party manifestly is not in a fit con-

§ 60. To the illustrations adduced by others of the coexistence of a knowledge that an act was wrong with its commission under circumstances which confer entire irresponsibility, the present writer may be permitted to add one within the range of his own experience. A man named John Billman, who had been sent to the Eastern Penitentiary of Pennsylvania for horse stealing,

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dition to make his defence, however sound his mind may be in other respects; still the insanity of such a person being only partial, not general, a jury, under a charge like that given by the court below on this case, might find the prisoner sane, for in some respects he would be capable of distinguishing between right and wrong. Had the instruction been, that the prisoner was to be deemed sane, if he had a knowledge of right and wrong in *respect to the* crime with which he stood charged, there would have been but little fear that the jury could be misled, for a person who justly apprehends the nature of a charge made against him, can hardly be supposed to be incapable of defending himself in regard to it in a rational way. At the same time it would be well to impress distinctly on the minds of jurors, that they are to gauge the mental capacity of the prisoner, in order to determine whether he is so far sane as to be competent in mind to make his defence, if he has one; for, unless his faculties are equal to that task, he is not in a fit condition to be put on his trial. For the purpose of such a question, the law regards a person thus disabled by disease, as *non compos mentis*, and he should be pronounced unhesitatingly insane, within the true extent and meaning of this statute.

"Where insanity is interposed as a defence to an indictment for an alleged crime, the inquiry is always brought down to the single question of a capacity to distinguish between right and wrong at the time when the act was done. In such case, the jury should be instructed that, 'it must be clearly shown that at the time of committing the act, the party accused was laboring under such a defect of reason, from disease of the mind, as not to know the nature and quality of *the act* he was doing; or if he did know it, that he did not know he was doing what was wrong. The mode of putting the latter part of the question to the jury, on these occasions, has generally been whether the accused at the time of doing the act, knew the difference between right and wrong; which mode, though rarely, if ever, leading to any mistake with the jury, is not deemed so accurate, when put generally and in the abstract, as when put with reference to the party's knowledge of right and wrong in respect to *the very act* with which he is charged.' This is the rule laid down by all the English judges but one, in the late case of McNaghton, while pending in the House of Lords. (10 C. & F. 210.) In the case of Oxford, Lord Denman, C. J., charged the jury in this manner: 'The question is, whether the prisoner was laboring under that species of insanity which satisfies you that he was quite unaware of the nature or character and consequences of the act he was committing; or, in other words, whether he was under the influence of a diseased mind, and was really unconscious, at the time he was committing the act, that it was a crime.' The insanity must be such as to deprive the party charged with crime, of the use of reason in regard to *the act* done. He may be deranged on other subjects, but if capable of distinguishing between right and wrong in the particular act done by him, he is justly liable to be punished as a criminal. Such is the undoubted rule of the common law on this subject. Partial insanity is not, by that law, necessarily an excuse for crime, and can only be so where it deprives the party of his reason in regard to the act charged to be criminal. Nor, in my judgment, was the statute on this subject intended to abrogate or qualify the common law rule. The words of the statute are: 'No act done by a person in a state of insanity can be punished as an offence.' The clause is very comprehensive in its terms, and at first blush, might seem to exempt from punishment every act done by a person who is insane *upon any* subject whatever. This would, indeed, be a mighty change in the law, as it would afford absolute impunity to every person in an insane state, although his disease might be confined to a single and isolated subject. If this is the meaning of the statute, jurors are no longer to inquire whether the party was insane 'in respect to the very act with which he is charged,' but whether he was insane in regard to any act or subject whatever; and if they find such to have been his condition, render a verdict of not guilty. But the statute is not so understood by me. I interpret it as I should have done if the words had been 'no act done by a person in a state of insanity in respect to such act, can be punished as an offence.' The act, in my judgment, must be an insane act, and not merely the act of an insane person. This was plainly the rule before the statute was passed, and although that took place more than sixteen years since, I am not aware that it has, at any time, been held or intimated by any judicial tribunal, that the statute had abrogated, or in any respect modified, this principle of the common law." (Freeman *v.* People, 4 Denio, p. 27.)

murdered his keeper under circumstances of great brutality, and yet with so much ingenuity as to elude suspicions of his intentions, and almost conceal his flight. He hung a noose on the outside of the small window which is placed in the door of the cells to enable persons outside to look in. He then induced the keeper, in order to look at something on the floor directly at the foot of the door, to put his head entirely through. The noose was then drawn, and but for an accident, the man would have been suffocated. Notwithstanding this attempt, the same keeper was inveigled into the cell alone, a few days afterwards, on the pretence of Billman being sick, and was there killed by a blow on the head with a piece of washboard. Billman undressed him; changed clothes with him; placed him on the bed in such a position as to induce the general appearance of his being there himself; traversed in his assumed garb, the corridor with an unconcerned air; addressed an apparently careless question to the gate-keeper, and sauntered listlessly down the street on which the gate opened. He was, however, soon caught; but his insanity was so indisputable, that the prosecuting authorities, after having instituted a careful and skilful medical examination, became convinced of his irresponsibility, and united upon the trial in asking a verdict of acquittal on the ground of insanity. He was then remanded to confinement, under the Pennsylvania practice; and some time afterwards, when in a communicative mood, disclosed the fact of his having several years back murdered his father under circumstances which he detailed with great minuteness and zest. Inquiries were instituted, and it was found that he had told the truth. The father had been found strangled in his bed; the son had been arrested for the crime; but so artfully had he contrived the homicide, that he was acquitted through an alibi, got up by means of a rapid ride at midnight, and a feigned sleep in a chamber, into which he had clambered by a window. Here, then, was not only a sense of guilt, but a keen appreciation of the consequences of exposure, and an abundance of evidence of long harbored intention and intelligent design.

A still more emphatic illustration of the same sense of accountability among lunatics, as a class, is to be found in an anecdote related by Dr. Winslow.(*a*) When Martin set York Minster on fire, a conversation took place among the inmates of a neighboring lunatic asylum, having reference to this general topic. The question was whether Martin would be hanged, when, in the course of the discourse, one madman announced to the others a position, in which they all acquiesced, that Martin would not be hanged, because he was "one of themselves." It certainly will not be maintained that a consciousness of the legal relations of crime, such as this remark exhibited, confers responsibility where it does not otherwise exist.

§ 61. Perhaps the conflicting authorities which have been noticed above may be thus reconciled:—

Moral insanity is a defence to an indictment, when

1. It is connected with and depends on a cognate mental derangement, which may be either substantively proved, or implied from the intensity of the moral disorder.(*b*)

(*a*) Lectures, &c. 108.

(*b*) See *post*, § 178, &c.

2. It is accompanied by such an exaggerated and morbid view of the particular act as to make the party incapable of a healthy judgment of right and wrong in reference to that act. It is not necessary that the party should be ignorant that the particular act was wrong. He may know this, and yet his judgment may be so perverted by morbid counter-considerations as to prevent him from forming an accurate moral judgment on the premises.

3. It involves an impulse which for the time destroys free agency.

When, however, the alleged insanity consists in nothing more than a strong inclination to commit a wrong act, which the party understands to be wrong, and when there is no mental derangement by which the relations of this act are confused, then this is mere badness or malice, which, when connected with an overt act, makes the party criminally responsible.

IV. How intoxication affects responsibility for crime.

The law in this connection may be summed up as follows:—

1st. Insanity produced by *delirium tremens* affects responsibility in the same way as insanity produced by any other cause.

2d. Insanity immediately produced by intoxication does not destroy responsibility if the patient, when sane and responsible, makes himself intoxicated.

3d. While drunkenness *per se* is no defence to the *fact* of guilt, yet when the question of *intent* or *premeditation* is concerned, it becomes a material item of consideration.

1st. *Insanity produced by delirium tremens affects the responsibility in the same way as insanity produced by any other cause.*

§ 62. If a man who, laboring under *delirium tremens*, kill another, is made responsible, there is scarcely any species of insanity which, on like principles, would not be subjected to the severest penalties of criminal law. "It may be the immediate effect," says Dr. Ray,(*c*) "of an excess, or series of excesses, in those who are not habitually intemperate, as well as in those who are; but it most commonly occurs in habitual drinkers, after a few days' total abstinence from spirituous liquors. It is also very liable to occur in this latter class when laboring under other diseases, or severe external injuries, that give rise to any degree of constitutional disturbance. The approach of the disease is generally indicated by a slight tremor and faltering of the hands and lower extremities, a tremulousness of the voice, a certain restlessness and sense of anxiety which the patient knows not how to describe or account for, disturbed sleep, and impaired appetite. These symptoms having continued two or three days, at the end of which time they have obviously increased in severity, the patient ceases to sleep altogether, and soon becomes delirious. At first the delirium is not constant, the mind wandering during the night, but, during the day, when its attention is fixed, capable of rational discourse. It is not long,

(*c*) Med. Jur. 438.

however, before it becomes constant, and constitutes the most prominent feature of the disease. Occasionally the delirium occurs at an earlier period of the disease, and may even be the first symptom of any disorder. This state of watchfulness and delirium continues three or four days, when, if the patient recover, it is succeeded by sleep, which at first appears in uneasy and irregular naps, and lastly in long, sound, and refreshing slumbers. When sleep does not supervene about this period, the disease is fatal; and whether subjected to medical treatment or left to itself, neither its symptoms nor its duration are materially modified. The character of the delirium in this disease is peculiar, bearing a stronger resemblance than any other form of mental derangement to dreaming. It would seem as if the dreams which disturb and harass the mind during the imperfect sleep that precedes the explosion of the disease continue to occupy it when awake, being then viewed as realities, instead of dreams. The patient imagines himself, for instance, to be in some peculiar situation, or engaged in certain occupations, according to each individual's habits and profession; and his discourse and conduct are conformed to this delusion, with this striking peculiarity, however, that he is thwarted at every step, and is constantly meeting with obstacles that defy his utmost efforts to remove. Almost invariably the patient manifests, more or less, feelings of suspicion or fear, laboring under continual apprehension of being made the victim of sinister designs and practices. He imagines that certain people have conspired to rob or murder him, and insists that he can hear them in an adjoining apartment arranging their plans and preparing to rush into his room; or that he is in a strange place, where he is forcibly detained, and prevented from going to his own home. One of the most common hallucinations is to be constantly seeing devils, snakes, vermin, and all manner of unclean things around him and about him, and filling every nook and corner of his apartment. The extreme terror which these delusions often inspire produces in the countenance an unutterable expression of anguish, and, in the hope of escaping from his fancied tormentors, the wretched patient endeavors to cut his throat or jump from the window. Under the influence of these terrible apprehensions he sometimes murders his wife or attendant, whom his disordered imagination identifies with his enemies, though he is generally tractable, and not inclined to be mischievous. After perpetrating an act of this kind, he generally gives some illusive reason for his conduct, rejoices in his success, and expresses his regret at not having done it before."(*cc*)

§ 63. As far as concerns temporary incapacity, therefore, *delirium tremens* acts in the same way as any other *delirium*, and when complete, destroys the moral as well as the intellectual responsibility. The only question, therefore, is whether there is anything in the *source* from which it is derived which requires that it should be exempted from the general rule by which delirium forms a good defence to an indictment for a criminal offence. In the *dicta* of one or two of the older law writers, this exception is sought to be sustained on the ground that a drunkard, in every stage, is a voluntary demon, and that he can no more use his consequent mania as a defence, than can the man who

(*cc*) See an interesting case of *Oinomania* in 8 Amer. Journ. of Insan. 3.

kills another by a sword allege that it was the sword, and not himself, that was the guilty agent. But to this the answer is threefold: (1) that *delirium tremens* is not the *intended* result of drink in the same way that drunkenness is; (2) that there is no possibility that *delirium tremens* can be voluntarily generated in order to afford a cloak for a particular crime; (3) that, so far as original cause is concerned, it is not peculiar in being the offspring of indiscretion or guilt, for such is the case with almost every other species of insanity. These points scarcely need to be expanded. The fact is, *delirium tremens* runs the same course with most of the other classes of insanity known in the criminal courts. It is the result, like most other manias, of prior vicious indulgence; but it differs from intoxication in being shunned rather than courted by the patient, and in being incapable of voluntary assumption for the purpose of covering guilt.

§ 64. Reason, therefore, undoubtedly teaches us that a person who is incapacitated from moral and intellectual agency, by reason of *delirium tremens*, is irresponsible; and such is the law, as decided in repeated instances.(*d*) Thus, in the leading American case, Story, J., declared criminal responsibility not to attach where the delirium is the "remote consequence" of voluntary intoxication, "superinduced by the antecedent exhaustion of the party, arising from gross and habitual drunkenness. However criminal," he proceeded to say, "in a moral point of view, such an indulgence is, and however justly a party may be responsible for his acts arising from it, to Almighty God, human tribunals are generally restricted from punishing them, since they are not the acts of a reasonable being. Had the crime been committed when Drew (the defendant) was in a fit of intoxication, he would have been liable to be convicted of murder. As he was not then intoxicated, but merely insane from an abstinence from liquor, he cannot be pronounced guilty of the offence. The law looks to the immediate, and not to the remote cause; to the actual state of the party, and not to the causes which remotely produced it. Many species of insanity arise, remotely, from what, in a moral view, is a criminal neglect or fault of the party; as from religious melancholy, undue exposure, extravagant pride, ambition, &c. Yet such insanity has always been deemed a sufficient excuse for any crime done under its influence."

§ 65. In a still earlier case of at least equal authority, the court told the jury that if they "should be satisfied by the evidence, that the prisoner, at the time of committing the act charged in the indictment, was in such a state of mental insanity not produced by the immediate effects of intoxicating drinks, as not to have been conscious of the moral turpitude of the act, they should find him not guilty."(*e*) And expressly to this very point is a more recent case, where a federal judge of high authority told the jury that if the defendant was "so far insane as not to know the nature of the act, nor whether it was wrong or not, he is not punishable, although such *delirium tremens* is pro-

(*d*) U. S. *v.* Drew, 5 Mason, U. S. Rep. 28; Bennett *v.* State, Mart. & Yerg. 133; Cornwell *v.* State, ibid. 14; Maconnehey *v.* State, 5 Ohio (N. S.) 77, Carter *v.* State, 12 Texas, 500; R. *v.* Thomas, 8 C. & P. 820; R. *v.* Meakin, 7 C. & P. 299; Rennie's case, 1 Lew. C. C. 76; 1 Hale, 32; 1 Rus. on Cr. 7; 4 Black. Com. 26.

(*e*) U. S. *v.* Clarke, 2 Cranch, C. C. R. 158.

duced by the voluntary use of intoxicating liquors."(*f*) When *delirium tre-*

(*f*) U. S. *v.* McGlue, 1 Curtis, C. C. R. 1. This case we give in full:—

The prisoner, who was second officer on board the barque Lewis, was indicted for the murder of the first officer of that vessel while on board. The defence was insanity. The other facts appear in the charge of the court.

Curtis, J. The prisoner is indicted for the murder of Charles A. Johnson. It is incumbent on the government to prove the truth of every fact in the indictment necessary in point of law to constitute the offence. These facts are in part controverted, and in part, as I understand the course of the trial, not controverted; and it will be useful to separate the one from the other. That there was an unlawful killing of Mr. Johnson; that the mortal wound was inflicted by the prisoner at the bar; that this wound was given and the death took place on board of the barque Lewis; that Johnson was the first, and the prisoner the second officer of that vessel at the time of the occurrence; that the vessel at that time was either on the high seas, as is charged in one count, or upon waters within the dominion of the Sultan of Muscat, as is charged in another count; and that the prisoner was first brought into this district after the commission of the alleged offence—do not appear to be denied; and the evidence is certainly sufficient to warrant you in finding all these facts. It is not upon a denial of either of these facts that the defence is rested, but upon the allegation by the defendant, that at the time the act was done he was so far insane as to be criminally irresponsible for his act. And this brings you to consider the remaining allegation in the indictment which involves this defence. It is essential to the crime of murder that the killing should be from what the law denominates malice aforethought, and the government must prove this allegation.

Now, if you believe the evidence, there can be no question, that the killing was malicious, provided the prisoner was at the time in such a condition as to be capable, in law, of malice. If he was then so insane that the law holds him irresponsible, it deems him incapable of entertaining legal malice; and one main inquiry in this case is, whether the prisoner, when he struck the blow, was so far insane as to be held by the law irresponsible for intentionally killing Mr. Johnson.

Some observations have been made by the counsel of each side respecting the character of this defence. On the one side it is urged that the defence of insanity has become of alarming frequency, and that there is reason to believe that it is resorted to by great criminals to shield them from the just consequences of their crimes; that there exist in the community certain theories concerning what is called moral insanity, brought forward on trials of this kind, tending to subvert the criminal law, and render crimes likely not to be punished. On the other hand, the inhumanity and injustice of holding him guilty of murder who was not at the time of the act a reasonable being, have been brought before you in the most striking forms.

These observations of the counsel on both sides are worthy of your attention, and their effect should be to cause you to follow steadily, carefully, and exactly, the rules of law upon this subject. The general question, whether the prisoner's state of mind when he struck the blow was such as to exempt him from legal responsibility, is a question of fact for your decision. But there are certain rules of law which you are bound to apply, and the court, upon its responsibility, is to lay down; and these rules, when applied, will conduct you to the only safe decision.

You will observe, then, that this defence of insanity is to be tested and governed by principles of law, and not by any loose general notions which may be afloat in the community, or even the speculations of men of science; and I now proceed to state to you such of them as are applicable to this case.

The first is, that the defendant must be presumed to be sane till his insanity is proved. Men, in general, are sufficiently sane to be responsible for their acts. To be irresponsible because of insanity is an exception to that general rule. And before any man can claim the benefit of such an exception, he must prove that he is within it.

You will, therefore, take it to be the law, that the prisoner is not to be acquitted upon the ground of insanity, unless upon the whole evidence you are satisfied that he was insane when he struck the blow.

The next inquiry is, What is meant by insanity? What is it which exempts from punishment, because its existence is inconsistent with a criminal intent? Clearly, it is not every kind and degree of insanity which is sufficient. There are, undoubtedly, persons of great general ability, filling important stations in life, who, upon some one subject, are insane. And there are others whose minds are such that the conclusions of their reason and the results of their judgment are very far from right. And others whose passions are so strong, or whose conscience, reason, and judgment are so weak, so perverted, that they may, in some sense, be denominated insane. But it is not the business of the law to inquire into these peculiarities, but solely whether the person accused was capable of having, and did have a criminal intent. If he had, it punishes

mens is set up as a defence, the prisoner must show that he was under a delirium

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him ; if not, it holds him dispunishable. And it supplies a test, by which the jury is to ascertain whether the accused be so far insane as to be irresponsible. That test is the capacity to distinguish between right and wrong as to the particular act with which he is charged. If he understands the nature of the act, if he knows that it is criminal, and that if he does it he deserves punishment, then he is not so far insane as to be exempt from responsibility. But if he is under such delusion as not to understand the nature of the act, and has not reason and judgment to know that he is deserving of punishment, then he is not responsible. This is the test which the law prescribes, and which you are to apply in the present case.

It is asserted by the prisoner that when he struck the blow he was suffering under a disease known as *delirium tremens*. He has introduced evidence tending to prove his intemperate drinking of ardent spirits during several days before the time in question, and also certain effects of this intemperance. Physicians of great eminence, and particularly experienced in the observation of this disease, have been examined on both sides. They were not allowed to give their opinions upon the case ; because the case, in point of fact, on which any one might give his opinion, might not be the case which you, upon the evidence, would find ; and there would be no certain means of knowing whether it was so or not. It is not the province of an expert to draw inferences of fact from evidence, but simply to declare his opinion upon a known or hypothetical state of facts ; and therefore the counsel on each side have put to the physicians such states of facts as they deem warranted by the evidence, and have taken their opinions thereon. If you consider that any of these states of fact put to the physicians are proved, then the opinions thereon are admissible evidence, otherwise they are not applicable to this case. And here I may remark, that although in general witnesses are held to state only facts, and are not allowed to give their opinions in a court of law, yet this rule does not exclude the opinions of those whose professions and studies, or occupations, have rendered them peculiarly skilful concerning particular questions. We take the opinion of physicians in this case for the same reason that we resort to them in our own cases out of court, because they are believed to be better able to form a correct opinion upon a subject within the scope of their studies than men in general. But these opinions, though proper for your consideration, are, nevertheless, not binding on you against your own judgment, but should be weighed, and especially where they differ, compared by you, and such effect allowed to them as you think right. Besides these opinions, the physicians have also described to you the symptoms of the disease *delirium tremens*. They all agree that it is a disease of a very strongly marked character, and as little liable to be mistaken as any known in medicine. Dr. Bell says the symptoms are—

"1. Delirium, taking the form of apprehensiveness on the part of the patient. He is fearful of something ; imagines demons and snakes around him. In attempting to escape, he will attack others as well as injure himself. But he is more apprehensive of receiving injury than desirous of inflicting it, except to escape. He is generally timid and irresolute, and easily pacified and controlled.

"2. Sleeplessness. I believe *delirium tremens* cannot exist without this.

"3. Tremulousness, especially of the hands, but showing itself in the limbs and the tongue.

"4. After a time sleep occurs, and reason thus returns ; usually the sleep comes on in not less than three days, dating from the last sleep. At first it is broken ; then this is followed by a profound sleep, lasting six or eight hours, from which the patient awakes sane."

Dr. Stedman, after describing its symptoms substantially as Dr. Bell did, says its access may be very sudden, and he has often known it first to manifest itself by the patients attacking those about them, regarding them as enemies; that a case may terminate in two days, and rarely lasts more than four days.

Regarding these accounts of the symptoms of this disease, you will inquire whether the evidence proves that they existed in this case ; and whether the previous habits and the intemperate use of ardent spirits, from which this disease springs, are shown ; and whether the recovery of the prisoner corresponded with the course and termination of the disease of *delirium tremens* as described by the physicians.

It is not denied, on the part of the government, that the prisoner had drank intemperately of ardent spirits during some days before the occurrence. But it is insisted, that he had continued to drink, down to a short time before the homicide ; and that when he struck the blow it was in a fit of drunken madness. And this renders it necessary to instruct you concerning the law upon the state of facts which the prosecutor asserts existed.

Although *delirium tremens* is the result of intemperance, and therefore in some sense

at the time the act was perpetrated, there being no presumption of its existence from the antecedent fits from which he has recovered.(*ff*)

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is voluntarily brought on, yet it is distinguishable, and by the law is distinguished, from that madness which sometimes accompanies drunkenness.

If a person suffering under *delirium tremens* is so far insane as to render him irresponsible, the law does not punish him for any crime he may commit.

But if a person commits a crime while intoxicated, under the immediate influence of liquor, the law does punish him, however mad he may have been. It is no excuse, but rather an aggravation of his offence, that he first deprived himself of reason before he did the act. There would be no security for life or property if men could commit crimes with impunity, provided they would first make themselves drunk enough to cease to be reasonable beings. And, therefore, it is a very important inquiry in this case whether this homicide was committed while the prisoner was suffering under that marked disease of *delirium tremens*, or in a fit of drunken madness. If the prisoner while sane made himself intoxicated, and while intoxicated committed a murder by reason of insanity, which was one of the consequences of that intoxication, then he is responsible in point of law, and must be punished. This is as clearly the law of the land as the other rule, which exempts from punishment acts done under *delirium tremens*. It may sometimes be difficult to determine under which rule the accused comes. But it is the duty of the jury to ascertain from the evidence on which side this case falls, and to decide accordingly.

It may be material for you to know on which party is the burden of proof in this part of the case. It is incumbent on the prisoner to satisfy you that he was insane when he struck the blow, for the law presumes every man to be sane till the contrary is proved. But if the contrary has been proved, the law does not presume that the insanity of the prisoner arose from any particular cause; and it is incumbent on the party which asserts that it did arise from a particular cause, and that the prisoner is guilty by law, because it arose from that cause, to make out this necessary element in the charge to the same extent as every other element in it. For the charge then assumes this form—that the prisoner committed a murder, for which, though insane, he is responsible, because his insanity was produced by and accompanied a state of intoxication. The government must satisfy you of these facts, which are necessary to the guilt of the prisoner in point of law. If you are convinced that the prisoner was insane to such an extent as to render him irresponsible, you will acquit him, unless you are also convinced that his insanity was produced by intoxication, and accompanied that state; in which case you will find him guilty.

The prisoner was acquitted.

A note in the *American Journal of Insanity*, for July, 1856, says—

"This distinction between *delirium tremens* and temporary madness, induced by intoxication, is laid down in The United States *v.* Drew, 5 Mason, 28; and (in England) in John Burroughs' case, 1 Lewin, C. C. 75. In the latter case, Holroyd, J., said: 'Drunkenness is not insanity, nor does it answer to what is termed an unsound mind, *unless the derangement which it causes becomes fixed and continued by the drunkenness being habitual, and thereby rendering the party incapable of distinguishing between right and wrong.*' That mere drunkenness is no excuse for crime is very clearly settled by many decisions both in this country and in England. Cornwell *v.* The State, Mart. & Y., 147, 149; Burnet *v.* The State, 133, ib.; The State *v.* Turner, 1 Wright's Ohio, 30; The State *v.* Thompson, ib. 617; Schaller *v.* The State, 14 Missouri, 502; The State *v.* John, 8 Ired. 330; Pirtle *v.* The State, 9 Humph. 663; Kelly *v.* The State, 3 Smedes and M. 518; The United States *v.* Clarke, 2 Cranch, C. C. R. 158. But though drunkenness is not of *itself* a complete defence to crime, as insanity is, yet it may be admissible to the jury as evidence of the *intent*, in certain cases, with which the act was done. Thus in Pigman *v.* The State, 14 Ohio, 555, it was held, on an indictment for passing counterfeit money, knowing it to be counterfeit, that the drunkenness of the prisoner at the time of passing was proper for the consideration of the jury in determining whether he *knew* the bill to be counterfeit. See also, The State *v.* McCante, 1 Spears, 389; Pennsylvania *v.* Fall, Addison, 257; Swan *v.* The State, 4 Humph. 136; Pirtle *v.* The State, 9 ib. 570; Haile *v.* The State, 11 ib. 154.—*Law Magazine.*"

(*ff*) State *v.* Sewell, 3 Jones, Law (N. C.) 245. As to general presumption arising from prior insanity, see *ante*, § 33.

2d. *Insanity immediately produced by intoxication does not destroy responsibility, where the patient when sane and responsible, made himself voluntarily intoxicated.*

§ 66. Drunkenness, so long as it does not prostrate the faculties, cannot be distinguished from any other kind of passion. If the man who is maddened by an unprovoked attack upon his person, his reputation or his honor, be nevertheless criminally responsible—if hot blood form no defence to the fact of guilt—it would be a most extraordinary anomaly if drunkenness voluntarily assumed should have that effect, independently of all extraneous provocation whatever. If, as is pretended—or else there is no ground for the exception—drunkenness so incapacitates the reason as to make it at least partially incapable of distinguishing between right and wrong, or else so inflames the passions as to make restraint insupportable, then comes in the familiar principle that the man who voluntarily assumes an attitude or does an act which is likely to produce death in others, is responsible for the consequences, even though he had at the time no specific intentions to take the life of any one. Thus, if a man breaking an unruly horse wilfully ride him among a crowd of persons, the probable danger being great and apparent, or if a workman out of sport or mischief, slide a plank from the top of a roof into a crowded street, or if a manufacturer deliberately and knowingly leave in the cellar of an uninhabited house a keg of powder, and death ensue, it is murder at common law.(*g*) And so it must also be held that the steamboat captain who deliberately dashes his boat into a crowd of smaller craft, so that life is taken, is in like manner responsible. There can be no question as to this. The man who voluntarily arms himself with weapons of destruction, and then throws them hap-hazard among the innocent or unoffending, without even the excuse of specific malice or provocation, is at least as dangerous as the assassin who picks out his victim in advance. Against the last there may be some checks—against the first none. Caution may ward off the one, or innocence escape it, but to the other the most innocent and benevolent would be as likely to fall victim as the most malevolent. The mind in the last case may be inflamed with revenge—that "Wild Justice," as Bacon calls it—which, though no defence, is yet capable of being reached by reason and averted by care. But in the former, the motive is mere gross and sensual indulgence, and the blow cannot be restrained by strength, or avoided by unoffensiveness.

§ 67. The safety of the community, in fact, requires that this rule should be observed. Every murderer would drink to shelter his intended guilt. There never could be a conviction for homicide if drunkenness avoid responsibility.(*gg*) As it is, most of the premeditated homicides are committed under the stimulus of liquor. The guilty purpose is at first sedately conceived, but there are few men whose temperaments are so firmly knit as to enable them to enter a scene of blood, without first fortifying themselves for the task to be

(*g*) See Wharton on Homicide, 45, where these points are fully established.
(*gg*) See *post*, § 92.

performed. The head dreads the heart's cowardice, and seeks to insure against it by drink. It will be found in fact that there is scarcely a case of violent homicide, in which it does not appear that the defendant thus strengthened his nerves for the execution of his guilty plan. If, therefore, drunkenness imparts irresponsibility, there are not only but few convictions which have heretofore taken place which are good, but there will be no convictions at all for the future. If the assassin will not take liquor to strengthen his nerves, he will to avoid conviction. There would be no species of *deliberate* homicide, under such a dispensation, that would not avoid punishment. It would be the indeliberate only that would be made responsible.

§ 68. The tenor of common and civil law authority to this effect is clear. Even the German text writers, who generally attenuate to so wide and thin a texture the doctrine of moral responsibility, do not undertake to treat drunkenness as a defence. Sir E. Coke scarcely goes beyond the tenor of civil as well as of common law writers, when he says, "As for a drunkard who is *voluntarius dæmon*, he hath, as has been said, no privilege thereby, but what hurt or ill soever he doth, his drunkenness doth aggravate it. *Omne crimen ebrietas et incendit et detegit.*"(*h*) And although now drunkenness cannot be said to aggravate a crime in a judicial sense, yet it is well settled that it forms no defence to the fact of guilt. Thus Judge Story, in a case already cited, after noticing that insanity, as a general rule, produces irresponsibility, went on to say: "An exception is, when the crime is committed by a party while in a fit of intoxication, the law allowing not a man to avail himself of the excuse of his own gross vice and misconduct, to shelter himself from the legal consequences of such crime." Lord Hale says: "The third sort of madness is that which is *dementia affectata*, namely drunkenness. This vice doth deprive a man of his reason, and puts many men into a perfect but temporary phrensy; but by the laws of England, such a person shall have no privileges by his voluntarily contracted madness, but shall have the same judgment as if he were in his right senses."(*i*) And so Parke, B., a very authoritative English crown judge, said to a jury in 1837: "I must also tell you, that if a man makes himself voluntarily drunk, it is no excuse for any crime he may commit whilst he is so; he takes the consequences of his own voluntary act, or most crimes would go unpunished."(*j*) And Alderson, B., said in 1836: "If a man chooses to get drunk, it is his own voluntary act; it is very different from madness which is not caused by any act of the person. That voluntary species of madness which it is in a party's power to abstain from, he must answer for."(*k*) In harmony with this is the whole current of English authority.(*l*)

§ 69. The law in this country is that drunkenness is no defence to the *factum* of guilt; the only point about which there has been any fluctuation, being

(*h*) Co. Litt. 247, *a*.

(*i*) 1 Hale, 7; 4 Black. Com. 26; Wharton's C. L. (3d edition) 92; 1 Gabbett, C. L. 9; and see a very learned article in 6 Law Rep. (N. S.) 554.

(*j*) R. *v.* Thomas, 7 C. & P. 817.

(*k*) R. *v.* Meakin, 7 C. & P. 297.

(*l*) Burrow's Case, 1 Lewin C. C. 75; Rennie's case, 1 Lewin C. C. 76; 1 Russel on Cr. 8.

the extent to which evidence of drunkenness is receivable to determine the exactness of the intent or the extent of deliberation.(*m*)

(*m*) U. S. *v.* Clarke, 2 Cranch C. C. R. 158; U. S. *v.* M'Glue, 1 Curtis C. C. R. 1; Kelley *v.* State, 3 Smedes & Mar. 518; Cornwall *v.* State, Mar. & Yer. 147; Pirtle *v.* State, 9 Humph. 663; State *v.* John, 8 Ired. 330; State *v.* Turner, 1 Wright, 30; Schaller *v.* State, 14 Missouri, 502; Wh. Cr. Law, § 40; Wh. on Homicide, 369. In Rogers' case, which came up in 1858, before the New York Court of Appeals, the law was thus stated by Denio, J.: "Where a principle of law is found to be well established by a series of authentic precedents, and especially where, as in this case, there is no conflict of authority, it is unnecessary for the judges to vindicate its wisdom or policy. It will moreover occur to every mind that the principle mentioned is absolutely essential to the protection of life and property. In the forum of conscience there is no doubt considerable difference between murder deliberately planned and executed by a person of unclouded intellect, and the reckless taking of life by one infuriated by intoxication: but human laws are based upon considerations of policy, and look rather to the maintenance of personal security and social order, than to accurate discrimination as to the moral qualities of individual conduct. But there is in truth no injustice in holding a person responsible for his acts committed in a state of voluntary intoxication. It is a duty which every one owes to his fellow men, to say nothing of more solemn obligations, to preserve, so far as it is in his own power, the inestimable gift of reason. If it be perverted or destroyed by fixed disease, though brought on by his own vices, the law holds him not accountable. But if by a voluntary act he temporarily casts off the restraints of reason and conscience, no wrong is done him if he is considered answerable for any injury which in that state he may do to others, or to society.

"Before proceeding to examine the judge's charge, it is necessary to state one other principle connected with the subject of intoxication. I am of opinion that in cases of homicide, the fact that the accused was under the influence of intoxication may be given in evidence in his behalf. The effect which the evidence ought to have upon the verdict will depend upon the other circumstances of the case. Thus, in Rex *v.* Carroll, which was a case of murder by stabbing, there was not, as the court considered, any provocation on the part of the deceased, and it was held that the circumstance that the prisoner was intoxicated, was not at all material to be considered. Rex *v.* Meakin, was an indictment for stabbing with a fork with intent to murder; and it was shown that the prisoner was the worse for liquor. Alderson, Baron, instructed the jury that, with regard to the intention, drunkenness might be adverted to according to the nature of the instrument used. 'If,' he said, 'he uses a stick, you could not infer a malicious intent so strongly against him if drunk, if he made an intemperate use of it, as you would if he had used a different kind of weapon; but where a dangerous instrument is used, which, if used, must produce a grievous bodily harm, drunkenness can have no effect upon the consideration of the malicious intent of the party.' In Rex *v.* Thomas, for malicious stabbing, the person stabbed had struck the prisoner twice with his fist, when the latter, being drunk, stabbed him, and the jury were charged that drunkenness might be taken into consideration in cases where what the law deems sufficient provocation has been given, because the question in such cases is, whether the fatal act is to be attributed to the passion of anger excited by the previous provocation; and that passion, it was said, is more easily excitable in a person when in a state of intoxication than when he is sober; so, it was added, where the question is, whether words have been uttered with a deliberate purpose, or are merely low and idle expressions, the drunkenness of the person uttering them is proper to be considered. But if there is really a previous determination to resent a slight affront in a barbarous manner, the state of drunkenness in which the prisoner was, ought not to be regarded, for it would furnish no excuse.

"It most generally happens in homicides committed by drunken men, that the condition of the prisoner would explain or give character to some of his language, or some part of his conduct, and, therefore, I am of opinion that it would never be correct to exclude the proof altogether. That it would sometimes be right to advise the jury that it ought to have no influence upon the case, is, I think, clear from the foregoing authorities. In a case of lengthened premeditation, of lying in wait, or where the death was by poisoning, or in the case of wanton killing without any provocation, such an instruction would plainly be proper.

"Assuming the foregoing positions to be established, I proceed to examine the exception to the charge of the judge. It is difficult to know precisely what was meant by the request to charge; but I think its sense may be expressed thus: that drunkenness might exist to such a degree, that neither an intention to commit murder, nor a

3d. *While Intoxication* per se *is no defence to the fact of guilt, yet when the question of intent or premeditation is concerned, it may be proved for the purpose of determining the precise degree.*

§ 70. This position should be very jealously guarded, since, as has already been remarked, there are few cases of premeditated violent homicide, in which the defendant does not previously nerve himself for the encounter by liquor, and there would in future be none at all, if the fact of being in liquor at the time is enough to disprove the existence of premeditation. The true view, therefore, would seem to be, not that the fact of liquor having been taken is of any value at all on the question of intent or premeditation, but that when there is no evidence of premeditation *aliunde*, and where the defendant is proved at the time of the occurrence to be in a state of mental confusion of which drink was the cause, the fact of such mental confusion may be received to show either that there was no specific intent to take life, or that there was no positive premeditation. In the cases arising out of the statutes resolving murder into two degrees, in which the distinguishing test is a specific intent to take life, this position receives several pregnant illustrations. Thus, in the Philadelphia riot cases of 1844, where it was shown that bodies of men were inflamed by sectarian and local prejudices, and blinded by a wild apprehension of danger to such an extent as to make them incapable of discrimination, or of precise or specific purpose, it was held that they could not be considered as guilty of that species of "wilful and deliberate" murder which constitutes murder in the first degree.(*n*) Precisely analogous to this is the case of the drunkard,

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motive for such an act, could be imputed to the prisoner. It was therefore asked that it should be left to the jury to determine whether such a degree of intoxication had been shown; and that they should be instructed that if it had, the prisoner should be found guilty of manslaughter only. We must lay out of view as inapplicable, the case of a person who had become insensible from intoxication, and who was performing an act unaccompanied by volition. There was nothing in the evidence to show that the prisoner's conduct was not entirely under the control of his will, or which would render it possible for the jury to find that he did not intend to stab the deceased with his knife. The mind and will were no doubt more or less perverted by intoxication, but there was no evidence tending to show that they were annihilated or suspended. Assuming, therefore, that the request did not refer to such a hypothesis, the only other possible meaning is that it supposes the jury legally might find that the prisoner was so much intoxicated that he could not be guilty of murder for the want of the requisite intention and motive, and the request was that they might be so instructed. This would be precisely the same thing as advising them that they might acquit of murder on account of the prisoner's intoxication, if they thought it sufficient in degree. It has been shown that this would be opposed to a well-established principle of law. The judge was not at liberty so to charge, and the exception to his refusal cannot be sustained. What he did charge on the subject of intoxication, was more favorable to the prisoner than he had a right to claim. It implies that if he was so far intoxicated as to be deprived of his reasoning faculties, it was an excuse for the crime of murder, or, as perhaps it was intended to state, that he could not be guilty of murder. The rule which I have endeavored to explain assumes that one may be convicted of murder, or of other crime, though his mind be reduced by drunkenness to a condition which would have called for an acquittal if the obliquity of mind had arisen from any other cause. The judge ought to have charged, that if a man makes himself voluntarily drunk, that is no excuse for any crime he may commit while he is so, and that he must take the consequence of his own voluntary act. (Rex *v.* Thomas, *supra.*) The charge, therefore, gave the prisoner the chance of an acquittal to which he was not entitled: but this was not an error of which he could take advantage."

(*n*) Wharton on Homicide, 371, 2.

who in a fight slays an antagonist without any prior sober premeditation. In his intoxication he is incapable of such mental action as the term "premeditates" describes. His mental condition may be such as to deprive him of the capacity to form a "specific intent" to take life, or to do anything else. And yet at the same time, at common law, the offence would, strictly speaking, fall under the head of murder, for it would possess the incident of malice, and would be independent of that of provocation. Under such circumstances the offence properly is to be ranked as murder in the second degree, and such has repeatedly been decided by the courts.(*o*)

(*o*) Com. *v.* Jones, 1 Leigh, 612; Com. *v.* Haggerty, Lewis' C. L. 403; Pirtle *v.* State, 9 Hump. 434; Swan *v.* State, 4 Hump. 131; Penns. *v.* Fall, Addison, 257; People *v.* Hammill, 2 Parker, C. C. (N. Y.), 223; People *v.* Robinson, Ibid. 235; State *v.* Harlowe, 2 Mis. (6 Bennett), 446. In a case in Tennessee, the court thus speak: "Upon the trial, there was evidence that the prisoner was intoxicated at the time he committed the homicide. Upon the subject of the defendant's intoxication told the jury that 'voluntary intoxication is no excuse for the commission of crime; on the contrary it is considered by our law as rather an aggravation; yet if the defendant was so deeply intoxicated by spirituous liquors at the time of the killing, as to be incapable of forming in his mind a design deliberately and premeditately to do the act, the killing under such a state of intoxication, would only be murder in the second degree.' It is insisted that his honor did not state the principle upon this subject, as it has been ruled by this court. In the case of Swan *v.* the State, Judge Reese, who delivered the opinion of the court, says: 'But although drunkenness in point of law constitutes no excuse or justification for crime, still, when the nature and essence of a crime is made to depend by law, upon the peculiar state and condition of the criminal's mind at the time, and with reference to the act done, drunkenness, as a matter of fact, affecting such state and condition of the mind, is a proper subject for consideration and inquiry by the jury. The question in such case is, what is the mental status? Is it one of self-possession, favorable to a fixed purpose, by deliberation and premeditation, or did the act spring from existing passion, excited by inadequate provocation, acting, it may be, on a peculiar temperament, or upon one already excited by ardent spirits? In such a case it matters not that the provocation was inadequate, or the spirits voluntarily drank; the question is, did the act proceed from sudden passion, or from deliberation or premeditation? What was the mental status at the time of the act, and with reference to the act? To regard the fact of intoxication as meriting consideration in such a case, it is not to hold that drunkenness will excuse crime, but to inquire whether the very crime which the law refines and punishes, has been in point of fact committed. In these remarks the court intend to be understood as distinctly indicating, that a degree of drunkenness by which the party was greatly excited, and which produced a state of mind unfavorable to deliberation and premeditation, although not so excessive as to render the party absolutely incapable of forming a deliberate purpose, might be taken into consideration by a jury, in determining whether the killing was done with premeditation and deliberation.' The whole subject was ably reviewed by Judge Turley, in the case of Pirtle *v.* the State. In delivering the opinion of the court, in that case, the judge says, at page 671: 'It will frequently happen necessarily, when the killing is of such a character as the common law designates as murder, and it has not been perpetrated by means of poison, or by lying in wait, that it will be a vexed question, whether the killing has been the result of sudden passion produced by a cause inadequate to mitigate it to manslaughter, but still sufficient to mitigate it to murder in the second degree, if it be really the true cause of the excitement, or whether it has been the result of premeditation and deliberation; and in all such cases, whatever view is able to cast light upon the mental status of the offenders is legitimate proof: and among others, the fact that he was at the time drunk; not that this will excuse and mitigate the offence, if it were done wilfully, deliberately, maliciously, and premeditately (which it might well be, though the perpetrator was drunk at the time); but to show that the killing did not spring from a premeditated purpose, but sudden passion, excited by inadequate provocation, such as might reasonably be expected to arouse sudden passion and heat, to the point of taking life, without premeditation and deliberation.' Here the court explicitly lays down the rule to be, that in all cases where the question is between murder in the first and murder in the second degree, the fact of drunkenness may be proved, to shed light upon the mental status of the offender, and thereby to enable the jury to determine whether the killing sprung from a premeditated purpose, or from passion excited by

§ 71. The same general view is taken as to the question of *intent*. Thus in an Ohio case, it was very properly held, that when the charge was knowingly passing counterfeit money, with intent to cheat, the drunkenness of the defendant at the time of the offence was a fit subject for the consideration of the jury, there being no ground to suppose that the defendant knew the money to be counterfeited *before* he was drunk.(*p*) And when the defendant was indicted for an attempt to commit suicide by drowning, and it was alleged that she was at the time unconscious of the nature of her act from drunkenness, Jervis, C. J., said to the jury: "If the prisoner was so drunk as not to know what she was about, how can you find that she *intended* to destroy herself?"(*q*) So again, when the charge was assault with intent to murder, Patterson, J., said: "A person may be so drunk as to be utterly unable to

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inadequate provocation. And the degree of drunkenness which may then shed light upon the mental state of the offender, is not alone that excessive state of intoxication, which deprives a party of the capacity to frame in his mind a design deliberately and premeditately to do an act; for the court says that in the state of drunkenness referred to, a party well may be guilty of killing wilfully, deliberately, maliciously, and premeditately; and if he so kill, he is guilty as though he were sober. The principle laid down by the court is, that when the question is, can drunkenness be taken into consideration, determining whether the party be guilty of murder in the second degree, the answer must be, that it cannot; but when the question is, what were the actual mental state of the perpetrator, at the time the act was done, was it one of deliberation and preparation, then it is competent to show any degree of intoxication that may exist, in order that the jury may judge, in view of such intoxication, in connection with all the other facts and circumstances, whether the act was premeditately and deliberately done. The law often implies malice from the manner in which the killing was done, or the weapon with which the blow was stricken. In such case it is murder, though the perpetrator were drunk. And no degree of drunkenness will excuse in such case, unless by means of drunkenness an habitual or fixed madness be caused. The law in such cases does not seek to ascertain the actual state of the perpetrator's mind, for the fact from which is implied having been proved, the law presumes its existence, and proof in opposition to this presumption, is irrelevant and inadmissible. Hence a party cannot show he was so drunk as not to be capable of entertaining a malicious feeling. The conclusion of law is against him. But when the question is, whether a party is guilty of murder in the first degree, it becomes indispensable that the jury should form an opinion as to the actual state of mind with which this act was done. All murder in the first degree (except that committed by poison, and by lying in wait), must be perpetrated wilfully, deliberately, maliciously, and premeditately. The jury must ascertain as a matter of fact, that the accused was in this state of mind when the act was done. Now according to the cases of Swan *v.* The State, and Pirtle *v.* The State, any fact that will shed light upon this subject, may be looked to by them, and may constitute legitimate proof for their consideration. And among other facts, any state of drunkenness being proved, it is a legitimate subject of inquiry, as to what influence such intoxication might have had upon the mind of the offender, in the perpetration of the deed. We know that an intoxicated man will often, upon a slight provocation, have his passions excited and rashly perpetrate a criminal act. Now, it is unphilosophical for us to assume that such a man would, in the given case, be chargeable with the same degree of premeditation and deliberation that we would ascribe to a sober man, perpetrating the same act upon a like provocation. It is in this view of the question, that this court held, in Swan's case, and in Pirtle's case, that the drunkenness of a party might be looked to by the jury, with the other facts in the case, to enable them to decide whether the killing were done deliberately and premeditately. But his honor, the Circuit Judge, told the jury, that drunkenness was an aggravation of the offence, unless the defendant was so deeply intoxicated as to be incapable of forming in his mind a design deliberately and premeditately to do the act. In this charge there is error, for which the judgment must be reversed. Reverse the judgment, and remand the cause for another trial." Hale *v.* State, 11 Humph. 154.

(*p*) Pigman *v.* State, 14 Ohio, 555; affirmed, but limited, in Nichols *v.* State, 8 Ohio S. R. (N. S.) See also U. S. *v.* Roudenbush, 1 Bald. 514.

(*q*) R. *v.* Moore, reported 6 Law Rep. (N. S.), 581.

form any intention at all, and yet he may be guilty of very great violence. If you are not satisfied that the prisoners, or either of them, had formed a positive intention of murdering the child, you may find them guilty of an assault."(*r*)

Beyond this the advance has been fluctuating. The furthest step taken was in an English case, decided in 1819,(*s*) where Holroyd, J., is reported by Sir W. Russell, who adopts his opinion as text law, to have said, that the fact of drunkenness might be taken into consideration to determine the question whether an act was premeditated or done only with sudden heat and impulse. This would make drunkenness an item in every question of provocation or hot blood, and would of course open the way to the same difficulties as to general policy, which we have already pointed out in another connection. In 1835, however, this case was expressly repudiated by Parks, J., who said, in referring to Holroyd, J.'s language, as just given, "Highly as I respect that late excellent judge, I differ from him, and my brother Littledale agrees with me. He once acted upon that case, but afterwards retracted his opinion. There is no doubt that that case is not law. I think there would be no safety in human life, if it were to be considered as law.(*t*) But the very next year, Alderson, B., in a case of stabbing, retraced at least a part of the retreat which had been thus so emphatically sounded. "It is my duty to tell you," he said, "that the prisoner being intoxicated, does not alter the nature of the offence. If a man chooses to get drunk, it is his own voluntary act; it is very different from a madness which is not caused by any act of the person. That voluntary species of madness which it is in a party's power to abstain from, he must answer for. *However, with regard to the intention, drunkenness may perhaps be adverted to according to the nature of the instrument used. If a man uses a stick, you would not infer a malicious intent so strongly against him, if drunk, when he made an intemperate use of it, as you would if he had used a different kind of weapon; but where a dangerous instrument is used, which, if used, must produce grievous bodily harm, drunkenness can have no effect on the consideration of the malicious intent of the party.*"(*u*) Perhaps this is doing no more than reiterating the principle we have already announced, that when there is evidence of *sober* premeditation, intermediate drunkenness cannot be received to affect the question of intent; but that, when there is no such evidence, it can. And it would hardly be possible to strain farther than this the following charge, in 1837, by Parke, B. (to be distinguished from Park, J., whose opinion, two years before, has been just noticed)—"I must tell you, that if a man makes himself voluntarily drunk, that is no excuse for any crime he may commit while he is so; he must take the consequence of his own voluntary act; or most crimes would otherwise be unpunished. But drunkenness may be taken into consideration in cases where what the law deems sufficient provocation has been given; because the question is, in such cases, whether the fatal act is to be attributed to the passion of anger, excited by the previous provocation, and that passion is more easily

(*r*) R. *v.* Cruse, 8 C. & P. 541.
(*s*) R. *v.* Grindley, 1 Rus. on Cr. 8, note *n*.
(*t*) R. *v.* Carrol, 7 C. & P. 145.
(*u*) R. *v.* Meakin, 7 C. & P. 297.

excitable in a person when in a state of intoxication, than when he is sober. So, where the question is, whether words have been uttered with a deliberate purpose, or are merely low and idle expressions, the drunkenness of the person uttering them is proper to be considered. But if there is really a previous determination to resent a slight affront in a barbarous manner, the state of drunkenness in which the prisoner was, ought not to be regarded, for it would furnish no excuse. You will decide whether the subsequent act does not furnish the best means of judging what the nature of the previous expression really was."(*v*)

§ 72. The American cases present the same general result, depending in principle, if not in terms, on the position that where the encounter was sudden, and the defendant, prior to such encounter, had no malice or old grudge, intoxication at the time of the encounter, can be taken into consideration, to ascertain whether the defendant when under a legal provocation, acted from malice or from sudden passion.(*w*) These cases have been arranged as follows, by a late learned writer.(*x*)

"In 1848 the question of intoxication was before the Supreme Court of Alabama, on an indictment for an assault with intent to kill. The court was asked in that case to charge the jury, that, 'although drunkenness does not incapacitate a man from forming a premeditated design of murder, yet as it clouds the understanding and excites passion, it might be evidence of passion only, and of a want of malice and design.' This the court refused, but told the jury that 'drunkenness could have no effect in their consideration.' The prisoner excepted, and on the hearing in full court, Chilton, J., declared that it was a general rule, that although drunkenness reduces a man to a state of temporary insanity, it does not excuse him, or palliate an offence committed in a fit of intoxication, and which is the immediate result of it; and that if the prisoner had killed the deceased with the deadly weapon (a knife) with which he stabbed him, in a state of intoxication, the crime would not have been reduced from murder to manslaughter by his intoxication, which must be presumed, in absence of contrary evidence, to be voluntary; and the court remark, upon the cases of Penna *v.* Nutall,(*y*) and Swan *v.* The State,(*z*) that there it was important to ascertain whether the homicide was that '*wilful, deliberate, malicious and premeditated* killing,' which, by statute, constituted murder in the first degree. The mental state required for that crime, being one of deliberation and premeditation, the fact of the prisoner's drunkenness was material, not as an excuse for the crime, but to show it had not been committed. The State *v.* Bullock.(*a*) Possibly this case may have gone too far in refusing to allow drunkenness to be given in evidence upon question of the intention. The Supreme Court of North Carolina has declared the same law. In 1848 a prisoner was indicted for murder. One defence was drunkenness. The judge told the jury that drunkenness would not lessen the prisoner's guilt, if they believed him sane before he became drunk. A new trial being moved for, on the ground of misdirection, Battle, J., said: 'All the

(*v*) R. *v.* Thomas, 7 C. & P. 817.
(*w*) See Schaller *v.* State, 14 Missouri, 502.
(*x*) 6 Law Rep. (N. S.) 556, &c.
(*y*) Add. 257.
(*z*) 4 Humph. 136.
(*a*) 13 Alabama, 413, A. D. 1848.

writers on the criminal law, from the most ancient to the most recent, so far as we are aware, declare that voluntary drunkenness will not excuse a crime committed by a man otherwise sane, while acting under its influence. Even the cases relied on by the counsel for the prisoner, Rex *v.* Meakin,(*b*) Rex *v.* Thomas,(*c*) all acknowledge the general rule; but they say that when a legal provocation is proved, intoxication may be taken into consideration, to ascertain whether the slayer acted from malice or from sudden passion, excited by the provocation. Whether the distinction is a proper one or not we do not pretend to say. It has been doubted in England, Rex *v.* Carroll,(*d*) and it is a dangerous one, and ought to be received with great caution. But whether admitted or not, it has no bearing upon the present case. There is not a particle of testimony to show that the prisoner was acting, or can be supposed to have been acting under a *legal* provocation; and there was therefore no cause for the application of the principle for which the counsel contends. The State *v.* John.(*e*) The case of Preble *v.* State(*f*) is an important case on this point. The defendant was indicted for murder. At the time of the commission of the offence he was intoxicated from the use of ardent spirits. "And in relation thereto the judges charged the jury, that the fact of such drunkenness could not be taken into consideration by them, unless the defendant was so far gone as not to be conscious of what he was doing, and did not know right from wrong." "Out of this charge," said Turley, J., "arises the point to be considered by the court in this case, and that is, how far drunkenness in law is a mitigation or excuse for the commission of offences. This is no new question, presented for the first time for consideration, but one of the earliest considerations in the law of offences; one which has been again and again adjudicated by the courts of Great Britain and the United States, and, as we apprehend, with a consistent uniformity rarely to be met with in questions of a like interest and importance. Upon the subject we have nothing to discover; no new principle to lay down; no philosophical investigation to enter into, in relation to mental sanity or insanity; but only to ascertain how the law upon this subject has been heretofore adjudged, and so to adjudge it ourselves."'

"In the case of Cornwall *v.* The State of Tennessee,(*g*) the able judge who delivered the opinion of the court, in speaking upon this subject, uses the following very emphatic language:—

"'A contrary doctrine ought to be forced out of circulation, if it has obtained it, by every friend to virtue, peace, quietness and good government. All civilized governments must punish the culprit who relies on so untenable a defence; and in doing so, they preach a louder lesson of morality to all those who are addicted to intoxication, and to parents and guardians, and to youth and to society, than comes in the cold abstract from pulpits. To the justice and correctness of these remarks, all who have had experience in the annals of crime can bear testimony. It is only at the present term of the court that we have seen it proven that an offender, a short time before the perpetration of a horrid murder, inquired of a grocery-keeper what kind of liquor would

(*b*) 7 C. & P. 297. (*c*) Ibid. 817. 1 Russell on Crimes, 8. (*d*) 7 C. & P. 145.
(*e*) 8 Jud. 330. (*f*) 9 Hump. 663, A. D. 1849. (*g*) Mar. & Yer. 147, 149.

make him drunk soonest, and swallowed thereon a bumper of brandy. We have had three cases of murder, and one of an assault with an intent to murder, before us at this term of court, in every one of which these are convictions in the Circuit Court and affirmances in this; every one of which is of aggravated character, and in every one of which the perpetrator, at the time of the commission of the offence, was laboring under *dementia affectata*, drunkenness; an awful illustration of the necessity of holding to the law as it has been adjudged upon this subject. There is, in our judgment, no conflict of authority upon this point of law; every case which may have such appearance, being a case of exception, on the application of the rule, or a case of no authority upon the subject. Lord Hale, in his work before referred to,(*h*) says: "If, by means of drunkenness, an habitual or fixed madness be caused, that will be excuse, though it be contracted by the vice and will of the party; for this habitual or fixed phrensy puts a man in the same condition as if it were contracted at first involuntarily. And it was to this principle the Circuit Judge was alluding, when he charged the jury in the present case, that the drunkenness of the prisoner could not be taken by them into consideration, unless he were so far gone as to be unconscious of what he was doing, and did not know right from wrong, in saying which he put the case most favorable for the prisoner; for a man may be so intoxicated as to be unconscious of what he is doing, and not to know right from wrong; and yet not have contracted an habitual and fixed phrensy, the result of intemperance, of which Lord Hale is speaking above.'"

§ 73. In Kelly *v.* State,(*i*) the same question came before the High Court of Error and Appeals of Mississippi. The court below declined to charge the jury that intoxication was evidence of intention in determining whether the killing was murder. The prisoner was convicted of manslaughter only, but the court above, in remarking upon this question, lays down the law as well established, that drunkenness is no excuse for crime, although sometimes held proper for consideration, where the sole question is whether the act done was premeditated or done only with sudden heat or impulse, which might be as truly said of anger or any other excitement arising from sudden provocation or peculiar circumstances; that not much importance was to be attached to it, as might be conceived from the presumption, which was equally great, that the design might have previously existed, and intoxication have been employed to nerve the criminal to the commission of the crime; that the law discriminates between the delusion of intoxication and the insanity which it may ultimately produce. If drunkenness, they said, were to be considered an excuse for crime, there would be established a complete emancipation from criminal justice.

The same principle was recognized in North Carolina in State *v.* M'Cante,(*j*) being somewhat differently applied. The court here held "that if a crime was committed upon a provocation, which, if acted upon instantly by a sober man, would mitigate his offence, evidence of intoxication was admissible upon the question whether such provocation was, in fact, acted upon when the act was

(*h*) P. C. pt. 1, ch. 4. See *ante*, § 67. (*i*) 3 Smedes & Marshall, 518, A. D. 1844.
(*j*) 1 Spear, 384.

done. If a man uses a stick upon you, you would not infer a malicious intent so strongly against him if drunk when he made an intemperate use of it as you would if he had used a different kind of weapon. But where a dangerous instrument is used, which if used must produce grievous bodily harm, drunkenness can have no effect on the consideration of the malicious intent of the party."

In a case in Tennessee, already cited,(*k*) it was said by Turley, J.: "The case of R. *v.* Grindley, decided at Worcester Sum. Ass., 1819, by Holroyd, J., not reported but referred to by Russell in his work upon Crimes, page 8, and now insisted upon by the prisoner as putting the Circuit Judge in the wrong in his charge to the jury, and holding different principles upon this subject, is expressly overruled by Park and Littledale, judges, in the case of R. *v.* Carroll;(*l*) and if it were not, it is an anomalous case, and perhaps was not intended or considered by Holroyd to be in conflict with principles so well and so long settled. The case, as stated by Russell, holds that 'though voluntary drunkenness cannot excuse from the commission of crime, yet when upon a charge of murder the material question is whether an act was premeditated or done only with sudden heat and impulse, the fact of the party being intoxicated is a circumstance proper to be taken into consideration.' Now, in relation to this principle, as thus laid down, it may be observed that cases may arise, even of murder at common law, in which it would be proper to receive such proof as explanatory of intention. To constitute murder at common law, the killing must have been done with malice aforethought; the existence of this malice necessarily implies the absence of all circumstances of justification, excuse, or mitigation arising from adequate provocation; and this malice is either express or implied: express, when it has been perpetrated by poison, lying in wait, or other deliberate and premeditated manner; implied, from the nature of the weapon, the violence of the assault, and the inadequacy of the provocation. It may become important in a case to know whether poison which has been imbibed was administered knowingly and designedly or accidentally. And if it be wilful, which it is in the case of a medicine, there being two on the table, one a poison and the other not, and the poison be administered, is not the fact that the person who administered it was drunk at the time legitimate proof for the purpose of showing that it was a mistake which a drunken man might make, though a sober one would not? This would be, not to protect him from the punishment for his crime, but to show that he had not given the poison premeditately, and therefore was guilty of no crime. So if the question be whether the killing is murder or manslaughter, the defence being adequate provocation, and it be doubtful whether the blow be struck upon the provocation or upon an old grudge, it seems to us, proof that the prisoner was drunk when he struck the blow is legitimate, not to mitigate the offence, but in explanation of the intent—that is, whether the blow was struck upon the provocation or upon the old grudge; for the law only mitigates the offence to manslaughter, upon adequate provocation, out of compassion to human frailty; and therefore, though there be adequate cause for such mitigation,

(*k*) Pirtle *v.* State, 9 Hamp. 663.

(*l*) 7 C. & P. 145.

yet if, in point of fact, one avail himself of it to appease an old grudge, it is murder, and not manslaughter; and in all such cases the question necessarily is whether the blow was stricken premeditately, or upon sudden heat and impulse produced by the provocation, and the fact of the self-possession of the perpetrator of the crime is very material in a conflict of proof upon the subject. If this be the extent of the opinion of Holroyd, in the case of Rex *v.* Grindley, we are not prepared to hold that it is not law. But if it be understood to hold that a killing may be mitigated from murder to manslaughter in consequence of the drunkenness of the perpetrator, thereby making that adequate provocation in the case of a drunken man which could not be so in the case of a sober one, we are prepared to hold, with Park and Littledale, that it is not law."

In 1858, on an indictment for maliciously stabbing with an intent to kill, the Supreme Court of Ohio said:—

"Did the court below err in holding, as it did substantially, that, in a case of this kind, the intoxication of the accused had nothing to do with the question of malice?

"This is a question much more difficult and serious than the preceding, and in respect to which our minds have not been free from doubt; but, after a long and somewhat anxious deliberation, we have unanimously come to the conclusion that there was no error in the charge of the court below on this point.

"All authorities agree that drunkenness is no excuse for crime. Crime, when all the acts of hand and mind which constitute it actually exist, is not the less criminal when committed by a person intoxicated. A drunken malice is as dangerous, and may be quite as wicked, as a sober malice; and it is a sorry consolation to a sufferer from a murderous stab, and to a community which is responsible for his protection, to be told that the act was done by a man who was bound in morals to keep sober, and who had the power to keep sober, but who had become voluntarily drunk. Nevertheless, it has been held, in this State, that where a peculiar knowledge was an element of the guilty act, requiring nice discrimination and judgment, as in passing a counterfeited bank-bill, knowing it to be counterfeited, and where deliberation and premeditation are necessary ingredients of the crime, as in murder in the first degree, evidence of intoxication is admissible, and proper to be taken into consideration by the jury, in determining the question as to the guilty knowledge in the one case, and as to the deliberation and premeditation in the other. So, if the accused was so drunk as not to know what he was doing, the fact of intoxication may doubtless be given in evidence for what it is worth for the purpose of showing that he did not intend at the time to do what in fact he did do.(*m*) So far as we are advised, there is no reported case in Ohio requiring us to go beyond this; and to this extent, on a fair construction of the language of the court below in charging the jury, the prisoner, in the case before us, had the benefit of the evidence in regard to his state of intoxication. And this, too,

(*m*) Pigman *v.* The State, 14 Ohio Rep. 555.

seems to be the full extent to which we are led by the general current of authorities in other States.(*n*)

"We will not say but that, admitting the correctness of these decisions, a refined and rigid logical theory might not require us to go further. But here the authorities authorize us to stop; and here we think a proper regard to the public safety in the practical administration of criminal justice requires that we should stop. This kind of evidence is at best, and in any case, of dangerous tendency in its practical application. Intoxication is easily simulated. It is often voluntarily induced for the sole purpose of nerving a wicked heart to the firmness requisite for the commission of a crime soberly premeditated, or as an excuse for such a crime. Yet these pre-existing dispositions may be difficult or impossible to prove. And when we admit evidence of intoxication to rebut a guilty knowledge requiring nice deliberation and judgment, to rebut a charge of deliberation and premeditation, and to show that the accused did not at the time intend to do the act which he did do, we think we have gone far enough; and that, looking to the practical administration of the criminal law, a due regard to the public safety requires that the mere question of malice should be determined by the circumstances of the case, aside from the fact of intoxication, as in other cases."(*o*)

§ 73 (*a*). 4th. *Burden of proof in insanity.*—Where the burden of proof lies in a criminal trial where insanity is set up, is considered in another work.(*p*) The rule in civil cases has already been noticed.(*q*)

CHAPTER II.

MENTAL UNSOUNDNESS CONSIDERED PSYCHOLOGICALLY.

§ 74. "THE various diseases included in the general term insanity, or mental derangement," says Dr. Ray, "may be conveniently arranged under two divisions, founded on two very different conditions of the brain; the first being a want of its ordinary development, and the second, some lesion of its structure subsequent to its development. In the former of these divisions, we have Idiocy and Imbecility, differing from each other only in degree. The various affections embraced in the latter general division may be arranged under two subdivisions, Mania and Dementia, distinguished by the contrast they present in the energy and tone of the mental manifestations. Mania is characterized by unnatural exaltation or depression of the faculties, and may be confined to the intellectual or to the affective powers, or it may involve them both, and these powers may be generally or partially deranged. Dementia depends on a more or less complete enfeeblement of the faculties, and may be consecutive to injury of the brain, to mania, or to some other disease; or it may be con-

(*n*) Com. *v.* Jones, 1 Leigh, 612; Com. *v.* Haggerty, Lewis C. L. 403; Pirtle *v.* The State, 9 Humph. 664; Swan *v.* The State, 4 Humph. 136; Haile *v.* The State, 11 Humph. 154; 2 Parker's (N. Y.) C. Rep. 223-235.

(*o*) Nichols *v.* The State, 8 Ohio State R. (N. S.) 438-9.

(*p*) Wharton's Criminal Law, § 55, 711.

(*q*) *Ante*, § 33-35.

nected with the decay of old age. These divisions will be more conveniently exhibited in the following tabular view :—

INSANITY.	Defective development of the faculties.	IDIOCY.	1. Resulting from congenital defect. 2. Resulting from an obstacle to the development of the faculties, supervening in infancy.
		IMBECILITY.	1. Resulting from congenital defect. 2. Resulting from an obstacle to the development of the faculties, supervening in infancy.
	Lesion of the faculties subsequent to their development.	MANIA.	INTELLECTUAL, 1. General. 2. Partial.
			AFFECTIVE, 1. General. 2. Partial.
		DEMENTIA.	1. Consecutive to mania, or injuries of the brain. 2. Senile peculiar to old age. (*a*)

§ 75. The following classification of Flemming, (*b*) while less simple, is very valuable both for the delicate precision of its analysis, and for the important aid it affords to the nomenclature of forensic psychology :—

I. INFIRMITAS. (Geistesschwäche.) Imbecility, the characteristic being the diminution in psychical power.
  1st. As to origin.
    (1.) *Primaria seu congenita.* (Syn. *Idiotismus.*) A defective development perceptible either at birth or infancy.
    (2.) *e morbo,* arising from wounds on the head, brain or nervous fevers, or epilepsy.
    (3.) *Senilis,* arising from decrease in vitality in the extreme stages of old age.
  2d. As to extent.
    (1.) *Infirmitas adstricta.* Limited imbecility, the characteristic being diminution of particular organic powers.
      (*a*) *Dysmenia.* Weakness of memory, the characteristic being the feebleness of the reproductive power of the perceptive faculty, and the symptoms, an inability to remember things either recent or remote, distinctly or at all.
      (*b*) *Infirmitas adstricta surdo-mutorum.* Imbecility of the deaf and dumb.
      (*c*) *Infirmitas adstricta cæcorum.* Imbecility of the blind.
    (2.) *Infirmitas sparsa.* General weakness of mind, the characteristic being the absolute or relative weakness of all the mental and moral functions, and the symptoms, obtuseness and feebleness of the perceptive and attentive powers ; feebleness of comprehension, of ratiocination, of imagination, of memory, in a variety of gradations.

II. VESANIA, (Geistes verwirrung.) Mental confusion, the characteristic being a depravity (depravation) of the psychical powers arising from excess or perversion.
  1st. *Vesania dysthymodes,* or *dysthymia,* disorder of temperament, the characteristic being the depravity (*depravation*) of the psychical powers connected with an overpowering disturbance of the temperament. Symptoms ; an anomalous condition of the sensibility, the mental tone, the inclinations, and the impulses. The consequent deliria are the invariable effect of the dysthymia, and depend upon the prevailing feeling or sentiment.
    (1.) *Dysthymia transitoria seu subita.* Sudden dysthymia, the characteristic being the suddenness and rapidity of its approach. Symptoms ; irritability, proneness to agitation, irascibility, excessive disgust, fear of death, extreme timidity, despair of happiness. It occurs frequently in the *Stadium prodromorum* of cerebral affections and nervous fevers, or of epilepsy and the cognate complaints ; and is sometimes, though more rarely, accompanied by the sudden suicidal impulse. It should be observed that *dysthymia remittens* sinks in the remission into the mere *dysæthesis.*
    (2.) *Dysthymia adstricta,* or partial dysthymia, the characteristic being an anomalous condition of particular states of feeling, inclinations, and impulses.

(*a*) Ray on Insanity, 71.
(*b*) Psychiatrisches Journal, Bd. I. Hft. 1, p. 112.

(*a*) *Atra* (the *Melancholia Lypemonia*, of Esquirol), or gloomy *Dysthymia*, the characteristic being sadness, fear, dread, suspicion, malevolence, homesickness (*nostalgia*), and the wildness and ferocity of the intoxicated. (*Ferocitas et morositas ebriosorum.*

(*b*) *Dysthymia candida*, cheerful *Dysthymia* (*Melancholia hilaris, Chæromanie Chambeyron*), the characteristics being hilarity, recklessness of manner, raillery, proneness to see all things in the most vivacious light.

(*c*) *Dysthymia mutabilis*, variable *Dysthymia*, the characteristic being vacillation between the two foregoing forms.

(3.) *Dysthymia sparsa* (*apathica*), general Dysthymia (*Melancholia Attonita*). The characteristics being, apparent obtuseness, dull, heavy reveries and abstractions, prevalence of an indistinct sensation of discomfort, apathy to all extraneous impressions.

2d. *Vesania Annoetos*, or *Anoesia*. Disturbance of the understanding. The characteristics being the depravity (depravation) of the psychical powers, with a controlling anomalousness of the intellectual faculties. Symptoms, deliria of various kinds, with manifestations of Dysthymia, which, however, are merely subordinate.

(1.) *Anoesia Transitoria*, or *Subita*. Sudden Anoesia. The characteristics being unexpected appearance and rapid subsidence.

(*a*) *Anoesia e febre*. Febrile delirium.

(*b*) *Anoesia e potu nimio* (*ebrietas*). Drunkenness.

(*c*) *Anoesia ex affectu*, madness caused by agitation of mind.

(*d*) *Anoesia semisomnis*. Confusion of mind in sleep. Sleep-drunkenness.

(*e*) *Anoesia Somnambula*, or *Spastica;* Somnambulism.

(2.) *Anoesia continua, chronic Anoesia.*

(3.) *Anoesia remittens*. Remittent Anoesia.

(4.) *Anoesia adstricta*, partial Anoesia or Lunacy. The characteristics being delirium in particular intellectual departments.

(*a*) *Anoesia ad sensationes*. Hallucinations (deliria of the senses). (Var. *a fallacia sensuum et hallucinatio ebriosorum*), derangement of the senses consequent on excess of drinking.

(*b*) *Anoesia ad cogitationes*, eccentricity, fixed insane ideas.

(5.) *Anoesia sparsa*. General Anoesia or lunacy, the characteristics being Deliria in every department of the intellectual faculties. Var. *a Anoesia potatorum* (*Delirium tremens*).

3d. *Vesania maniaca seu Mania*. The characteristic being a depravity (depravation) of the psychical functions, with a concurrent anomalousness of the emotional and intellectual faculties. The symptoms are a violent and perverse temper, inclinations and impulses, with violent deliria, which mutually sustain and aggravate each other.

(1.) *Mania transitoria subita*, sudden mania, the characteristic being a sudden breaking out of mania without perceptible premonitory stages, and without previous *Dysthymia* or *Anoesia;* generally a crisis in sleep, or transition to the second class.

(*a*) *Mania subita a febre* (*Delirium encephaliticum*), sudden delirium, with feverish symptoms of the brain and nerves.

(*b*) *Mania subita a potu nimio*, arising from and during intoxication.

(*c*) *Mania subita ex effectu*, mania caused by excessive agitation of the affections.

(*d*) *Mania subita e partu*, mania connected with parturition.

(*e*) *Mania subito e morbo occulto* (vulgo), *Amentia occulta*, which also includes the previous species.

(2.) *Mania continua*, permanent mania.

(3.) *Mania remittens*, Remittent mania. (Remark—Remittent mania in remission turns into Anoesia, in some cases immediately into Dysthymia.)

(4.) *Mania adstricta seu instinctiva*. Moral Insanity. (*Mania sine delirio* of Pinel; *Monomanie instinctive* of Marc; Mania affectiva; Folie raisonante); the characteristics being insanity, apparently confined to specific morbid impulses. This class is almost always connected with the symptoms of *Mania transitoria seu subita*.

(5.) *Mania Sparsa*, general mania is the characteristic, being a depravity (depravation) of both the moral and intellectual powers.

§ 76. To Ellinger(*c*) we are indebted for the following :—

I. Diseases of the affections, when the affections, sentiments and desires are preponderatingly alienated, while the intellectual faculties are affected in an inferior or at least a secondary degree.

(*c*) Ueber die antropologischen Momente der Zurechnungs fähigkeit. Ludwigsburg, 1846.

(*a*) Melancholy, the prevalent type being sadness, depression, fear, dread, and despair.
(*b*) Phrensy, the prevalent type being mirth, mischievousness, anger.
(*c*) Volatility (Launenhaftigkeit). Alternation between the two last mentioned phases.

II. Delirium, the sentiments and intellectual faculties being equally affected, and both the subjective and objective relations alike distorted.
(*a*) (*b*) (*c*) Characterized by melancholy, phrensy, and the alternation of the two.

III. Diseases of the intellect, where the affections take a subordinate part and the intellect is mainly disordered.
(*a*) Partial.
(*b*) General.
(*c*) Debility, including idiocy and imbecility.

§ 77. Without attempting a formal analysis, it is now proposed to consider the several points in which Psychology comes in contact with the law of the land, in the following order :—

I. GENERAL THEORIES OF MENTAL UNSOUNDNESS, § 78.
1st. PSYCHOLOGICAL THEORY, § 79.
2d. SOMATIC THEORY, § 80.
3d. INTERMEDIATE THEORY, § 81.
Difficulties attending each of the first two, § 82.
Question as to moral responsibility of lunatics, § 83.

II. HOW MENTAL UNSOUNDNESS IS TO BE DETECTED, § 86.
1st. BY WHOM, § 86.
Medical expert necessary for this purpose, § 86.
Great skill and experience needed, § 87.
Dangers of an inexperienced examiner being baffled, § 88.
Responsibility in law of medical examiner, § 89.
Importance of examiner adapting his manner to patient's condition, § 90.
Important that legal and medical officers should, in such cases, act in common, § 92.
Manner in which medical witness is to be examined on trial, § 94.
2d. AT WHAT TIME, § 95.
(1.) Time of act, § 95.
(2.) At trial, § 97.
(3.) On and after sentence, § 98.
3d. BY WHAT TESTS, § 100.
(1.) Physiognomy, § 100.
Relations of the different features, § 101.
(2.) Bodily health and temperament, § 102.
State of bowels, § 102.
Physical disorganization, § 103.
Insensibility to pain and cold, § 104.
Irregularities in action of senses, § 105.
Change in disposition, § 106.
(3.) Hereditary tendency, § 107.
Importance of this test, § 108.
Admissible in point of law, § 108.
Opinion of Gibson, C. J., § 108.
(4.) Conversation and deportment, § 110.
Necessity of great circumspection in this respect, § 110.
Cases illustrating this, § 111.
(5.) Nature of act, § 112.
(*a*) Its insensibility, § 112.
(*b*) Its incongruity with antecedents, § 113.
(*c*) Its motivelessness, § 114.
(*d*) Its inconsequentiality, § 115.

III. FROM WHAT MENTAL UNSOUNDNESS IS TO BE DISTINGUISHED.
1st. EMOTIONS, § 116.
(1.) Remorse, § 116.
(2.) Anger, § 118.
(3.) Shame, § 122.
(4.) Grief, § 124.
(5.) Homesickness (*Nostalgia*), § 125.

2d. Simulated insanity, § 127.
Necessity for close examination, § 127.
Tests to be applied, § 128.
Delirium most usually counterfeited, but the most difficult, § 129.
Physiognomy and health to be examined, § 130.
Case to be compared with other recorded cases, § 131.
Simulation not to be inferred from absence of a trace of insanity at the examination, § 132.
Causes why such signs may be suppressed, § 132.
Pretended insanity frequently turns into real, § 133.
How examination is to be conducted, § 134.
Patient to be brought into a succession of relations, § 135–8.
To be furnished with pen, ink, and paper, and other methods of examination, §§ 135–8.
Insania Occulta, features of, § 139.
Necessity of guarding against, § 139.

IV. MENTAL UNSOUNDNESS, AS CONNECTED WITH DERANGEMENT OF THE SENSES, AND DISEASE, § 140.
1st. Deaf and Dumb, § 140.
2d. Blind, § 141.
3d. Epileptics, § 142.
Peculiar tendency of epilepsy to insanity, § 142.
Nature of epilepsy, § 143.
Distinction between the several classes, § 144.
Different stages of the disease, § 145.
Actions committed during attack, not valid, § 146.
Rule as to intermediate stages, § 147.
Tests laid down by Clarus, § 148.

V. MENTAL UNSOUNDNESS, AS CONNECTED WITH SLEEP, § 149.
General effect of sleep on the senses, § 149.
1st. Somnolentia, or sleep-drunkenness, § 151.
2d. Somnambulism, § 159.

VI. MENTAL UNSOUNDNESS, AS AFFECTING THE TEMPERAMENT, § 163.
1st. Depression, § 163.
2d. Hypochondria, § 166.
3d. Hysteria, § 169.
4th. Melancholy, § 170.

VII. MENTAL UNSOUNDNESS, AS AFFECTING THE MORAL SYSTEM, § 174.
1st. General moral mania, § 174.
Effect of, § 174.
General symptoms, § 175.
Illustrations, § 176.
2d. Monomania, § 177.
Doctrine of *Mania sine Delirio*, § 178.
Difference of opinion as to its existence, § 179.
Tests to be applied to it, § 180.
Tendency in this country to recognize its existence, § 183.
(1.) Homicidal mania, § 186.
Cases where Esquirol supposes it to exist, § 186.
Precautions necessary in its recognition, § 190.
Tests suggested by Dr. Ray, § 190.
" " " Dr. Taylor, § 190.
Dr. Mayo's objections to the entire theory, § 191.
(2.) Kleptomania (morbid propensity to steal), § 192.
(3.) Pyromania (morbid incendiary propensity), § 195.
How far recognized in England, § 197.
Necessary tests, § 198.
(4.) Aidoiomania (morbid sexual propensity), § 199.
(5.) Pseudonomania (morbid lying propensity), § 202.
(6.) Oikeiomania (morbid state of domestic affections), § 204.
(7.) Suicidal mania (morbid propensity to self-destruction), § 206.
Tendency to this in cases of melancholy, &c., § 207.
Legal consequences in actions against life insurers, § 208.

(8.) Fanatico-mania, § 209.
(*a*) Supernatural or pseudo-supernatural demoniacal possession, § 210.
Testimony of ancient writers to this, § 210.
" of the New Testament, § 211.
(*b*) Mental alienation on religious subjects, § 214.
Tendency of infidelity to insanity, § 214.
Conservative influence of Christianity, § 215.
Insane delusion the result of a *departure* from Christianity, § 216.
Illustrations of this, § 217.
Legal bearings of religious insanity, § 219.
(9.) Politico-mania, § 220.
How far an epidemic, § 221.
Causes likely to generate it, § 221.

VIII. MENTAL UNSOUNDNESS, AS CONNECTED WITH INTELLECTUAL PROSTRATION, § 222.
1st. IDIOCY, § 222.
Nature of, § 222.
Physical incidents of, §§ 523–5–6.
Cretenism, § 228.
2d. IMBECILITY, § 229.
With concomitant insanity, § 230.
Original, § 230.
Supervening, § 230.
Specious, § 230.
With confusion of mind, § 230.
Without insanity, § 231.
Distinction between innocent and malignant imbecility, § 232.
3d. DEMENTIA, § 234.

IX. MENTAL UNSOUNDNESS ACCOMPANIED WITH DELIRIUM, § 235.
1st. GENERAL DELIRIUM, § 235.
(*a*) Depressed delirium, § 236.
(*b*) Maniacal delirium, § 237.
(*c*) Delirium tremens, § 238.
(*d*) Puerperal mania, § 239.
2d. PARTIAL DELIRIUM, § 240.

X. MENTAL UNSOUNDNESS, AS CONNECTED WITH DELUSIONS AND HALLUCINATIONS, § 241.
1st. GENERAL, § 241.
Marked by general derangement of the perceptive faculties, § 241.
Various phases it assumes, § 242.
Tests of Ellinger, § 243.
Effect of general delusion, § 244.
2d. PARTIAL, § 245.
Delusions and hallucinations, § 245.
When there is no other sign of mental unsoundness, § 246.
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In cases of drunkenness, &c., § 248.
In cases of developed insanity, § 249.
Causes of delusions, § 250.
Abercrombie's classification, § 252.
Hallucination in regard to a change into, or a possession by, wild animals, § 253.

XI. MENTAL UNSOUNDNESS, AS CONNECTED WITH LUCID INTERVALS, § 254.

XII. TREATMENT OF INSANE CRIMINALS, § 259.
Necessity of separate places of confinement in which insane criminals can be placed, § 259.
(1.) FOR RETRIBUTION, § 260.
In most if not all, cases of crime resulting from insane impulse, there is original responsibility, § 260.
Insanity, in most cases, the result of moral excess, § 261–9.
Qualified responsibility of lunatics, § 261–9.

(2.) For Prevention, § 270.
Mischief to society if monomaniacs are suffered to go at large, § 270.
Necessity of restraint, § 271.
(3.) For Example, § 272.
Contagiousness of unchecked crime, § 272.
(4.) For Reform, § 273.
Impossibility of patient recovering when permitted to run at large, § 273.
Injury to the community from the want of secondary punishments, the result being acquittals of dangerous parties, from an unwillingness to see the severer penalties inflicted, § 274.
Ordinary penitentiaries inadequate, § 275.
And so of ordinary lunatic asylums, § 276.

I. General theories of mental unsoundness.

§ 78. To those who have examined that portion of the preceding pages which treats of the legal relations of mental unsoundness, it will be obvious that no hypothesis can be constructed which will meet with exactness every possible future case. No general definition has therefore been attempted, and it is sufficient at present to notice the three prominent hypotheses by which the *cause*, rather than the *nature*, of mental unsoundness has been explained. This examination is here made the more thorough, from the fact that it is upon the result of this inquiry that the philosophy of the common law doctrine of insanity must depend.

§ 79. 1st. *The psychological theory.* This is based on the assumption that the primitive source of these diseases is in the soul itself, and that the soul is that which originally suffers, and imparts, when there is sympathetic insanity, its malady to the body.(*d*)

§ 80. 2d. The *somatic theory* takes for granted that the soul itself, as such, is incapable of originating a disease, but that the occasion of every affection of the mind is to be found in some abnormity of bodily development, and that aberrations of mind are nothing more than disturbances of some functions of the soul produced by bodily abnormities. This theory resolves itself into various subdivisions. One party assumes, that while every mental disease is to be deduced from bodily causes, it is still to be treated as a self-existent disease; while others maintain that there can be no such thing as a diseased state of the mind, and that what we usually designate as such, is nothing more than a symptom of some bodily disorder.(*e*) The somatic theory, so far as it involves phrenology, is examined with singular accuracy and thoroughness by Sir William Hamilton, in the appendix to the first volume of his Lectures on Metaphysics.(*ee*) He first discusses the phrenological doctrine of

(*d*) See an exposition of this in Dr. Henry Monro's "Remarks on Insanity, its Nature and Treatment." London, 1850.

(*e*) A very ingenious though unsound defence of the Somatic Theory will be found in Mr. M. B. Sampson's "Criminal Jurisprudence considered in relation to Cerebral Organization." London, 1843. Hobbes' famous theory drifts in the same direction. The result of this would be to make all restraint an injustice. So far as concerns phrenology, the reader is particularly referred to Sir William Hamilton's Lectures on Metaphysics, pp. 650–658, where the phrenological theory is thoroughly demolished.

(*ee*) Edition by Mansel and Veitel, Gould and Lincoln, 1859.

the cerebellum, and by a series of experiments, explodes the phrenological hypothesis. After having weighed, with peculiar care, and under precautions which exclude all the known possibilities of mistake, over one thousand brains of fifty different species of animals, he shows :—

(1.) The cerebella of animals generally are not, during a certain period subsequent to birth, less in proportion to the brain proper than in adults.

(2.) In no species of animal has the female a proportionally smaller cerebellum than the male; while in most species, "and this, according to a certain law, she has a considerably larger."

(3.) So far from being the case, as is alleged by phrenologists, that in impuberal animals the cerebellum, in proportion to the brain proper, is greatly less than in adults, the contradictory is shown.

(4.) The phrenological assertion, that "the proportion of the cerebellum to the brain proper in different species, is in proportion to the energy of the phrenological function attributed to it," is equally groundless.

We add one or two distinct points made by this most eminent and most reliable of modern psychologists: "I shall, however, give you the sample of another general fact. The organ of veneration rises in the middle on the coronal surface of the head. Women, it is universally admitted, manifest religious feeling more strongly and generally than men, and the phrenologists accordingly assert that the female cranium is higher in proportion in that region than the male. This I found to be the very reverse of truth, by a comparative average of nearly two hundred skulls of either sex. In man, the female encephalus is considerably smaller than that of the male, and in shape the crania of the sexes are different. By what dimension is the female skull less than the male? The female skull is longer, it is nearly as broad, but it is much lower than the male. This is only one of several curious sexual differences of the head.

"I do not know whether it be worth while mentioning, that, by a comparison of all the crania of murderers preserved in the Anatomical Museum of this University, with about nearly two hundred ordinary skulls indifferently taken, I found that these criminals exhibited a development of the phrenological organs of destructiveness and other evil propensities smaller, and a development of the higher moral and intellectual qualities larger, than the average. Nay more, the same results were obtained when the murderers' skulls were compared, not merely with common average, but with the individual crania of Robert Bruce, George Buchanan, and Dr. David Gregory."

Then, as to the frontal sinuses:—

"I omit all notice of many other decisive facts subversive of the hypothesis in question; but I cannot leave the subject without alluding to one, which disproves at a blow a multitude of organs, affords a significant example of the accuracy of phrenological statement, and shows how easily manifestation can, by the phrenologists, be accommodated to any development, real or supposed. I refer to the frontal sinuses. These are cavities between the tables of the frontal bone, in consequence of a divergence from each other. They are found in all puberal crania; their extent and depth are variable, and wholly inappreciable from without. Fortunately, or unfortunately, the phre-

nologists have placed seventeen of their smallest organs over the region of the sinus, that is behind it. How is it possible that eye or finger can detect minute degrees of cerebral development beyond these invisible, unknown cavities, of various extent? The phrenologists were not acquainted with the anatomy of the part. Gall asserted that the sinus was often absent in men; seldom or never found in women. Spurzheim declares that the frontal sinuses are found only in old persons, or after chronic insanity."

In reply to this, Sir W. Hamilton shows, after an inspection of several hundred crania, that no skull is without a sinus.

"Behind the spacious caverns," he then goes on to show, "in utter ignorance of the extent, frequency, and even of the existence of this impediment, the phrenologists have placed not *one large*, but *seventeen* of their *smallest* organs."

"By concentrating all their organs of the smallest size within the limits of the sinus, they have, in the first place, put the organs whose range of development is least, behind an obstacle whose range of development is greatest.

"In the second place, they have at once thrown one-half of their whole organology beyond the range of possible discovery and possible proof.

"In the third place, by thus evincing that their observations on that one-half had been only illusive fancies, they have furnished a criterion of the credit that may be accorded to their observations on the other half. In this, as in other portions of their doctrine, they have shown that *manifestation* and *development* are quantities, which (be they what they may), can always be brought to an equation.

"Fourthly, as if determined to transcend themselves, and find 'a lower deep beneath the lowest,' they have placed the least of their least organs at the very point where this great obstacle is most potent. The sinus is almost always deepest towards the inner angle of the eyebrows, and it is just there that the minute organs of size, configuration, weight, resistance, &c., are said to be.

"In the fifth place they have been quite as unfortunate in the location of the other minute organs. These they arranged in a series along the upper edge of the orbit, where, independently of the sinus, the bone varies more in thickness than in any other part of the skull. Here have they packed those organs more closely than peas in a pod, which they scarcely exceed in size. If these pretended organs actually and severally protruded from the brain (which they do not), if there were no sinus intervening (as there is), if they were under the thinnest part of the cranium (instead of the thickest), still these petty organs could not reveal themselves by showing any elevation, and especially any sudden elevation of superincumbent bone. They might possibly indent the inner surface, and cause a slight attenuation of the bone—and this is all they could do. The glands of Pacchioni, as they are improperly called, which rise on the coronal surface of the encephalos, and are often even larger than the bodies in question, though they attenuate to the thinnest, never elevate in the slightest the external bony plate."

The thoroughness of the material on which Sir W. Hamilton acted, is shown by the fact that all the crania in the public Anatomical Museum at Edinburgh were inspected by him. He subsequently obtained access to fifty

crania, with their supposed developments marked by Spurzheim's own hand, which had passed to the Royal Museum of Natural History at Edinburgh. By a tabular view he shows that a large proportion of the supposed "organs" were covered or crowded by the frontal sinus.

§ 81. 3d. The *intermediate theory* attributes to the body and the soul alike originative influence, in the growth of mental diseases.(*f*) This theory is

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(*f*) See a very capable sketch of these theories in Schürmayer, Gerichtliche, Medicin, § 521, from which this analysis is taken, and see also particularly Dr. Rush's examination of the same points in his treatise on the Mind, pp. 12, 13, 14, and where that eminent authority (p. 16) localizes madness in the bloodvessels of the brain.

Feuchtersleben, in his celebrated work (Principles of Medical Psychology, translated by Evans Lloyd, printed by the Sydenham Society, London, 1847), may be considered as adopting the intermediate theory. Insanity, he tells us, is not either a bodily or a mental disease, being a disturbed reciprocal relation of mind and body. Dr. Jamieson (Lectures on the Med. Jur. of Insanity, by Robert Jamieson, M. D.) takes this same view.

The religious aspects of the question are well discussed in the *London Christian Observer*, vol. 29, p. 265, and by the Rev. Dr. Jones, in "Man, Moral and Physical," Phil. 1860.

Sir Benjamin Brodie, in a late very interesting essay (Psychological Inquiries, &c. London, 1854), gives the following conclusive objections to the phrenological phase of the somatic theory: "Now there are two simple anatomical facts which the founders of this system have overlooked, or with which they are probably unacquainted, and which of themselves afford a sufficient contradiction of it.

"1st. They refer the mere animal propensities, chiefly to the posterior lobes, and the intellectual faculties to the anterior lobes of the cerebrum. But the truth is, that the posterior lobes exist only in the human brain, and in that of some of the tribes of monkeys, and are absolutely wanting in quadrupeds. Of this there is no more doubt than there is of any other of the best established facts in anatomy; so that, if phrenology be true, the marked distinction between man on one hand, and a cat, or a horse, or a sheep on the other, ought to be, that the former has the animal propensities developed to their fullest extent, and that these are deficient in the latter.

"2dly. Birds have various propensities and faculties in common with us, and in the writings of phrenologists many of their illustrations are derived from this class of vertebral animals. But the structure of the bird's brain is essentially different, not only from that of the human brain, but from that of the brain of all mammalia. In order that I may make this plain, you must excuse me if I repeat what I said on the subject formerly. In the mammalia the name of the *corpus striatum* has been given to each of two organs of a small size compared with that of the entire brain, distinguished by a peculiar disposition of the gray and the fibrous or medullary substance of which they are composed, and placed under the entire mass of the hemispheres of the cerebrum. In the bird's brain what appears to be a superficial observer to correspond to these hemispheres is found on a more minute examination, to be apparently the *corpora striata* developed to an enormous size; that which really corresponds to the cerebral hemispheres being merely a thin layer expanded over their upper surface, and presenting no appearance of convolutions. It is plain then, that there can be no phrenological organs in the bird's brain, corresponding to those which are said to exist in the human brain, or in that of other mammalia. Yet birds are as pugnacious and destructive, as much attached to the localities in which they reside, as any individual among us."

In his interesting work on Criminal Jurisprudence, Mr. Sampson adopts the views of the author of the "Vestiges of the Natural History of Creation," and ascribes every criminal action to some abnormal or morbid condition of the cerebral organization. This fundamental proposition is, that "every manifestation of the mind depends upon the confirmation and health of its material instrument, the brain; and as it is not the function of a sound and healthy brain to give rise to any other than healthy manifestations, so no error of judgment can ever arise, but as the result of a defective condition of that organ." He proceeds to say:—

"Mr. Hurlbut, an eminent counsellor, and one of the Supreme Judges in the State of New York, in his 'Essays on Human Rights and Political Guarantees,' a work which is well worthy of perusal, promulgates the same doctrine, which on the other hand is very ably controverted by Dr. Hoods.—'Suggestions for the further provision of Criminal Lunatics, by Charles Hood, M. D. London, 1854. pp. 126, 127.'"

the one best sustained by modern induction, and is that which is most consistent, as will presently be seen, with the Christian standard.

§ 82. Independently of the pathological difficulties in the way of the somatic theory, psychological research testifies most strongly against it.(*g*) The mental and moral functions are the immediate products of an independent sphere of organism, and not to be explained by anything lying outside of that sphere. The brain and the nerves have only the physical part of perception and motion, and to some extent the regulation of the functions, to perform; but the soul cannot but be considered as distinct from this activity of the nerves. The somatic theory, which confounds the two, will never be able to make a satisfactory distinction between palsy and imbecility, between convulsions and ravings, between sensuous hallucinations and insanity.(*h*) This theory, therefore, fails in affording support to any practical system of therapeutics. The general experience of modern times confirms the fact that medicines are of very little avail against mental derangements, and that the most essential results are attained by a strictly moral treatment, and corresponding regulation of diet and habits.(*i*)

The psychological theory, at its first inception, split upon the opposite rock, in denying the influence of the physical processes upon mental diseases, in the face of experience. In opposition to the somatists, it was thought necessary to exclude all natural causes from the explanation of the origin of mental affections, and to ascribe them to an act of voluntary self-enthralment, which, in all cases, was to be attributed to some prior moral excess or delinquency incurred with a knowledge of the consequences. But a derangement of mind is not identical with sin. For though every vice, every sin, is an abnormity of the soul, yet every abnormity of the soul is not sin. A lunatic may be, in a human sense, innocent of positive guilt; and, on the other hand, the worst of criminals may retain his sanity. It is impossible to adhere to this doctrine in practice, without reducing the entire treatment of the disease to a system of rewards and punishments; and the vagueness of the idea of freedom and constraint, the impossibility of distinguishing between the moral thraldom of the criminal and that of the sick man, will throw into confusion the entire system of forensic psychology.(*j*) It is equally wrong to derive all diseases of the mind from the passions, although the latter may be important causes, and, in the more advanced stages, symptoms of insanity.(*k*) At the

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(*g*) Siebold, Lehrbuch der Gericht. Med., Berlin, 1847, § 194; L. Krahmer, Handbuch der Gericht. Med., Halle, C. A. Schwetschke, 1851, § 126; Heinroth, Syst. der psychisch-gericht. Med. Leipsic, 1825; Kant, Anthropologie, Königsb. 1798; Metzger's Ger. Med. Abhandl., Königsb. 1803.

(*h*) Leçons Cliniques sur l'Aliénation Mentale, par Falret, leçon 1, p. 8, Paris, 1854.

(*i*) The most thorough of the German advocates of the somatic theory is Friedreich, particularly in his "Historisch-kritische Darstellung der Theorien über das Wesen und den Sitz der psychischen Krankheiten," Leipsic, 1836.

(*j*) Etudes Medico-Psychologiques, M. Renaudin, p. 166, art. 30, Sur la responsabilité morale, Paris, 1854; Leçons Cliniques de M. Falret, p. 11, discours d'ouverture, Paris, 1854; Manuel Complet de Médecine Légale, par J. Briand, sect. troisième, art. iii. p. 560, Paris, 1852.

(*k*) Heinroth is the leading representative of the psychological theory. See his "Lehrbuch der Seelenkrankheiten," Leipsic, 1818, and his "System der psychisch-gerichtlichen Medicin," Leipsic, 1825. Dr. Mayo, in his "Medical Testimony on Lunacy," goes some distance in the same direction; and, as has been seen, very justly

same time, as will hereafter be more fully shown,(*kk*) there is in the mass of cases of insane convicts such an amount of responsibility as to require the infliction of a degree of punishment which, though different from that imposed on the sane, will yet be accompanied with a corrective as well as a preventive discipline.

§ 83. The *intermediate* theory is that to which the soundest psychologists now tend. "In the first place," says Sir William Hamilton, "there is no good ground to suppose that the mind is situated solely in the brain, or exclusively in any one part of the body. On the contrary, the supposition that it is really present wherever we are conscious that it acts—in a word, the Peripatetic aphorism, the soul is all in the whole and all in every part—is more philosophical, and consequently more probable, than any other opinion. It has not been always noticed, even by those who deem themselves the chosen champions of the immortality of the soul, that we materialize mind when we attribute to it the relations of matter. Thus, we cannot attribute a local seat to the soul without clothing it with the properties of extension and place, and those who suppose this seat to be but a point only aggravate the difficulty. Admitting the spirituality of mind, all that we know of the relation of soul and body is that the former is connected with the latter in a way of which we are wholly ignorant; and that it holds relations, different both in degree and kind, with different parts of the organism. We have no right, however, to say that it is limited to any one part of the organism; for even if we admit that the nervous system is the one to which it is proximately united, still the nervous system is itself universally ramified throughout the body; and we have no more right to deny that the mind feels at the finger-points, as consciousness assures us, than to assert that it thinks exclusively in the brain. The sum of our knowledge of the connection of mind and body is, therefore, this: that the mental modifications are dependent on certain corporeal conditions; but of the nature of these conditions we know nothing. For example, we know, by experience, that the mind perceives only through certain organs of sense, and that through these different organs it perceives in a different manner. But whether the senses be instruments, whether they be media, or whether they be only partial outlets to the mind incarcerated in the body, on all this we can only theorize and conjecture."(*l*)

§ 84. The intermediate theory has at least not been rejected by standard Christian theologians. "The resurrection," says Bishop PEARSON, "is not only in itself possible, so that no man with any reason can absolutely deny it, but it is also upon many considerations highly probable, so that all men may very rationally expect it. If we consider the principles of humanity, the parts of which we all consist, we cannot conceive this present life to be proportionable to our composition. The souls of men, as they are immaterial, so they are immortal; and being once created by the Father of spirits, they receive a subsistence for eternity; the body is framed by the same God to be a com-

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argues in favor of a discrimination of punishment between the malicious and the unconscious insane criminal. Mayo, &c., 50, 51.

(*kk*) *Post*, §§ 259–276.

(*l*) Sir William Hamilton's Lectures on Metaphysics, p. 356.

panion for his spirit, and a man born into the world consisteth of these two. Now, the life of the most aged person is but short, and many far ignobler creatures of a longer duration. Some of the fowls of the air, several of the fishes of the sea, many of the beasts of the field, divers of the plants of the earth, are of a more durable constitution and outlive the sons of men. And can we think that such material and mortal, that such inunderstanding souls, should by God and nature be furnished with bodies of so long permansion, and that our spirits should be joined unto flesh so subject to corruption, so suddenly dissolvable, were it not that they lived but once, and so enjoyed that life for a longer season, and then went soul and body to the same destruction, never to be restored to the same subsistence? But when the soul of man, which is immortal, is forced from its body in a shorter time, nor can by any means continue with it half the years which many other creatures live, it is because this is not the only life belonging to the sons of men, and so the soul may at a shorter warning leave the body which it shall resume again."(*m*)

To this may be added the authority of Isaac Taylor, who, in his "Physical Theory of another Life," after pointing out how completely the question whether the human soul is ever actually or entirely separated from matter is passed over by St. Paul, as an inquiry altogether irrelevant to religion, continues: "Let it be then distinctly kept in view that although the essential independence of mind and matter, or the abstract possibility of the former existing apart from corporeal life, may well be considered as tacitly implied in the Christian's scheme, yet that an actual incorporeal state of the human soul, at any period of its course, is not involved in the principles of our faith any more than is explicitly asserted. This doctrine concerning what is called the immortality of the soul should ever be treated simply as a philosophical speculation, and as *unimportant* to our Christian profession."(*n*)

"We are unable," says Pascal, "to conceive what is mind; we are unable to perceive what is matter; still less are we able to conceive how these are united; yet this is our proper nature."

"Such," says President Edwards, the first metaphysician of his country, and perhaps the first of his age, "seems to be our nature, and such the laws of the union of soul and body, that there never is, in any case whatsoever, any lively and vigorous exercise of the will or inclination of the soul without some effect upon the body in some alteration of the motion of its fluids, and especially of the animal spirits. And, on the other hand, from the same laws of the union of the soul and body, the constitution of the body and the motion of its fluids may promote the exercise of the affections, but yet it is not the body but the mind only that is the proper seat of the affections. The body of man is no more capable of being really the subject of love or hatred, joy or sorrow, fear or hope, than the body of a tree, or than the same body of man is capable of thinking and understanding. As it is the soul only that has ideas, so it is the soul only that is pleased or displeased with its ideas. As it is the soul only that thinks, so it is the soul only that loves or hates, rejoices

(*m*) Pearson on the Creed, ed. 1853, p. 558.
(*n*) Carpenter, Mind and Matter, by J. G. Millingen, M. D., M. A., pp. 128, 129, 130.

or is grieved at what it thinks of. Nor are these motions of the animal spirits and fluids of the body anything properly belonging to the nature of the affections, though they always accompany them in the present state, but are only effects or concomitants of the affections that are entirely distinct from the affections themselves, and no way essential to them; so that an unbodied spirit may be as capable of love and hatred, joy or sorrow, hope or fear, or other affections, as one is that is united to a body."(o)

§ 85. *Effect of intermediate theory on insane responsibility.*—The intermediate theory, as above stated, relieves the doctrine of criminal responsibility of some of its chief difficulties. If the somatic theory be correct, then a criminal propensity is a physical malformation, for which the defendant is no more responsible than he is for a malformation of the limbs. A squint in morals, to carry out a metaphor of Chief Justice GIBSON, is no more a fault than a squint of the eyes. Such a criminal may be prevented from future misconduct. But neither punitive nor reformatory discipline can be applied to him; the first because it is unjust, the second because it is hopeless.

On the other hand, if the psychological theory be correct, insanity, by becoming an organic intellectual lesion, is as much withdrawn from the causal power of the will as it is on the somatic basis. It cannot be reached by penal discipline, for by the very hypothesis on which it is framed it rises above the action of the nervous and corporeal system. It cannot be reformed by bodily correction; and to attempt, therefore, by such correction to reach it, would be both unjust and nugatory.

The intermediate theory, however, teaches us that insanity (with the exception of idiocy and certain hereditary and organic types) is (1) in a large measure the result of nervous and physical causes, often voluntarily induced, partly by the negligence and partly by the misconduct of the patient himself; and (2) that in such cases, by being made the subject of penal discipline, it may often be prevented or restrained. The remaining difficulty is to determine what are the cases to which such penal discipline is applicable. And here the analogies of the common law give us a safe test. Where *mania-à-potu* results from drink, the party becomes irresponsible. Where, however, he commits a crime in a drunken fit, this drunkenness avails him nothing, unless to relieve him from the implication of premeditated malice or complex fraud. Thus, when the fatal assault is conceived by a party when intoxicated, he is not presumed to act with that premeditation or that specific intention to take life which is necessary to subject him to capital punishment. So it is in insanity. Mania, when a permanent disorder of the intellect, by incapacitating the party from reasoning on the particular issue, relieves him from criminal responsibility. But a mere monomania, unaccompanied by intellectual lesion, cannot, for penal purposes, be considered else than voluntary passion. It may be invoked to lower the grade from murder in the first to murder in the second degree, by depriving the intent of that coolness and speciality necessary to make up the former offence. But it can never be the basis of an acquittal on the ground of irresponsibility.

(o) Edwards on Religious Affections, p. 15.

II. How mental unsoundness is to be detected.

1st. *By whom.* § 86.
2d. *At what Time.* § 96.
(1.) Time of act. § 95.
(2.) At trial. § 97.
(3.) At and after sentence. § 98.
3d. *By what Tests.* § 100.
(1.) Physiognomy. § 100.
(2.) Bodily health and temperament. § 102.
(3.) Hereditary tendency. § 107.
(4.) Conversation and deportment. § 110.
(5.) Nature of act. § 112.
(*a.*) Its insensibility. § 112.
(*b.*) Its incongruity with antecedents. § 113.
(*c.*) Its motivelessness. § 114.
(*d.*) Its inconsequentiality. § 115.

1st. *By whom.*

§ 86. It has already been stated that the experience of medical experts, like that of experts in all other branches of science,(*r*) is part of the common law of the land. The illustrations of this principle are very numerous. Thus, if a question involving shipbuilding is the subject of judicial investigations, the testimony of a shipwright as to the meaning of terms of art, as well as to the general laws of the craft, enters into the basis upon which the case is tried. And if there has been any difficulty in the reception of the result of medical experience, when insanity is at issue, it has arisen from that occasional conflict of opinion among medical witnesses which the highest professional authorities have so frequently united in deploring.(*s*)

§ 87. "Certain recent actions at law in this country," says Dr. Hartshorne, "in which heavy damages have been incurred by parties charged with arresting and detaining an alleged lunatic against the will and interests of the latter, have led to greater circumspection, not only among the friends of lunatics, in the procurement of proper medical certificates and other forms required for the admission of insane patients into hospitals, but among the

(*r*) "C'est aux lumières et à la probité des médécins que doit être *exclusivement* réservé le droit de juger chaque espéce de aliénation mentale, et de donner aux tribunaux les seuls élémens sur lesquels puissent être raisonnablement fondés des jugemens équitables."—*Méd. Lég.*, M. Orfila, tome i. p. 360. Paris, 1848.

(*s*) Lettsomian Lectures on Insanity, by Forbes Winslow, M. D., D. C. L., late President of the Medical Society of London, &c.; London, John Churchill, New Burlington Street. Medical Testimony and Evidence in Cases of Lunacy, being the Croonian Lectures delivered before the Royal College of Physicians in 1853, with an essay on the conditions of mental soundness, by Thomas Mayo, M. D., F. R. S.; London, John W. Parker & Son, West Strand, 1854. Marc, Die Geisteskrankheiten, in Beziehung auf die Rechtspflege, i. p. 8. And see also particularly Mittermaier's late very interesting essay, "Die Stellung und Wirksamkeit der Sachverständigen in Strafverfahren," in "Archiv für Preussisches Strafrecht," Berlin, 1853.

medical advisers in the preliminary examinations of the patients, and the filling up of their certificates. The principal hospitals for the insane of the United States, have printed forms and obligations, which are furnished to the friends of patients to be filled up and signed according to the law of the State and the rules of the hospital. The form of the medical certificate generally requires the patient to have been seen and examined by the physician signing, on the day on which the certificate is dated. In all cases the certificate is expected to apply only to the actual condition of the patient at the time of signing, and to be used without delay in order to be available. The medical certificate must always be accompanied by a formal application for admission of the patient, signed by a responsible guardian, near relative, or friend. These papers have also annexed to them a series of questions relating to the past history and existing condition of the patient, the peculiar symptoms of the case, and the probable cause of the attack; which questions are to be answered by the friends and relatives, and the attending physician. Some hospitals require the signature of two physicians to the medical certificate, neither of them, of course, being connected with the hospitals applied to. The State Lunatic Hospital of New Jersey requires the medical certificate to be formally deposed to by two physicians before a magistrate. Patients sometimes obtain their discharge on a writ of habeas corpus, by proving their apparent fitness to be at large, but are generally removed by friends or discharged when sufficiently recovered, at the discretion of the superintendent. We are not aware of any legal restriction in this country on the liberation of insane patients, except in cases of homicidal or otherwise dangerous lunatics, who have been confined by order of a magistrate, or by a court of law. Such patients can only be released by an authority similar to that which first committed them. There are patients of this class now in durance at the Eastern State Penitentiary of Pennsylvania, and in different State Asylums."(*y*)

§ 88. It is well to keep in mind the suggestions of Hoffbauer in regard to the importance of an adaptation, by the inspecting physicians, of his own method of examination to the character of the subject. The uneducated and the refined, the bashful, timid, and retiring, and the cunning, insolent, and hardened, the eccentric, the victim of fixed ideas, and the lunatic, each requires a different style of treatment. The physician must work into the heart of the ignorant man by reference to objects palpable to the sense, and must address the man of education in the spirit which animates him. He must approach the bashful, the timid, and the morose with cordiality and affability, and exercise practical tact, circumspection, and adroitness, in conversing with the cunning, the hardened, and the insolent, impressing them with respect for his personal and mental qualifications. On the whole, the tone of the subject must regulate the tone of the examiner. But where one style of treatment is found of no avail, recourse may be had to the opposite one. Where the patient sits immovable as a statue, without answering any question addressed him,

(*y*) Taylor's Med. Jurisprudence, by Hartshorne, Phil. 1853, 556, 562.

which often occurs in cases of deeply-seated melancholy, further questions should not be asked, but observation alone resorted to.(*z*)

§ 89. That a man is of sound mind, will generally be sufficiently manifest to a prosecuting officer of discretion; but whether a man is really, or only apparently deranged, is a question which cannot be decided with the certainty belonging to science except by a physician; nor is it possible, without a thorough knowledge of psychological medicine, to pronounce upon the influence exercised by specific forms of disease upon given actions.(*a*)

§ 90. It should not be forgotten, however, that it is of much importance in the diagnosis of insanity, that the proper legal and medical functionaries should act *in common*. Written explanations are here of much less value than oral intercourse, where a few words will often suffice to remove a difficulty, to correct an error, or to supply an omission. In visiting a deranged culprit for this purpose, the prosecuting officer should always invite the physician to accompany him. They may then alternately converse with the accused, whereby both the morbid and criminal peculiarities of the subject will be clearly unfolded to them both. It is well established that a man of unsound mind will act very differently, according as he views the persons before whom he stands with fear, respect, or confidence. It is sometimes advisable to invite the physician's attendance at an official hearing, where, under the semblance of a mere occasional and unofficial companion, he may make a diagnosis the more accurate because unsuspected.

§ 91. It is not to be denied that a lay observer, or an unassisted judge or jury, may be able to distinguish a case of fully developed and clearly manifested insanity; but, aside from the necessity of a knowledge of all the particular relations existing between a given state of disease and a given act, there can be no proper foundation for the infliction of punishment in any case, where the judgment of which it is the execution is not based on the greatest attainable amount of certainty. But this certainty can be no other than that which bears the seal of technical science. Nor will a juryman, if properly tender of his conscience and of public opinion, base his verdict upon other evidence than that of those best able from long training and close attention, to understand the features of the case. In some cases the difference between a scientific, or technical, opinion, and that of a layman, is not so much in the results attained, as in the guarantee afforded by the superior attainments and more minute expertness of the man of science. The declaration of such a man is insured against the possibility of error to the full extent of the protection of science in its present stage of development. *Pro foro* this degree of certainty is sufficient, because it is the highest attainable; but the same cannot be said of any other.(*b*)

(*z*) J. H. Hoffbauer, Die psychischen Krankheiten in Bezug auf die Rechtspflege, Berlin, 31.

(*a*) Notwithstanding Regnault's elaborate disquisition, "Du degré de competence des Médécins dans les questions judicaires relatives aux alienations mentales," &c., Paris, 1828, and notwithstanding the occasional contemptuous remarks of Nisi Prius judges in the hurry and irritation of trial, this position is recognized, as has already been seen, by the uniform practice as well as the recognized theory of the law. See *ante*, § 45, *n*. See also *Marc*, die Geisteskrankheiten in Beziehung auf die Rechtspflege, vol. i. 98.

(*b*) Schürmayer, § 512.

§ 92. The American authorities falling under this head may be considered as establishing the following points:—

§ 93. (*a.*) Professional men, experts in psychological medicine, who have personally examined the party, may be asked whether he was insane or not.(*c*) Such, in fact, has been the uniform and undisputed course in practice in all cases where medical testimony is taken on this point. The English rule is equally definite.(*d*)

§ 94. (*b.*) Even though the witness has not had the opportunity of personal inspection, he may be asked for his opinion on an assumed state of facts, or, in several of the States, upon the evidence given on trial, if he heard all of it, viewing it as a case stated.(*e*) In Massachusetts and New York, however, this position is limited, and there, as well as in England, the settled opinion now seems to be that medical witnesses can only be asked their opinion on the whole case when the facts are admitted, or not disputed; but that when there is a conflict as to testimony, such a question cannot be put; these courts holding, at the same time, the right to ask their opinion on a supposed state of facts.(*f*) But, however ascertained, medical opinion enters into the merits of the case. It has been already shown that the common law consists of the wisdom of the particular age applied to the exigencies of the particular case; and in this sense it includes not only the decisions of the courts, but the opinions of experts on the particular branches to which their attention has been devoted.(*g*) Thus the evidence of persons acquainted with navigation is admissible upon the facts as developed in evidence in cases of collision,(*h*) or loss from alleged unseaworthiness;(*i*) of persons conversant with handwriting, as to whether a

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(*c*) Com. *v.* Rogers, 7 Metc. 500; M'Allister *v.* State, 17 Alab. 434; Clark *v.* State, 12 Ohio, 483.

(*d*) R. *v.* Searle, 1 Mood. & Rob. 75; R. *v.* Offord, 5 C. & P. 168. See a learned note on this point in 7 Bost. Law Rep. 692. M. Briand (Méd. Lég. 552, Paris, 1852) says: "Appelés à faire un rapport sur l'état moral d'un prevenu ou d'un accusè, les médecins ne s'immiscent point alors dans les fonctions des juges ou des jurées, mais ils eclairent la conscience des uns et des autres." See also Manuel de Méd. Leg. de M. Orfila, t. i. 399, Paris, 1848. In Elwell's Malpractice and Medical Evidence, chapters 18 and 19, this topic is ably treated.

(*e*) See Com. *v.* Rogers, 7 Metc. 500; People *v.* Lake, 2 Kernan (N. Y.), 358; People *v.* Thurston, 2 Parker, C. R. 49; Negro Jerry *v.* Townshend, 9 Md. 145; M'Allister *v.* State, 17 Alab. 434; Clark *v.* State, 12 Ohio, 483; Com. *v.* Wood, MSS. Phil. 1836; Com. *v.* Mosler, MSS. Phil. 1845.

(*f*) In New York, a medical witness who had been present during a trial for murder was asked by the defendant what, in his opinion, on the facts stated, was the state of the defendant's mind on the night of the killing. The court excluded the evidence. But the defendant was allowed to ask what the opinion of the witness was on a supposed case corresponding to the testimony; and held, further, that the testimony might be read to him, and his opinion asked, supposing that state of affairs to exist. Held, that here was no ground for exception. People *v.* McCann, 3 Parker, C. R. (N. Y.) 272. This seems now to be the opinion of the Supreme Court of Massachusetts, Woodbury *v.* Goodyear, 7 Gray, 467; and of the U. S. Circuit Court in that State, U. S. *v.* McGlue, 1 Curtis, 1. See the restriction of medical witnesses to hypothetical cases attacked in the Boston Law Reporter for July, 1859, and defended in Elwell's Malpractice and Medical Evidence, p. 310. The English cases to the point in the text are R. *v.* Wright, R. & R. 451; R. *v.* Frances, 4 Cox, C. C. 57; Opinion of Judges, *post*, *n.* (*r*); though see *contra*, R. *v.* Searle, 1 Mood. & Rob. 75; R. *v.* Offord, 5 C. & P. 168.

(*g*) See on this point *ante*, § 45, *n.*

(*h*) Malton *v.* Nesbit, 1 C. & P. 70; Fenwick *v.* Bell, 1 C. & K. 312; Thornton *v.* Royal Exch. Co., Peak, 25.

(*i*) Beckwith *v.* Sydebotham, 1 Camp. 116.

paper was forged;(*j*) of seal engravers, as to the genuineness of an impression;(*k*) of artists, as to whether a picture is an original or a copy;(*l*) of postmasters, as to the genuineness of a post mark;(*m*) of scientific engineers, as to the effect of an embankment on a harbor;(*n*) of practical surveyors, as to whether certain marks were intended as boundaries or terriors;(*o*) and of naturalists, as to whether the habits of certain fish were such as to enable them to overcome certain obstructions in a river.(*p*) And so nothing is more common than to examine a surgeon as to whether death resulted from natural causes, or from certain artificial agencies which may be the subject of inquiry.(*q*) On this principle the opinion of medical men as to whether particular symptoms, supposing them to exist, constitute insanity, is part of the law of the case. It should be observed, however, as the cases in the note show, that the witness is not to be asked whether the evidence shows that the patient was insane—for that, indeed, would be taking the jury's place—but whether, if a certain state of facts be true, the inference of insanity would result therefrom.(*r*)

(*j*) Revett *v.* Braham, 4 T. R. 497; Hammond's Case, 2 Greenl. 33; Moody *v.* Rowell, 17 Pick. 490; Com. *v.* Carey, 2 Pick. 47; Lyon *v.* Lyman, 9 Conn. 55; Hubley *v.* Vanhorne, 7 S. & R. 185; Lodge *v.* Phipher, 11 S. & R. 333.

(*k*) Folkes *v.* Chadd, 3 Dougl. 157. (*l*) Ibid.

(*m*) Abbey *v.* Lill, 5 Bing. 299. (*n*) Folkes *v.* Chadd, 3 Dougl. 157.

(*o*) Davis *v.* Mason, 4 Pick. 156. (*p*) Cottrill *v.* Mason, 3 Fairf. 222.

(*q*) See cases quoted in Wharton on Homicide, 241–4; and see also 1 Stark. Ev. 154; Phil. and Am. on Ev. 899; 1 Green. on Ev. § 440.

(*r*) See 3 Greenlf. on Ev. § 5. In answer to an inquiry of the House of Lords, whether "a medical man, conversant with the disease of insanity, who never saw the prisoner previously to the trial, but who was present during the whole trial and the examination of all the witnesses, can be asked his opinion as to the state of the prisoner's mind at the time of the commission of the alleged crime, or his opinion whether the prisoner was conscious at the time of doing the act that he was acting contrary to law, or whether he was laboring under any and what delusion at the time," the English judges replied: "We think the medical man, under the circumstances supposed, cannot in strictness be asked his opinion in the terms above stated, because each of those questions involves the determination of the truth of the facts deposed to, which it is for the jury to decide, and the questions are not mere questions upon a matter of science, in which case such evidence is admissible. But when the facts are admitted, or not disputed, and the question becomes substantially one of science only, it may be convenient to allow the question to be put in that general form, though the same cannot be insisted on as a matter of right."

In this country, as has been seen, the stricter practice, when medical men are examined as experts, is to ask their opinion as to a hypothetical state of facts. *Ante*, note (*e*). If they happen to have been present during the whole trial, they may be asked their opinion as to the particular facts, supposing them to be true; but the determination of the truth or falsity of the evidence itself should be reserved exclusively for the jury.

"The opinions of professional men on a question of this description," says Chief Justice Shaw, "are competent evidence, and in many cases are entitled to great consideration and respect. The rule of law, on which this proof of the opinion of witnesses, who know nothing of the actual facts of the case, is founded, is not peculiar to medical testimony, but is a general rule, applicable to all cases, where the question is one depending on skill and science in any particular department. In general, it is the opinion of the jury which is to govern, and this is to be formed upon the proof of facts laid before them. But some questions lie beyond the scope of the observation and experience of men in general, but are quite within the observation and experience of those whose peculiar pursuits and profession have brought that class of facts frequently and habitually under their consideration. Shipmasters and seamen have peculiar means of acquiring knowledge and experience in whatever relates to seamanship and nautical skill. When, therefore, a question arises in a court of justice upon that subject, and certain facts are proved by other witnesses, a shipmaster may be

(*c*.) The better opinion has been that witnesses, who are not experts, who have for a given time had the opportunity of observing the patient, may be asked their opinion as to his sanity.(*s*) Such witnesses cannot, of course, be

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asked his opinion as to the character of such facts. The same is true in regard to any question of science, because persons conversant with such science have peculiar means, from a larger and more exact observation, and long experience in such department of science, of drawing correct inferences from certain facts, either observed by themselves or testified to by other witnesses. A familiar instance of the application of this principle occurs very often in cases of homicide, when, upon certain facts being testified to by other witnesses, medical persons are asked whether in their opinion a particular wound described would be an adequate cause, or whether such wound was, in their opinion, the actual cause of death, in the particular case. Such question is commonly asked without objection; and the judicial proof of the fact of killing often depends wholly or mainly upon such testing of opinion. It is upon this ground that the opinion of witnesses who have long been conversant with insanity in its various forms, and who have had the care and superintendence of insane persons, are received as competent evidence, even though they have not had opportunity to examine the particular patient, and observe the symptoms and indications of disease at the time of its supposed existence. It is designed to aid the judgment of the jury in regard to the influence and effect of certain facts which lie out of the observation and experience of persons in general. And such opinions, when they come from persons of great experience, and in whose correctness and sobriety of judgment just confidence can be had, are of great weight, and deserve the respectful consideration of a jury. But the opinion of a medical man of small experience, or of one who has crude and visionary notions, or who has some favorite theory to support, is entitled to very little consideration. The value of such testimony will depend mainly upon the experience, fidelity, and impartiality of the witness who gives it.

"One caution in regard to this point it is proper to give. Even where the medical or other professional witnesses have attended the whole trial, and heard the testimony of the other witnesses as to the facts and circumstances of the case, they are not to judge of the credit of the witnesses, or of the truth of the facts testified to by others. It is for the jury to decide whether such facts are satisfactorily proved. And the proper question to be put to the professional witnesses is this: If the symptoms and indications testified to by the other witnesses are proved, and if the jury are satisfied of the truth of them, whether in their opinion the party was insane, and what was the nature and character of that insanity; what state of mind did they indicate; and what they would expect would be the conduct of such a person in any supposed circumstances." See 1 M. & Rob. 75; Com. *v.* Rodgers, 7 Metc. 5; Elwell's Malpractice and Medical Evidence, p. 310.

On a trial for murder a medical witness testified that he saw defendant on the evening of the day after the killing, conversed with him, and then thought him deranged; that he thought the insanity was *delirium tremens;* that he knew defendant's habits of drinking, and supposed drinking to be the cause of his insanity; that he had been present and heard all the evidence. The witness then stated, under objection, how long he thought defendant had been in this state of delirium, but was not allowed to state whether, in his opinion, he was in this state on the night of the alleged killing. It was held that this was no error. People *v.* McCaun, 3 Parker, C. R. (N. Y.) 272.

(*s*) Clary *v.* Clary, 2 Iredell, 78; Clark *v.* State, 13 Ohio, 483; Grant *v.* Thompson, 4 Connec. 203; Harrison *v.* Rowan, 3 Wash. C. R. 580; Rambler *v.* Tryon, 7 S. & R. 90; Wogan *v.* Small, 11 S. & R. 141; Morse *v.* Crawford, 17 Vt. 499; Lester *v.* Pittsford, 7 Vt. 158; Gibson *v.* Gibson, 9 Yerger, 329; Potts *v.* House, 6 Georg. 324; Colver *v.* Haslam, 7 Barbour, 374, which case, however, was recorded in Dewitt *v.* Barley, 5 Selden, 371; Baldwin *v.* State, 12 Missouri, 223; De Whitt *v.* Barley, 13 Barbour, 550; Kinne *v.* Kinne, 9 Conn. 102; Norris *v.* State, 16 Alab. 776; Wheeler *v.* Wheeler, 3 Hagg. 574; and see 7 Bost. Law Rep. (N. S.) 696, where these cases are cited.

The opinions of witnesses, not medical men, or experts, and not the subscribing witnesses to a will, cannot be given on the question of the sanity of the testator. [Denio, Willard, and Moore, JJ., dissenting.] Dewitt *v.* Barley, 5 Selden (N. Y.), 371. It is said, however, that the opinion of a witness, acquainted with the person whose capacity is in question, and founded on his own observation, is admissible on the question of sanity or insanity; certainly if the facts on which his opinion rests are also stated. [Per Denio, J.] Dewitt *v.* Barley, 5 Selden (N. Y.) 371.

In Maryland, a witness familiar with the grantor in a deed for a long time, both before and after its execution, may, after testifying to the grantor's state of mind before its execution, be further examined as to acts of insanity subsequent to that period. Negro Jerry *v.* Townshend, 9 Md. 145.

examined as to their opinions on a case stated, or on the facts developed in the case on trial, but only as to the results of their personal observation, just in the same way that a man ploughing on the shore can be examined as to the fact of a ship striking a shoal before him, when he could not be admitted to prove the cause of the disaster. And, on this principle, it was long held admissible to ask subscribing witnesses as to their opinion of the testator's sanity at the time of the execution of the will.(*t*) Lately, however, there has been a disposition to restrict this rule to subscribing witnesses.(*a*)

(*d.*) Books on insanity, and, in fact, scientific books or papers generally, are inadmissible as evidence to the jury.(*b*) Nor can they be read by counsel in their speeches to the jury, unless by consent.(*c*) It has been said in Iowa, however, that a physician can read in his testimony "the views and opinions of distinguished writers,"(*d*) and in England it would seem that a physician may be asked as to the grounds of his judgment, "which may be, in some degree, founded on books as a part of his general knowledge."(*e*) In those States where the jury are, by the Constitution, judges of the law as well as of the fact, such books may, perhaps, be read in addressing the jury as part of the law of the case.

2d. *At what time examinations should be made.*

§ 95. There are three different times in which the conduct of the accused may become the subject of a forensico-psychological investigation: 1, at the commission of the deed; 2, during the trial; and 3, after sentence pronounced. At each of these periods, the judge has a separate point of view from which to regard the state of mind of the defendant, in each the purpose of the inquiry is different, and in each the interrogations to be directed to the physician must be modified accordingly.(*u*)

§ 96. In regard to the first point, the questions to be asked the physician should be, in general, whether a diseased mental state attended the commission of the act, wherein the disease consisted, and whether the mental and moral functions exercised and implicated in the perpetration, were of such a nature that either *a*, there was no consciousness of criminality and no freedom of volition, or *b*, the possibility of such consciousness and spontaneity was excluded, or *c*, both the one and the other were incapable of ascertainment, and must be left in doubt. The practice which has lately grown up, of interrogating as to a conclusion of law (*e. g.* was the defendant capable of distinguishing right from wrong, or was he a free agent), instead of as to a state of facts (*e. g.*

(*t*) Chase *v.* Lincoln, 3 Mass. 237; Poole *v.* Richardson, ib. 330; Rambler *v.* Tryon, 7 S. &. R. 90; Buckminster *v.* Perry, 4 Mass. 593; Grant *v.* Thompson, 4 Conn. 203; Sheafe *v.* Rowe, 2 Lees R. 415; Wogan *v.* Small, 11 S. & R. 141.

(*a*) Com. *v.* Wilson, 1 Gray, 337; Cocks *v.* Purdy, 2 C. & K. 270; Dewitt *v.* Barley, 5 Selden, 371.

(*b*) Com. *v.* Wilson, 1 Gray, 338; Collier *v.* Simpson, 5 C. & P. 73; Cocks *v.* Purdy, 2 C. & K. 270; Gehrke *v.* State, 13 Texas, 568; Carter *v.* State, 2 Carter, 617.

(*c*) Boston Law Reporter, May, 1854, p. 9.

(*d*) Bowman *v.* Woods, 1 Iowa R. 441.

(*e*) Collier *v.* Simpson, 5 C. & P. 73.

(*u*) See Schürmayer, § 516, from whence this head is generally drawn.

was he laboring under mental disease, and if so, what), is not only false in theory, but pernicious in result.

§ 97. The *second* period of time becomes of particular interest in our American Jurisprudence, from the fact that when a party alleged to be insane is put on his trial, if insanity be pleaded, the jury are specially sworn to determine the preliminary issue whether the defendant be insane *at the time of trial*. If the fact be found in his favor, he is confined under special sanctions. If otherwise, the trial proceeds on the main issue.

§ 98. The third period of time, at which the state of a culprit's mind is open to medical investigation, is after the close of the trial, and before the execution of the sentence. A man of unsound mind is incapable of understanding the justice of his sentence, or of recognizing a punishment in the evil inflicted upon him. In many cases also the evil will aggravate his disease. For all these reasons it is necessary to be certain that a convict is so far in the possession of all his faculties, that the object of the law in subjecting him to punishment will be answered. The interrogations to be submitted to the physician are to be framed upon this simple principle; and it is self-evident that only such derangements will here come in question as are clearly manifest, and as clearly exclude the possibility of the prisoner's understanding the reason of his punishment.

§ 99. It would be a proper regulation to cause every convict, before undergoing his punishment, to be examined in body and mind by the physician, for the purpose of ascertaining his capacity for the ordeal. Even where the general fitness of the subject is undoubted, there are frequently personal defects which require attention in the treatment of the prisoner during confinement. In several of the German States this precaution is observed—where a convict is found to be insane, he must be subjected to the proper treatment. If a cure is effected, the question whether he is now able to sustain the punishment without danger of relapse or other injury, is to be decided by the forensic physician, upon a careful investigation of all the symptoms and attendant circumstances.

3d. *By what Tests.*

(1.) *Physiognomy.*(*v*)

§ 100. The general questions in relation to feigned insanity are noticed under a subsequent head.(*vv*)

"Close attention," says Schürmayer,(*w*) "should be first directed to the entire exterior of the subject, his posture, his motions, his gestures, his eye,

(*v*) The features of the face, says Falret, change at each instant or constantly preserve the same expression; the lips, the cheeks, the nostrils, the eyebrows, the eyelids, frequently show convulsive movement; it is the same with regard to the muscles of the eye, and under the influence of these convulsions, the look is troubled, bewildered and unsteady. Leçons Cliniques sur l'Alienation Mentale, M. Falret, huitième leçon, p. 219. Paris, 1854; see also Orfila, Med. Leg. i. p. 379. Paris, 1848.

(*vv*) *Post*, § 127.

(*w*) Gerichtliche Medicin, § 529.

his words, his intonation, and above all the first impression produced upon his mind by the appearance of the physician. What most distinctly characterizes a mental disease, and is never misunderstood by a skilful physician, is the physiognomy of such a patient. The eye of a madman is the mirror of his soul. He lacks the calm unobstructed gaze peculiar to the sane, untouched by passion or excitement." "Look," says Heinroth,(*x*) "upon the cunning leer of a lunatic, the savage glare of a maniac, the lack-lustre eyes of a splenetic, or the meaningless stare of an imbecile; such things cannot be counterfeited."(*y*)

The *form of the skull* is often peculiar in every description of mental disease, but is particularly noticeable in the case of Cretins and natural fools.

§ 101. The expressions of the eye(*z*) and of the nose(*a*) have been very capably exhibited by two eminent physiognomists. The latter feature has been examined with peculiar ability by Hoefling.(*b*) "In the apparently joyous countenance of a laughing madman," he tells us, "the upward traction of the sides of the nose, nevertheless, indicate unmistakably the presence of pain, and this expresses much of the physiognomic peculiarity of such unfortunates.(*c*) In like manner the simple unmeaning smile of imbecility is marked by the form and shape of the nose, which, with its downward, circular openings, and the tension of the skin on the peak, expresses a torpor, while in the laugh of a sane man the nostrils contract, and become elongated, without a departure of the septum from its horizontal position." The mouth of the simpleton twitches with a constant unmeaning smile, accompanied with a low, inarticulate and thoughtless mumble, and the imbecile is almost always found, sitting or standing, with parted lips.(*d*) "With many," says Schürmayer, "the mouth is constantly in motion, as if they were talking to themselves. In the paroxysms of mania there is a convulsive distortion or contraction of the mouth. Receptivity for certain external impression is generally low, particularly in the case of impressions accompanied with pain,(*e*) of cold, heat, and certain medicines."

(*x*) System der gerichtlich psychischen Medizin. Leipsic, 1825, p. 343.

(*y*) Drawings, very well executed, are to be found in Morrison's Outlines of Mental Diseases. London, 1829, and in Esquirol, *Des Maladies Mentales*, Paris, 1838.

(*z*) Loebels, Grundriss der Semiologie des auges. Jena, 1817, p. 27.

(*a*) Hoefling, in Caspar's Wochenschrift, 1834. (*b*) Ibid.

(*c*) "To represent the prevailing character and physiognomy of a madman, the body should be strong and the muscles rigid and distinct, the skin bound, the features sharp, the eye sunk; the color of a dark brownish yellow tinctured with sallowness, without one spot of enlivening carnation; the hair sooty black, stiff and bushy, or of a pale, sickly yellow with wiry hair."—*Anatomy of Expression*. Sir Charles Bell, London, 1844.

"His burning eye whom bloody strokes did stain,
Stared full wide and threw forth sparks of fire;
And more for rank despight than for great pain,
Shak'd his long locks, colored like copper wire,
And bit his tawny beard to show his raging ire."
[*Faery Queen*, Book ii. canto 4, v. 15.]

(*d*) Danz, Allgemeine Medizinische Zeichenlehre. Heinroth's edition. Leipsic, 1812, p. 353.

(*e*) Compare Friedreich, Handbuch der Allgemeine's Pathologie der psychischen Krankheiten. Erlangen, 1839, p. 121.

(2.) *Bodily Health and Temperament.*

§ 102. Hereditary tendency to insanity will in a moment be considered. Under the present head, it is proper to notice the importance of the attention of the medical examiner being turned to temperament, disposition, and age; in the case of females, to the development of the functions of menstruation, pregnancy, delivery, suckling, to mental characteristics, powers, and habits; to the condition in life and profession; to the questions of rest and exercise, sleep, and watching; to excessive evacuations, particularly if connected with sexual gratifications; to sexual abstinence; to bodily injuries, particularly in the head, inflammatory affections of the brain or its membranes, diseases of the heart, hæmorrhoids, obstructions of the abdomen,(*f*) and to cutaneous diseases.

§ 103. To what extent insanity is accompanied with physical disorganization, is illustrated by a case mentioned by Wigan in his remarkable work on the duality of the mind.(*g*) "The gentleman held a situation in which he had many younger persons under him. I purposely leave the designation obscure. He had risen to the head of the office by long and exemplary services. He was a widower, and had a considerable family, all of whom, however, died in their youth. He exercised a parental control over his subordinates, and was extremely respected by every one who knew him. His salary was ample, his excessive benevolence had, however, always kept him poor, but as his style of living did not imply the expenditure of more than half his income, he had the reputation of wealth. Gradually, towards the age of sixty, this gentleman became garrulous and light in his conversation, and the others in the office suspected him to have been drinking. He had many rebuffs from the persons under his command, but this in no degree changed the indecorous levity of his conversation, which had formerly been remarkably dignified, and as reserved as was compatible with his excessive benevolence of disposition. Months and months passed on, his language became gradually worse, and at last was of the most depraved obscenity. This shocked and disgusted his juniors, and he was seriously threatened with exposure by them. The propensity was checked for a while, but after repeated offences and repeated forgiveness by the young men, they made a formal complaint to his superiors. The offender was taken to task very seriously, but, as the young men had given rather a lenient representation of his conduct, he was permitted one more trial, with the assurance that his next offence would be followed by dismissal. There was soon an opportunity of putting the threat in force, for his conduct and conversation became more and more gross and disgusting. He was dismissed. Having made no provision, he suddenly found himself utterly destitute, but did not make known his position. He packed a bundle of necessary clothes, put in his pocket whatever money and trinkets he possessed, and wandered about the country without aim or object. Every one lost sight of him for two or three months, when he was found in a remote part of the kingdom *literally dead*

(*f*) "Unterleibstockungen," Schürmayer.
(*g*) A new view of Insanity, &c., by A. L. Wigan. London, 1844, p. 81.

on a dunghill, where it is supposed he had laid himself down for warmth; his money was gone, and from the state of the stomach and intestines, it is probable that he had died of want of food as the immediate cause, but on examining the interior of the skull, there was found extensive softening and disorganization of the left cerebrum, and the other was not free from disease. He could not have lived long; though, under proper care, the disease would not have been immediately fatal."(*h*)

A diminution of sensibility, says M. Falret, in his late work,(*i*) is not of common occurrence in mental diseases, its exaltation being much more frequent. It is proper, however, to state that deranged persons are generally as sensible of temperature and impressions as persons ordinarily are. Lesions of the sensibility, however, are observable in all kinds of insanity, and especially in those cases in which mystical ideas are predominant, in demonomania and paralytic insanity. General insensibility has been known to take away from some madmen the sense of their own existence. M. de Foville cites the example of a man who thought he had died at the battle of Austerlitz, at which he received a severe wound. His insanity consisted in his inability to recognize and feel his own body. When any one inquired after his health, it was customary for him to reply, "You ask me how father Lambert is? but father Lambert is no more, he was killed by a bullet at Austerlitz. That which you see here is not him, but a machine which they have made to resemble him, and which is very badly made, so try and make another." Never, in speaking of himself, did he say "me" (moi), but "that" (cela). This man fell several times into a complete state of immobility and insensibility, which lasted several days. Sinapisms and blisters applied to guard against these accidents, never produced the least symptom of pain. He often refused to eat, saying, "ça n'avait point de ventre."

Esquirol was unable to discover any sign of pain in passing a pin through the skin of the arm of a demonomaniac, who asserted that he no longer felt anything, and who imagined that his body had been carried away by the devil.

In regard to anomalies of general sensibility associated with no illusion, there are madmen who appear insensible to the ordinary causes of pain. Esquirol speaks of an idiot girl who was in the habit of scratching a lump she had upon her cheek, and did not stop until she had perforated it, and, after having performed this perforation, she enlarged the wound by continually pulling at it with her finger. Deranged persons often cut themselves in different parts of the body without appearing to suffer. But the greatest phenomenon of insensibility is the indifference with which persons afflicted with insanity support *cold*. They have been known to expose themselves in the open air, to sleep upon the ground, flagstones, and the floor, when the ice and snow caused persons warmly clad to shiver. And impru-

(*h*) Generally of all the causes of mental alienation, the most frequent, without doubt, are cerebral affections or some alteration of the encephalic organ, and perhaps we should agree with Haslam in saying, that the primitive cause of mental derangement is *always* to be found in these alterations.—*J. Briand, Méd. Lég.*, p. 544. Paris, 1852.

(*i*) Leçons Cliniques de l'Alienation Mentale, par M. Falret. Septième leçon, p. 185, Paris, 1854.

dences like these appear to have a less dangerous influence upon the insane than upon others. This fact, however, has been much exaggerated, and in many instances the ordinary effects produced by cold, are observable in the deranged. These unfortunates are so exposed to freezing, that in many establishments there is an express law to visit, morning and evening, and wrap in flannel the feet of those whose condition causes these dangerous consequences to be dreaded.(*j*)

§ 104. Hunger and thirst are usually quite vivid, digestion varies, while the bowels are almost invariably obstructed. The skin is usually dry, rough, and inactive. The presence of almost all persons of unsound mind is distinguished by a peculiar specific smell.(*k*) Others show themselves equally indifferent to *heat*. There are some who walk and sleep entirely naked, in the sun upon the hottest days, and who can look fixedly, for a long time upon this planet, without being dazzled by it.

The *genital functions* are ordinarily preserved by the insane; sometimes, indeed, their activity is increased, although the mental disease may not be of erotic origin. This super-excitation of the genital organs, independent of physical or moral erotomania, is particularly observable in agitated delirium; whilst in despondent delirium they are inactive, at least if it have not love for a cause or object. The cases are rare, however, where the sexual organs are attacked with insensibility or impotence, except in general paralysis. The aptitude of man and woman for the venereal act and for fecundation is not lost; only in insanity as in sound mind, the rapid succession of ideas, the violence or tenacity of pre-occupations foreign to amorous desires are capable of bringing on an inactivity of the genital functions.

The *pulse* forms no test. M. Jacobi has instituted experiments in a large number of cases of the different forms of mental unsoundness, indicating at the same time the relative pulsations of the several arteries, auscultating the heart, and counting the number of inspirations and expirations. The attempt to deduce a fixed rule, however, was in vain. "I had the vexation," he tells us, "to see that my researches, so conscientiously made, did not fulfil the end I had proposed; and I saw that it was impossible to establish the necessary connection between the different pathological states of the intellect and feelings, and the observations I had collected on the state of the circulation, the respiration, and the temperature of the skin, in the insane."(*l*)

The *secretions*, and particularly the perspiration, are imperfectly performed in the majority of insane cases. In these cases there is a dry skin of an unhealthy color, and the exhalation of a disagreeable smell. They do not grow thin, but even become fat, although eating little, because they perspire badly. They urinate a great deal, and the passage of urine is frequent as is common

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(*j*) "Dans le plus haut degré de la manie les malades oublient leurs besoins, et sentent à peine, ou pas du tout, *la douleur*, *le froid* et *le chaud*."—*Manuel de Méd. Lég.* M. Orfila, tome i. p. 377. Dr. Rush makes insensibility to the weather, particularly cold, a marked test.

(*k*) Compare Hill's Essay on the Prevention and Cure of Insanity. London. 1814. p. 401. Erhard in Wagner's "Beiträgen zur Philosophischen Anthropologie," vol. i. Vienna, 1794, p. 111. Milling's Mentis Alienationum Semiologica Somatica. Bonn. 1828. § 15. Burrow's Commentaries, p. 297.

(*l*) Jacobi, Annales Medico-Psychologiques.

in all nervous disorders. *Constipation* is an almost habitual attendant of the disease.

Without being oppressed, the *respiration* in the insane is very often unequal, hurried, diminished, interrupted, and sobbing. Their breath is often fetid, and this accidental fetidity, an ordinary symptom of all nervous diseases, frequently announces the approach of an attack of melancholy, mania, or hysteria.(*m*)

§ 105. The most interesting symptoms are found in the various abnormities of the sensorial system, as manifested in the excitement, depression, or delirium of one or the other of the senses. An excitement or depression of the sensorial system generally keeps even pace with the mental malady. Before the mental disease breaks out, and while its advent is indicated by mental and moral excitements, an enhanced excitability in the sensorial system becomes perceptible, which, however, where psychical energies are gradually exhausted by the recurrence and violence of the paroxysms, frequently turns to an opposite condition, so that the failing, obtuseness, or loss of one of the senses attends the subsequent progress of the evil. According to Spurzheim,(*n*) the ear is the sense, which, of all others, suffers most among the insane, and there are more deaf than blind among them. The deliria of the senses, which are either illusions, or hallucinations, are found in every form of the disease; they sometimes attack one sense only, sometimes several, and sometimes though rarely, all the senses at once.(*o*)

Esquirol gives it as the result of his experience(*p*) that when the alienation of the mind begins, and sometimes a little earlier, smell and taste have changed, but the deceptions of the ear and the eye generally characterize the fancies of most madmen. The deliria of smell are less frequent than those of the other senses, those of taste are of the most various kind, and those of touch impress the patients with the existence of attributes in bodies other than those which they possess. These deliria frequently give rise to fixed ideas; particular postures, various attitudes and motions, are observed in almost all madmen.

§ 106. A change of moral disposition is one of the first symptoms, other than physical, with which the disease usually makes its appearance. Extreme irritability, proneness to anger, suspicion, concealment, obstinacy and perverseness, are common. In regard to the affections, various abnormal impulses and inclinations are observed. Fondness or aversion to particular persons, without any special reason; disposition to exercise cruelty, murderous desires, a wish to commit arson, or to steal.(*r*) Memory is generally good in refer-

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(*m*) Leçons Cliniques de l'Alienation Mentale, par M. Falret. Septième Leçon. p. 185. Paris, 1854.

(*n*) Beobachtungen ueber den Wahnsinn. Nach dem Englischen und Franzoesischen bearbeitet von Embden, p. 81. See Méd. Lég., M. Orfila, tome i. p. 358. Paris, 1841. Or, Méd. Lég., Briand, p. 540. Paris, 1852.

(*o*) For a full account of the illusions and hallucinations of the senses we would refer the reader to the Leçons Cliniques sur l'Alienation Mentale de M. Falret. 3d, 4th, 5th, 16th lessons. Paris, 1854. Also to the Etudes Medico-Psychologiques sur l'Alienation Mentale, par F. E. Renaudin. Chap. 8th, p. 388. Paris, 1854.

(*p*) Compare Hagan Die Sinnetaunschungen in Bezugauf Psychologie Heilkunde, und Rechtspflege. Leipsic, 1837.

(*r*) See § 192. A deranged person, says Orfila, regards with indifference the dearest objects of his affections, he thinks no more of them or holds them in such aversion as

ence to things occurring during the disease, or to persons with whom the patient was then connected, but defective or mistaken as to things which occurred previously.(*s*) Of the intellectual faculties not all are uniformly in an abnormal state; on the contrary, some functions occasionally improve, thus producing a complex state of madness, on the one hand, and of wit, reflection, and shrewdness, on the other.(*t*) Monomania is also included under this head. There is often a disposition to soliloquize aloud; and to laugh, without a visible reason.

(3.) *Hereditary Tendency.*(*u*)

§ 107. The teaching of observation on this point is, that not only does the existence of insanity in the offspring afford a violent presumption of its ex-

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to repel, injure, and maltreat them. Hatred, jealousy, anger, wickedness, fear, terror, a disgust for life, a desire to destroy and kill, replace the most equal, calm, and softest nature.—*Manuel de Méd. Lég.* M. Orfila. Tome i. p. 382. Paris, 1848.

(*s*) A great many remember things which occur; and after their recovery, they often astonish by remarks which they had made at a time when they seemed most completely deprived of their reason.—*Méd. Lég.* J. Briand, p. 540. Paris, 1852.

(*t*) See cases collected by Friedreich, Handbuch der allgemeinen Pathologie, p. 189. See *post*, § 113.

(*u*) "Although at the first glance," says Renaudin, "man appears to possess an independent existence, isolated from his birth from those who begot him, although there is but little apparent relation between his ripe age and first infancy; it is not the less true that behind the characters peculiar to his individuality, we can discover certain typical signs, some of which betray his nationality and others relate to his family. These typical signs are to be encountered not only in his physical organization, but are also found in his moral idiosyncrasies, and if tradition is of any force as regards manners and customs, inheritance is certainly of great value as relates to the tastes and habits. It is, in fact, manifested in the transmission from generation to generation of the most inveterate maladies, before which art is obliged to confess its weakness; and it is with difficulty prophylactic measures ward off the sad result. In mental alienation, also, experience furnishes us daily proofs of this transmission, of which it is essential to study the mode.

"The question whether this transmission is direct, or results from a predisposition whose development is due to the influence of an occasional cause, or, in other words, whether by itself it is an essential condition of causality, is no longer doubtful, and we now possess numerous examples not only of hereditary transmission, but also of an heredity accumulation of the mordid predispositions. This is particularly the case in families where wedlock is limited to a small circle of fortune and social fitness. The royal families of many countries have not escaped this law. We see generations of insane succeed each other with an unyielding regularity, and there are families which in this relation seem pursued by a desolating fatality.

"Aside from idiocy and imbecility, which show themselves a short time after birth, the predisposition does not ordinarily show itself until the individual has reached a certain development—that is to say, when all the conditions of causality are reunited. This native predisposition does not suppose that those that preceded were insane, it depends, above all, upon the conditions in which they are placed and which react upon the phases of their existence. This predisposition is also progressive from one generation to another: and it is in this manner that great social commotions and certain epidemics contribute to the production of insanity, in leaving after them deep distress or in producing a disordered exaltation.

"All causes capable of altering the public health have a marked influence upon the immediate production of insanity or upon the hereditary transmission of its predispositions. The unhealthiness of dwellings, and insufficiency or bad quality of food are so many circumstances influencing its production, and to which municipal governments should pay serious attention. It is on account of these and other analogous causes that cretinism and idiocy are endemic in certain localities, and that this influence is exercised not only on natives, but also upon those establishing themselves there.

"The mode of life of the parents, and the diseases they have had are no less effica-

istence in the parent, but that its existence in the parent affords the same presumption as to its existence in the offspring.

In regard to *idiocy*, the facts are very striking. "Suffice it to say," we are told by Mr. S. G. Howe, chairman of the Massachusetts State Idiocy Commission, in a very luminous report, submitted in 1848, "that out of 420 cases of congenital idiocy examined, some information was obtained respecting the condition of the progenitors of 359. Now in all these 359 cases, save only four, it was found that one or the other or both of the progenitors of the unfortunate sufferers had, in some way, widely departed from the normal condition of health, and violated the natural laws."

The hereditary transmission of moral insanity is equally well authenticated. "We have no doubt," says a very eminent physician, "that various immoral and vicious practices ought to be ascribed to insanity. When periodic insanity has shown itself in a large family, it is probable that some members of the family will evince a propensity to thieving or swindling.(*v*) And when more children than one of the same parents, bursting through all the restraints imposed by carefully-instilled principles and established habits, engage in swindling transactions, it will often appear, upon inquiry, that insanity has generally broken out in that family."(*w*) And the same high authority tells us that in families where insanity prevails with the progenitors, he has known two, three, or four children of the same parents become deranged. One instance in particular he dwells upon, in which, among a family of twenty persons, the children of a brother and of two sisters, *ten* were afflicted with insanity.

A late very interesting table, originally published in the London Quarterly Review,(*x*) and indorsed by Dr. Winslow,(*y*) shows at once the importance of this inquiry :—

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cious in producing a predisposition to mental unsoundness. If insanity has existed in those that preceded, the chances of a direct transmission are much more probable. This predisposition is sometimes so marked as to be in some measure the only cause. Among the circumstances most likely to produce an hereditary predisposition, we should mention drunken habits in the parents. Many, indeed, are the cases of idiocy and imbecility which owe their situation to this cause. Many generations thus suffer the punishment inflicted for the faults of one alone.

"The hereditary predisposition presents numerous varieties in its evolution. Many members of the same family are free from mental unsoundness ; and one only becomes insane. In another the inheritance shows itself from mother to daughter as a consequence of parturition. This predisposition sometimes consists only in the peculiarity of character, which drags a man towards a precipice which conducts irresistibly to insanity."—*Etudes Medico-Psychologiques*, par L. F. E. Renaudin. Chap. II. p. 33. Paris, 1854.

(*v*) See *post*, § 192.

(*w*) Essays on Partial Derangement in Supposed Connection with Religion. By the late John Cheyne, M. D. Dublin, 1843.

(*x*) No. 163.

(*y*) Lectures, &c. 150. See Rush on the Mind, 46, where this point is examined.

Initials of Criminals.	Verbatim extracts from Letter of Referee.	Observations on degree of intellect, &c., by the Chaplain when first seen.	School-master's Report on Leaving Prison.	State of leaving the Prison, as noted by Chaplain.
J. C.	Mother touched with symptoms of Insanity.		Improved in reading and writing.	Improved generally.
R. L.	Grandmother insane.	Read imperfectly.	Read well, wrote imperfectly; four rules of arithmetic.	
J. H.	Sister rather weak in mind.	Only knew the alphabet.	Read and wrote well; Rule of Three.	Very cheerful; improved in general knowledge.
H. N.	He and most of the family evinced symptoms of insanity.	Of the lowest kind.	Read very imperfectly; write a little; learned a little arithmetic.	Sent away incorrigible.
J. C.	Two sisters insane.	Of the lowest intellect, did not know A, B, C.	Read well, wrote tolerably, four rules.	Somewhat improved in general.
D. M.	His mother subject to nervous fits.		Read and wrote well; Rule of Three.	Mentally, not morally improved.
J. D.	One of his family (his mother, I have every reason to belive) laboring with insanity.		Read and wrote well; four rules.	Improved in religious knowledge; very cheerful.
R.	Of a simple turn of mind. Uncle in Asylum.		Improved considerably.	In Scriptural knowledge also.
W. J. *alias* W. C. B.	Skull fractured three years ago.		Improved in reading and writing; Rule of Three.	Improved in Scriptural knowledge.
W. G.	Sister considered rather silly.	Of the lowest intellect, did not know the alphabet.	Read and wrote imperfectly; four rules.	Cheerful.
A. H. L.	Had become *dejected* and *absent* after failure in business, and showed symptoms of *insanity*.	Very low spirits.	Read and wrote well; Rule of Three.	Much improved in spirits; found comfort in religion.
J. N.	Considered rather *as an idiot*.	Very low degree of intellect.	Read and wrote well; Rule of Three.	Improved in general knowledge.
W. N.	Almost irresponsible.	Of very weak intellect.	Well educated previously.	Rather improved mentally.
A. A.	Weakness of mind, made sport of by fellow-servants.	Low in spirits and intellect.	Read and wrote well; Rule of Three.	Mentally improved.

F. W. K. *alias* A. K.	Uncle died in an Asylum; another committed suicide. Father and sisters considered weak.	Low in spirits. Over-active mind; disliked his trade.	Very well educated.	Morally improved.
J. M. F.	Mother's brother reported to be imbecile; harmless if let alone.	Of a low degree of intellect.	Read and wrote well. Rule of Three.	Improved in general; was recommended to be master tailor on board ship.
R. B. *alias* F.F.S. *a Jew.*	Not considered quite correct in his mind. Aunt mad for a long time.	Peculiar turn of mind.		Greatly improved, especially in Scriptural knowledge.
D. M.	Considered a simpleton.	Low intellect.	Read well, wrote imperfectly; four rules.	Improved generally.
J. M. *alias* J. T.	Uncle killed himself in a fit of insanity.	Low in spirits and intellect.	Read well, wrote tolerably. Rule of Three.	Much improved.
C. J. C.	Eldest brother exhibited symptoms of insanity.	Good intellect.	Well educated.	Improved generally.
T. N.	Whole family eccentric, and very weak in intellect.	Weak intellect.	Read and wrote well. Rule of Three.	Improved generally.
R. R.	Uncle's intellect affected at times.	Low intellect; only knew the alphabet.	Read well, wrote imperfectly; four rules.	Improved generally.
J. T.	Father died a lunatic.	Ordinary intellect.	Read and wrote well. Rule of Three.	Very much improved in general.
J. S.	I have thought, and more, I am sure, that at times he was not altogether right in his head.	More than ordinarily reserved and very dull.	Read tolerably; wrote imperfectly; improvement very little.	On the whole rather improved.
H. C. *alias* L.	The prisoner's conduct, more especially his wandering propensities, are irreconcilable with perfect sanity.	A good intellect; apparently much compunction for sin.	Could read and write well; considerably advanced in the higher rules of arithmetic; improvement tolerably fair.	Improved very much. Found peace and comfort in the Gospel.
G. R.	He was not quite sound in mind, and sometimes not conscious of what he was about. His own sister destroyed herself.	A very low-spirited man.	Could read and write very well; considerably advanced in the higher rules of arithmetic; intelligent; made fair improvement.	Improved in spirits. Found comfort in religion also, I think.
W. H.	His mother has evinced symptoms of insanity within the last three years.	Nothing at all peculiar.	Read well, wrote tolerably, higher rules of arithmetic. Improvement tolerable.	Improved very much, especially in the memory. Gave himself to learning hymns, chapters, &c.

Initials of Criminals.	Verbatim extracts from Letters of Referee.	Observations on degree of intellect, &c., by the Chaplain when first seen.	School-master's Report on Leaving Prison.	State of leaving the Prison, as noted by Chaplain.
H. L.	His father was subject to fits.	Very low-spirited.	Could read and write well; mensuration. Improvement tolerable.	Very down-hearted, would have sunk here, I think, but for some religious hope.
J. B.	One member of the family has exhibited symptoms of insanity.	Ordinary.	Read well; wrote tolerably; knew common rules of arithmetic. Improvement tolerable.	Improved.
H. B.	I have known the person to have fits when over fatigued.	Ordinary.	Read well; wrote tolerably; common rules of arithmetic. Improvement tolerable.	Very cheerful.
J. K.	He received an injury in his head; from this time he became flighty and unsteady. His father was in some measure imbecile in both body and mind.	A very active mind, but most perverse.	Could read and write well; higher rules of arithmetic. Improvement tolerable.	Cultivated his mind assiduously, but was very perverse to the last.
W. S. *alias* R.	Have found him a little insane at times; he was kicked by a horse in the head.	Ordinary.	Could read well, write tolerably, knew the first four rules in arithmetic. Improvement little.	Rather improved.
W. F.	I knew him to labor under severe nervous fever for several months, which I always observed afterwards to cause a lowness of spirits. It was about eight years since.	Good, but his constitution apparently weakened by intemperance.	Read and wrote well; advanced in higher rules of arithmetic. Tolerably improved.	Very cheerful. Much improvement in every way. Gave great attention to religion.
J. A. *alias* E. W.	Has not his senses perfect.	Half-witted.	Could read well; made scarcely any improvement.	Rather worse.
W. D. *alias* J. B.	I fully believe him to be at times insane. His maternal grandfather died insane.	Clever, good, but perverted and abused.	Was well educated on admission; was excused from school. Improved himself tolerably by reading and private study.	Not improved.
W. B.	Very soft in many things.	Low intellect.	Could scarcely read any. Very little improved.	Rather worse.
J. D.	His grandmother is in a Lunatic Asylum.	Ordinary, but very dull.	Read well; wrote tolerably; four rules of arithmetic. Improved a little.	Improved rather in spirits.

Dr. Steinau, in his Essay on Hereditary Disease, mentions a very interesting incident bearing on this point.(*x*) "When I was a boy, there lived in my native town an old man, named P——, who was such an inveterate thief, that he went in the whole place by that name; people speaking of him used no other appellation but that of The Thief, and everybody then knew who was meant. Children and common people were accustomed to call him by that name, even in his presence, as if they knew not his other name; and he bore it to a certain degree with much good-natured forbearance. It was even customary for the tradesmen and dealers, who frequented the annual fair in the place, to enter into formal treaty with him; that is, they gave him a trifling sum of money, for which he engaged not only, not to touch their property himself, but even to guard it against other thieves. A son of this P——, named Charles, afterwards lived in B—— during my residence there. He was respectably married, and carried on a profitable trade which supported him handsomely. Still, he could not help committing many robberies quite without necessity, and merely from an irresistible inclination. He was several times arrested and punished; the consequence was, that he lost his credit and reputation, by which he was at last actually ruined. He died while still a young man, in the house of correction at Sp——, where he had been confined for his last robbery. A son of this Charles, and grandson of the above mentioned and notorious P——, in my native town, lived in the house where I resided. In his earliest youth, before he was able to distinguish between good and evil, the disposition to stealing, and the ingenuity of an expert thief, began already to develop themselves in him. When about three years old, he stole all kinds of eatables within his reach, although he always had plenty to eat, and only needed to ask for whatever he wanted. He therefore was unable to eat all that he had taken; nevertheless he took it, and distributed it among his playfellows. When playing with them, some of their playthings frequently disappeared in a moment, and he contrived to conceal them for days, and often for weeks, with a slyness and sagacity remarkable for his age. When about five years old, he began to steal copper coins; and at the age of six years, he began to know something of the value of money, and he looked out for silver pieces; and in his eighth year, he only contented himself with larger coins, and proved to be, on public promenades, an expert pickpocket. He was early apprenticed to learn a trade, but his master being continually robbed by him, soon dismissed him. This was the case with several other tradesmen, till at last, in his fourteenth year, he was committed to the house of correction."(*y*)

A late writer gives us the following additional illustration: "A gentleman recently returned from New South Wales told me," says the author, "that he was present one day at a factory or barrack, where the convicts are kept until engaged by a master, when a gentleman came in, and seeing a youth whom he thought would suit him, he said to him, 'Well, my lad, what are you?' 'A London thief,' was the boy's reply, touching his hat. 'What can you do?' 'Thieve, sir.' 'No doubt of that,' said the interrogator; 'but how were you

(*x*) See Pathological and Philosophical Essay on Hereditary Disease, p. 19, No. 21.
(*y*) See *post*, §§ 190–194.

brought up?' 'To thieve, sir,' was the boy's answer. 'Nonsense! What was your father?' 'A thief, sir.' The gentleman, now, probably humoring the conversation, continued to inquire concerning his mother and family, when it appeared that he had five brothers and five sisters, all of whom in the same manner were thieves."(z)

§ 108. "Nothing," says Mr. Hill, in his recent work on crime, "has been more clearly proved than that crime is, to a considerable extent, hereditary—crime appearing, in this respect, greatly to resemble pauperism, which, according to the evidence of the Poor-law Commissioners, often proceeds from father to son in a long line of succession."(a) He adduces numerous cases in confirmation of the fact. One of the most striking applies to the families of three brothers, containing together fifteen members. Of these, no fewer than fourteen were utterers of base coin, while the fifteenth, who appeared to be an exception to his kindred, was, at length, detected in setting fire to his own house which he had insured for four times its value. Supposing each of those employed in uttering base coin to have passed only one piece a day and to have had a career of five years' duration (which there is reason to believe is about the average), no fewer than twenty thousand offences might have been prevented by removing the three brothers permanently from society, before they became fathers of families." The disposition to commit crime is often unquestionably an incurable form of insanity; hence, we read of persons who are all their lives criminals, and only terminate one period of imprisonment to recommence another. The case of a woman is cited by Mr. Hill, who continued in a career of crime for twenty-five years; and that also of another woman, fifty years of age, who had already been in prison sixty-seven times. Furthermore, he refers to another example, of a woman who had been in the police cells, in Edinburgh, at least one thousand times, chiefly for acts of violence.(b)

In a *legal* as well as a *psychological* view, the relevancy of evidence of hereditary taint has been very ably shown by a late eminent judge,(c) whose capacity as a mental observer was not less than his ability as a judge. On the trial of the issue, the object of which was to determine the validity of the will of Captain Arrowsmith, the evidence was that the deceased was a retired mariner who had attained a competence; the plaintiff was his sister, his heir by descent, as the last of her father's issue; and the defendant his housekeeper, was his devisee. The fact in contest was his sanity. There was no evidence of practice or imbecility; but the plaintiff's witnesses testified as to acts of sudden and unprovoked passion, violence, wildness, extravagance, and excentricity; and, in order to corroborate the inference from them, her counsel offered the deposition of Susan Arrowsmith, the widow of one of the testator's brothers, that the testator's father was insane towards the close of his life; that one of the testator's two uncles, on the father's side, was insane, and the other imbecile; that his two aunts, on the same side, and their children, were insane; that a son of one of them is in a madhouse; and that her own husband was mentally disqualified before his death. The admission of

(z) Old Bailey Experience, 34.
(a) Crime; its amount, causes, and remedies. By Frederick Hill, Barrister-in-law, late Inspector of Prisons, 1853, p. 55. (b) Ibid. (c) Gibson, C. J.

the deposition was opposed, on the ground that the legitimate inquiry was into the state of the testator's mind, not that of another; and that it did not follow, that because the testator's father and his collateral relations were insane, that he must have been so too. The point was elaborately argued on principle and authority, but the Chief Justice said: "I admit the deposition without hesitation, notwithstanding the dicta of Mr. Shelford,(*d*) and Mr. Chitty,(*e*) that it is an established rule of law not to admit proof of insanity in other members of the family in civil or criminal cases. Established! When, where, and by whom? Certainly not by the House of Lords, in McAdam *v.* Walker,(*f*) the only case cited for it, for the question there was avowedly dodged. That high court would not shock common sense by affirming the order of the Scotch Court of Session; nor would it gratuitously reserve it, when the decision could be safely put on another ground. The authority of a judgment appealed from, and left in dubio, cannot be very great. Sir Samuel Romilly's argument against the evidence was rested on the fecundity and interminableness of collateral issues; and Mr. Chitty seems to have had a glimpse of the same idea, when he said the course is to confine the evidence to the mental state of the party. But every new fact, though it open a new field of inquiry, is not collateral. It may bear directly on the fact in contest; and where it does so, it is not in the power of the court to shut it out. A collateral issue is such as would be raised by allowing a party to put a question to a witness, on cross-examination, in regard to a fact palpably unconnected with the cause, in order to afford an opportunity to discredit him by contradicting him; but does not proof of hereditary madness bear directly on the condition of the mind, which is the subject of investigation? What if the point had been ruled by the chancellor and law judges in the House of Lords? Profoundly learned in the maxims of law, they were profoundly ignorant of the lights of physiology; yet free from the presumptuousness of which ignorance is the foster-father, they refused to rush on the decision of a question to which they felt themselves incompetent. Mr. Chitty fancifully puts the solution of questions of insanity on the doctrine of legal presumptions. 'As the imputation,' he says, 'is contrary to the natural presumption of adeqaute intellect, the deficit should be established by *direct* and *positive* evidence, and not merely to be conjectural or probable proof.' If that be law, a question of insanity is the only one in which positive evidence is required, and circumstantial evidence to corroborate, is rejected. Why is evidence of an old grudge admitted against a prisoner, as a remote proof of malice, if the remote proof of hereditary insanity may not be given by him, to rebut it; and why should the presumption of sanity be allowed to overbear the presumption of innocence, the strongest of them all? I admit that hereditary insanity will not itself make out a case for or against a member of the family; but to say that it may not corroborate what Mr. Chitty calls direct and positive proof, without defining it, staggers all belief. In a measuring cast it ought to prevail. He says harsh conduct, bursts of passion, or displays of unnatural feeling will not, *of themselves*, establish insanity. Be it so. But because the

(*d*) Treat. on Lunacy, 59. (*e*) Med. Jurisp. 355. (*f*) 1 Dows. Par. Ca. 148.

springs of such actions are concealed, are they never to be laid bare, and shown to be seated in the blood. When it is admitted by Mr. Chitty and Mr. Shelford themselves, that insanity is a descendable quality, they give up the argument. There can be nothing unreasonable in referring wild, furious, and unnatural actions, not otherwise accounted for, to the aberrations of a mind, the reflux of that of a crazy father. Mr. Taylor, a distinguished lecturer on Medical Jurisprudence in Guy's Hospital, London, says that 'in making a diagnosis of a case of insanity, the first question put is commonly in reference to the present or past existence of the disorder in other members of the family. There can be no doubt, from the current testimony of many writers on insanity, that a disposition to the disease is frequently transmitted from parent to child through many generations. M. Esquirol has remarked, that this hereditary taint is most common of all cases to which insanity can be referred.'(*g*) M. Esquirol was, in 1838, and perhaps is still, the principal physician to the hospital for the insane at Charenton, in France, and a member of the Royal Academy of Medicine at Paris. His tables of insanity are held in high repute, by not only the physicians of France, but of Europe. Well might Mr. Taylor say that these things ought to be borne in mind by medical jurists. The knowledge attained by men, of a subject which they have grappled all their lives, ought surely to prevail against knowledge gleaned from the hornbooks of a profession to which the gleaners did not belong. Strange that a source of information open to every one else, should be closed to those who are to pass on the fact. Every man has observed that there are families through which insanity has been handed down for generations; and why should the probability of hereditary madness be excluded, when probabilities in other cases are weighed, especially when it is known that a proclivity to theft, intemperance, lying, cheating, and almost all other moral vices, are as transmissible as gout, consumption, deafness, blindness, and almost all other constitutional diseases. It is supposed by the million, that insanity is a disease of the mind, not of the body. Ridiculous! If it were, it could never be cured; for the mind cannot take physic, or be separately treated; yet the statistics of the insane exhibit a great number of cures, and the time is fast coming, when insanity will be considered the most manageable disease that flesh is heir to. An objection to an inquisition which does not disclose the specific nature of the ancestor's infirmity, might stand in a different light; but testimony which brings the fact of madness home to him, ought to be received like evidence of family likeness, which, though less reliable, was allowed to be corroborative proof of fraternity in the Douglas Peerage case, in 1767, and again in the Townsend Peerage case, in 1843. Lord Mansfield said, in the former, that he had always considered likeness as an argument of a child being the son of a parent; that a man may survey ten thousand people before he sees two faces exactly alike, and that in an army of a hundred thousand men, every man may be known from another; that if there should be a likeness in feature, there may be a difference in the voice, gesture, or other characters: whereas family likenesses run generally through all of these; for that in every thing there is a resemblance, as of feature, voice, attitude, and action. Might

(*g*) Taylor on Med. Juris. 502.

he have not added the diathesis of the brain? He doubtless might if the point had been mooted. In prosecutions for bastardy, the practice in the Quarter Sessions was, in my day, not exactly to give the child in evidence, but to put it before the jury, sometimes by the prosecutor, and sometimes by the putative father. But ancestral irregularity in the action of the brain is more frequently transmitted than any resemblance in form or feature; and it is difficult to imagine an objection to 'evidence for it for purposes of corroboration.'"(*h*)

§ 109. Taylor thus sums up the recent English cases on this point: "In the case of Reg. *v.* Ross Touchet, 1844, tried and acquitted on the ground of insanity, for shooting a man, Maule, J., held that evidence that the grandfather had been insane may be adduced, after it had been proved by medical testimony that such disease is often hereditary in a family. It was also admitted in Oxford's case, the prisoner having been here tried for shooting at the Queen.(*i*) This kind of evidence has, however, been frequently rejected, and it is not admitted in the law of Scotland.(*j*) There can be no doubt, from the concurrent testimony of all writers on insanity, that a predisposition to the disease is frequently transmitted from parent to child through many generations. The malady may not always show itself in such cases, because the offspring may pass through life without being exposed to any exciting cause; but in general it readily supervenes from very slight causes."(*k*)

(4.) *Conversation and Deportment.*(*kk*)

§ 110. The general questions relating to feigned insanity are discussed under another head (*post*, § 127). One or two cases will be sufficient to show the importance of accurate observation in this respect.

A short time ago, a parish officer, from the neighborhood of Middleton, took a lunatic to the asylum, pursuant to an order signed by two magistrates. As the man was respectably connected, a gig was hired for the purpose, and he was persuaded that it was merely an excursion of pleasure on which he was going. In the course of the journey, however, something occurred to arouse the suspicions of the lunatic with respect to his real destination; but he said nothing on the subject, made no resistance, and seemed to enjoy his jaunt. When they arrived at Lancaster, it was too late in the evening to proceed to

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(*h*) Smith *v.* Kramer, 1 Am. Law Reg. 353. (*i*) Law Times, Oct. 26, 1844.
(*j*) Gibson's case, Edinburgh, Dec. 1844.
(*k*) Taylor's Med. Jur., p. 555.
"In a great majority of cases," says Dr. Wood, "insanity is produced by exciting causes acting upon a predisposition to the disease. *Inheritance* is the most frequent source of this predisposition—perhaps more frequent than all others put together. Even a particular form of insanity is often inherited; and it has been noticed that the attack is apt to come on at the same period of life in the parent and his offspring. The tendency to suicide not unfrequently descends from parent to child. It is thought that children born before the occurrence of insanity in the parent are less liable to be affected than those born subsequently."—*Practice of Medicine*, by Prof. G. B. Wood, M. D., vol. ii. p. 672. Phila. 1849.
According to the observations of Esquirol, more than a third (and perhaps the half) of the persons who became insane, count insane persons among their near relations, and thus at their birth bring on an hereditary predisposition to the disease.—*Méd. Lég.*, Briand, p. 543. Paris, 1852.
(*kk*) On this point see *ante*, §§ 86–92.

the asylum, and they took up their quarters for the night at an inn. Very early in the morning the lunatic got up and searched the pockets of the officer, where he found the magistrate's order for his own detention, which, of course, let him completely into the secret. With that cunning which madmen not unfrequently display, he made the best of his way to the asylum, saw one of the keepers, and told him that he had got a sad mad fellow down at Lancaster, whom he should bring up in the course of the day, adding: "He's a very queer fellow, and he has got very odd ways. For instance, I should not wonder if he was to say I was the madman, and that he was bringing me; but you must take good care of him, and not believe a word that he says." The keeper of course, promised compliance, and the lunatic walked back to the inn, where he found the officer still fast asleep. He awoke him, and they sat down to breakfast together. "You 're a lazy fellow to be sleeping all day; I have had a long walk this morning," says the lunatic. "Indeed," says the officer, "I should like to have a walk myself after breakfast; perhaps you will go with me?" The lunatic assented, and after breakfast they sat out, the officer leading the way toward the lunatic asylum, intending to deliver his charge; but it never occurred to him to examine whether his order was safe. When they got within sight of the asylum the lunatic exclaimed—"What a fine house that is!" "Yes," said the officer, "I should like to see the inside of it." "So should I," observed the lunatic. "Well, I dare say they will let us through—I will ask," was the response. They went to the door; the officer rang the bell, and the keeper whom the lunatic had previously seen made his appearance, with two or three assistants. The officer then began to fumble in his pockets for the order, when the lunatic produced it, and gave it to the keeper, saying: "This is the man of whom I spoke to you about. You will take care of him; shave his head, and put a strait waistcoat on him." The men immediately laid hands on the poor officer, who vociferated loudly that the other was the madman, and he the officer; but, as this only confirmed the story previously told by the lunatic, it did not at all tend to procure his liberation. He was taken away, and became so indignantly furious that the strait waistcoat was speedily put upon him, and his head was shaved, *secundum artem*. Meanwhile, the lunatic walked deliberately back to the inn, paid the reckoning and set out on his journey homeward. The good people in the country were, of course, surprised on seeing the wrong man return; they were afraid that the lunatic, in a fit of phrensy, had murdered the officer, and they asked him with much trepidation, what he had done with Mr. Stevenson. "Done with him?" said the madman, "why, I left him at the Lancaster Asylum, as mad as a fury!" which indeed, was not very far from the truth; for the wits of the officer were well nigh upset by his unexpected detention and subsequent treatment.

Further inquiry was forthwith made by his neighbors, and it was ascertained that the man was actually in the asylum. A magistrate's order was produced for his liberation; and he returned home with a handkerchief tied round his head in lieu of the covering which nature had bestowed upon it.(*l*.)

(*l*) Manchester (England) Guardian.

"Delusions are sometimes cunningly concealed for a length of time," says Dr. Winslow, "and, notwithstanding we are certain that they exist, no amount of ingenuity will induce the patient to disclose them, particularly if made aware of the object of our visit. I had been, recently, to see a lady whose insanity was manifested in a remarkable degree in her every action; but after paying her several visits I found it impossible to induce her to exhibit any one delusive impression or insane idea; but no sooner had I left the room, than her conversation and conduct became outrageously insane. Many insane persons are able to talk with apparent rationality, but cannot write without exhibiting their insanity. I have examined, recently, one very remarkable case of this kind, in a clever, well-read, and intellectual woman, whom I had occasionally to visit.(*u*) I never could detect the slightest aberration of mind in her conversation, and yet almost invariably upon my leaving, she placed in my hands a letter (which had been written previous to my calling), full of the most absurd extravagances and fancies; accusing strangers, myself, and members of her family of being engaged in deeply concocted conspiracy against her property and life. Several of these peculiar and interesting cases are recorded, and the medical man has been advised, with the view of obtaining an insight into the true condition of the mind, to open a correspondence with the supposed lunatic, upon the principle that few persons positively insane can, for any length of time, write without exhibiting their delusions, whatever amount of self-control they are able to exercise over their thoughts and morbid ideas, during protracted conversations. It is essential for us to ascertain the degree of knowledge possessed of the ordinary and everyday occurrences of life. Upon one occasion I was conversing with a person whose state of mind was the subject of my investigation, and finding him rational and apparently sane upon all points, I questioned him as to who was the reigning sovereign, without knowing he had any delusion on the point. The person immediately started from his chair, exclaiming, in an excited tone of voice, "I am the sovereign!"(*v*)

"I was requested," says the same authority, "to see a gentleman who was said to be suicidally insane. Upon inquiry, I ascertained from good authority that under the influence of the most distressing hallucinations he had attempted to hang himself. The patient firmly, earnestly, and apparently with great truthfulness, resolutely and repeatedly denied the fact. He declared it was an invention—a pure creation of the imagination, originating with the family; that he was happy, subject to no depression, had a strong wish to live, and great fear of death. I examined him, in conjunction with another physician, and neither of us could seize hold of the salient point, or satisfy himself that the man was actually insane. But, we asked ourselves, what motive could his family have for thus misrepresenting the facts of the case? We felt quite assured, from the character of the evidence presented, that an attempt at suicide had been made; but the patient, with an ingenuity which would have

(*u*) "Dans la folie raisonnante sans grand agitation, le malade peut paraître devant celui qui l'interroge avec calme, repondre tres juste à toutes les questions et expliquer d'une manière plausible les actions extravagantes qui lui sont imputees."—*Orfila*, tome i. p. 396. Paris, 1848.

(*v*) Winslow on Medico-Leg. Ev. 108.

reflected credit upon a *nisi prius* lawyer, parried with great skill all the questions, and gave such prompt and happy replies to our anxious interrogatories, that we were compelled to admit ourselves, for a time, perfectly defeated. By a course of conversation I drew the gentleman's thoughts into a different channel; and whilst my attention was directed apparently elsewhere, I kept a close watch upon all his movements. I perceived, as I imagined, some kind of instrument projecting from his pocket. He perceived that my eyes were directed to this, and he immediately expressed a wish to leave the apartment. I at once said, 'I cannot permit you to do so until I know what you have concealed in your trowsers pocket.' He at once manifested signs of embarrassment and excitement, and rising rapidly from his seat, endeavored to rush out of the door. He was immediately prevented from doing so, and his pockets emptied, and a razor discovered. In his pocket-book a letter was found, addressed to the coroner, intimating to him that he was pursued by an evil spirit, and this impression had driven him to commit an act of self-destruction. Fortunately for our own reputation and the patient's life, this providential discovery was made.(*w*) It may be necessary to see and examine the patient on more than one occasion before the physician is satisfied as to the actual state of his mind. In cases of doubtful character, I would suggest that this course should invariably be adopted, taking the necessary precaution to recommend close vigilance during the interregnum. I suggest this course, in consequence of my being acquainted with the case of a lady, whose removal from home was for a few days temporarily postponed, in compliance with the cautious and judicious advice of the medical man, who admitted that he could not detect, according to his apprehension, sufficient evidence of insanity to justify him in signing the certificate. During the interim she succeeded in destroying herself. In a few instances we are justified in partially acting upon the representations of the family and friends of the alleged lunatic. If a delusion be detected, it must be referred to; and if the patient has committed any overt acts of violence, or manifested a suicidal disposition, it is our duty to refer to these facts, guarding ourselves by stating that we derived such information from parties immediately around the patient. It is important in all cases to specify the character of the existing delusion. The expression of a belief in the fact of delusive ideas, and of the presence of abstract insanity without a specification of facts, renders a medical certificate invalid. I have often seen certificates worded to this effect: 'I have formed my opinions from the fact of the party being insane'—'being under delusions'—'being excited'—'being violent.' These generalizations should be carefully avoided; the

(*w*) "It is only in having," says Orfila, "an acquaintance with the whole life of an individual, in weighing and comparing every fact, that, in some cases, we can pronounce with certainty upon his actual moral state. It is in interrogating the past that we acquire a knowledge of the present." The same author also states, that when an opinion is asked from physicians upon the actual state of an accused person, they ought, in the examination of his previous conduct, to understand what act is imputed to him, if that should be necessary to influence their opinion. In a report, they should not confine themselves to a simple opinion upon the state of the person who is the subject of it, but, of necessity, should go into details upon the facts observed, in order that the same piece may be submitted to the examination of new experts. The employment of all the means indicated does not always lead to a positive result, and sometimes we are to remain in doubt.—*Méd. Lég.*, Orfila, tome i. p. 400. Paris, 1848.

more concise the account of the patient's condition, the closer will it be in unison with the expressed wish of the Commissioners in Lunacy. The record of one clear and unmistakable delusion is quite sufficient for all legal purposes. But cases do occur where no delusion can be detected, and yet confinement may be absolutely necessary. Under such circumstances it is the duty of the medical man to enter more into detail as to the facts of the case. Perhaps I may be excused for suggesting, that in every instance of this kind, the parties should keep copies of their certificates."(*x*)

§ 111. A man mentioned by Pinel, who had been for some time confined in the Bicêtre, was, on the visitation of a commissary, ordered to be discharged as perfectly sane, after a long conversation in which he had conducted himself with the greatest propriety. The officer prepared the *procès verbal* for his discharge, and gave it to him to put his name to it, when he subscribed himself Jesus Christ, and then indulged in all the reveries connected with that delusion. Lord Erskine gives a very remarkable history of a man who indicted Dr. Munro for confining him without a cause in a madhouse. He underwent the most rigid examination, by the counsel of the defendant, without discovering any appearance of insanity, until a gentleman came into court who desired a question to be put to him respecting a princess with whom he had corresponded in cherry-juice. He immediately talked about the princess in the most insane manner, and the cause was at an end. But this having taken place in Westminster, he commenced another action in the city of London, and on this occasion no effort could induce him to expose his insanity; so that the cause was dismissed only by bringing against him the evidence taken at Westminster. On another occasion, Lord Erskine examined a gentleman who had indicted his brother for confining him as a maniac, and the examination had gone on for great part of a day without discovering any traces of insanity. Dr. Sims then came into court, and informed the counsel that the gentleman considered himself as the Saviour of the world. A single observation, addressed to him in this character, showed his insanity, and put an end to the cause. Many similar cases, says Abercrombie, are on record. Several years ago, a gentleman in Edinburgh, who was brought before a jury to be cognosced, defeated every attempt of the opposite counsel to discover any traces of insanity, until a gentleman came in court, who ought to have been present at the beginning of the case, but had been accidentally detained. He immediately addressed the patient by asking him what were his latest accounts from the planet Saturn, and speedily elicited ample proofs of insanity.(*ll*)

M. Orfila states, that deranged persons who are conscious of their condition, and who yet preserve some control over themselves, will answer correctly all questions that are addressed them, and will not betray their condition if they have an interest in concealing it.(*m*)

Mr. David Paul Brown gives us the following illustration of this same craftiness: M. having written a letter from the asylum, made up of patches of Latin, Greek, French, and German, and manifesting most clearly a dis-

(*x*) Winslow on Medico-Legal Ev. 153; see *ante*, § v. 3.
(*ll*) Abercrombie on the Intellectual Powers, pp. 253, 254; see also §§ 86–92.
(*m*) Méd. Lég. M. Orfila, tome i. p. 396. Paris, 1848.

ordered mind, upon escaping from his confinement, desired counsel to institute an action for false imprisonment, against the managers. "I shall do no such thing," said the lawyer (handing him the letter); "look at that, and tell me whether a sane man ever wrote such a letter." Upon which, bursting into a laugh, the madman said, "That indeed does look as if I were insane; but I wrote it purposely in that way, because I knew if it had been reasonable, and the managers had opened it, as they always do, they never would have allowed it to reach its address."(*n*)

Lord Chancellor Loughborough once ordered a man to be brought before him, against whom his heirs wished to take out a commission of lunacy. He examined him and put various questions to him, to which he made the most pertinent answers. "This man mad!" thought he, "verily he is one of the ablest men I ever met with." Toward the end of the examination, however, a little scrap of paper was put into his hands on which was written "Ezekiel." This was enough for such a shrewd and able man as his Lordship. He took his cue. "What fine poetry," said the Chancellor, "is in Isaiah!" "Very fine," replied the man, "especially when we read in the original Hebrew." "And how well Jeremiah wrote." "Surely," said the man. "What a genius, too, was Ezekiel!" "Do you like him?" said the man; "I'll tell you a secret, I am Ezekiel!"

"Another patient of mine," says Dr. Bucknill, "a barrister, so completely concealed and denied his delusions in conversation, that he succeeded in persuading his relatives, and especially his mother, a woman of rare intelligence and discrimination, into the belief of his perfect recovery from an attack of mania, and of his capacity to resume his professional labors. During the whole of this time he was writing letters to relatives living at a distance, full of delusion relating to his supposed marriage with a servant, to the distribution of a large fortune which he did not possess, and a yacht voyage to every part of the globe.

"The conduct of the patient should be observed by night as well as by day. I have for several years had under my care a respectable tradesman, whose conduct and conversation during the day exhibit scarcely a trace of mental disease He is industrious, sensible, and kind-hearted; and it is strange that his nights of suffering have left no painful impression on his pleasing features. At night he sees spectres of demons and spirits, at which he raves aloud and prays with energetic fervor.

"That it is important to test the memory and the capacity by examinations, repeated at various times, is shown by the case recorded by Sir H. Halford in his Essays. A gentleman sent for a solicitor, gave instructions for his will, and told the solicitor that he would make him his heir; soon after this he became deranged. After a month's violence he was composed and comfortable, and manifested great anxiety to make his will. This request was evaded as long as possible, but at last consented to. The solicitor received the same instructions, drew it, and it was signed by the physicians (Sir Henry Halford and Sir George Tuthill). After leaving the room and conversing on the delicacy of their

(*n*) 2 Brown's Forum, p. 478.

situation, the physicians returned to his room and questioned him how he had left his property. He mentioned the legacies correctly, but when asked to whom the real estate was to go, he said, 'To the heir at law, to be sure.' This case, although instructive, is not very intelligible; probably the solicitor was better acquainted with the peculiar weakness of the patient's mind than either of the eminent and titled physicians."

Mr. A. amassed a large fortune in Philadelphia, in a few years, as a carriage builder. He had an extraordinary degree of skill, among other things, in poising and adjusting the springs and weights of a carriage, and in uniting, in remarkable perfection, beauty and lightness with strength. As his business increased, he would be occupied during large portions of the night, as he lay sleepless in his bed, by calculations as to how these adjustments could be best secured. In the spring of 1855, he engaged in real estate speculations, in which he speedily showed that his mind was becoming unbalanced. He negotiated, or pretended to negotiate, for a large and immensely valuable lot of ground, intimating that he expected it to be occupied by Queen Victoria in a visit that she was projecting. Then he turned his attention to live stock, taking measures to purchase a vast number of cows, on the ground, he said, of an expected rise in the price of milk. His family petitioned for a commission of lunacy, which was granted, and the present writer was appointed commissioner. While the case was on hearing, it was agreed on both sides that to give every opportunity for recovery, as well as to secure greater certainty in the result, Mr. A. should be permitted to travel for a few months, under the charge of two parties in whom he personally had confidence. The experiment was made, and two remarkable facts were established. The first was, that he was possessed by certain insane delusions, which destroyed his capacity for managing his estate. The second was that he was conscious that he was under watch, and that these delusions, if shown to exist, would lead to the pending trial being decided adversely to his sanity. Nothing could exceed the adroitness and tact with which, on the one hand, he pursued these delusions, and on the other hand, sought to conceal or mask them from his attendants. It seems that besides wanting to purchase all the live stock he met, he had a fancy that these creatures were rational. He accordingly addressed notes to a "gray mare," or "a black horse, which I met in such a place," and in seeking to get these notes to their intended destination, he used the adroitness and finesse of a subtle diplomatist. Then, when the fact was discovered, he would laugh it off, with the utmost coolness, as a practical joke attempted by him on his guardians. When the case was brought up for a final hearing, he not merely went successfully through the test of a protracted and thorough examination, but cross-examined the witnesses himself, and made a long, able, and artful speech, in which he endeavored to explain away all the facts that admitted of a doubtful construction. As to those which were unequivocally irrational, he took a ground something like the following: "You know, gentlemen of the jury, being business men yourselves, how acutely one who has been immersed all his life in a business in which he delights, and of which he may be justly proud, must feel when suddenly dragged from that business, forced to compulsory idleness, and dogged by men who he knows are seeking to entrap

him into something which will prove him a lunatic. *You* can easily see how under such circumstances, a man might resort to *imaginary* business, such as the world resorts to in its fashionable sports and games, to fill the void of *real*. *You* can understand, also, how he might attempt practical jokes to see how far the gullibility of his keepers may go, and since they wish to stare, lay traps to give them something to stare at."

Notwithstanding this defence, which for coolness, coherence, and appropriateness, the sanest advocate could with difficulty have excelled, Mr. A. was found by the jury to be a lunatic, and was remanded by the court to the Pennsylvania Hospital for the Insane. There his insanity became unrestrained and unmistakable; and a few weeks after, during the momentary absence of an attendant, he killed himself by cutting his throat.

(5.) *Nature of the Act.*

(a.) *Its Insensibility.*

§ 112. "In foro medico," as is well remarked by Schürmayer,(*n*) "a derangement of the mental faculties is generally to be presumed where the consciousness, imagination, or sensual apperception or impulse, when subjected to common and usual provocations, internal or external, respond in a manner different from what they would in a normal state. But whether a certain action, undergoing a criminal investigation, was the effect of a diseased mental activity of the subject, and committed when he was not master of himself, is a question to be answered primarily from the indicia presented by the action itself, and then from the results of an examination of the accused, in reference to his physical, moral, and mental condition before, at, and after the deed in question. Illustrations of acts whose *insensibility* can be received to show their irresponsibility or incompetency of the actor, may be found in the old law cases of a legacy to the King of Siam, and of an executory devise to all the children in a particular parish who should, in a specific year, be born with moles on their faces. The presumption of irresponsibility would, of course, attach with great force under similar circumstances, to criminal acts equally insensible, as in the case of the idiot who was found putting an infant brother into the pot to boil for dinner."

(b.) *Its Incongruity with Antecedents.*

§ 113. When a man of uniformly mild character boldly and openly commits a deed of blood; when a woman of previous purity gives way to lasciviousness; when a long course of irreproachable honesty and exactness is suddenly broken in by profligacy; or domestic peace, by unprovoked ebullitions of violence, or by expressions of distrust to those formerly most loved or most trusted,(*o*) it is proper to consider how far unsoundness of mind may not be considered as the cause. Illustrations of this species of change will hereafter

(*n*) Gerichtliche Medicin, § 522.
(*o*) See also, Médecine Légale, par M. Orfila, tome i. p. 389. Paris, 1848.

be noticed in other connections. It should be observed that *omission to fly* is a very important ingredient to make up this species of presumption.(*p*) It should be observed, also, that a man of unsound mind generally chooses the most injudicious time and place for the perpetration of the act, although the cunning and address with which an offence was committed, do not exclude the supposition of derangement,(*q*) and repels with indignation every intimation of his insanity; in many cases asserting that he committed the crime with perfect consciousness, and when entirely in his senses, and disregarding all that is said to extenuate it.(*r*)

M. Falret thus speaks of the change of character, which is a prominent symptom of commencing insanity: Sometimes, instead of a simple exaggeration, it is a veritable transformation that the character undergoes. Avarice gives place to prodigality, piety to irreligion, modesty to obscenity, temperance to drunkenness, the love of truth to deceit, the most tender and tried affections to indifference and even hate.(*rr*)

A frequent result is the neglect of the duties due to family and society, disorder of conduct and derangement of affairs, and those ebullitions of irritation and violence which momentarily, and sometimes for ever destroy the harmony existing between relations and friends.(*s*) The changes of conduct observable in the incubation of mental diseases are infinite; the deranged show a neglect or an unaccustomed zeal for their customary occupations, and for the cares and attentions of family, and for social customs and duties. Patients who were before sedentary in their habits, indulge in long absences from their dwellings. Some show an indifference and neglect for the persons and things they loved the most, and seek after objects which they did not like. Others overwhelm you with demonstrations of obligingness and devotedness. Generally those thus affected are absent and forgetful; they do not remember what they have done or what they were about to do an instant before, and then seem much surprised when these frequent absences of mind are pointed out to them. Their conduct abounds in contrasts. Those who were orderly become dissipated; those who were careful in business, now enter upon the most dangerous speculations, and they addict themselves to play, drinking and sexual excesses, and in fact to all the vices which were before unknown to them.(*ss*)

(c.) *Its Motivelessness.*(*t*)

§ 114. "It is assumed or implied," says Dr. Taylor with great justice, "that sane men never commit a crime without an apparent motive, or one of delusive

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(*p*) 2 Mittermaier Deutsch St. § 12. Wills on Circumstantial Ev. 70. Best on Presump. 322. Wharton's Cr. Law, § 826.

(*q*) See Méd. Lég. J. Briand, p. 553. Paris, 1852; and see *ante*, §§ 60, 61.

(*r*) Compare Friedreich, Handbuch der gerichtsaertztlichen Praxis. Vol. i. p. 370.

(*rr*) See *ante*, § 106. (*s*) See *post*, § 204.

(*ss*) Leçons Cliniques sur l'Alienation Mentale, M. Falret. 8th Leçon, p. 215. Paris, 1854. *Post*, § 204. See *ante*, § 106.

(*t*) Médicine Légale, J. Briand, p. 548–49. Paris, 1852. Pinel, Alienation Mentale, p. 157. Etudes Medico-Psychologiques sur l'Alienation Mentale, par L. F. E. Renaudin. Paris, 1854, chap. 18th, p. 779. See also Leçons Cliniques de Médicine Légale, M. Falret, Leçon 2d, p. 55–67. Paris, 1854. Also Médicine Légale, par Orfila, tome i. p. 304. Paris, 1848.

nature only in the perpetration of a criminal act. If these positions were true, it would be very easy to distinguish a sane from an insane criminal, but the rule wholly fails in practice. In the first place, *non-discovery* is here taken as a proof of the *non-existence* of a motive; while it is undoubted that motives may exist for many atrocious criminal acts without our being able to discover them—a fact proved by the numerous recorded confessions of criminals before execution, in cases of which, until these confessions were made, no motive for the perpetration of the crime had appeared to the acutest minds. In the case of *Courvoisier*, who was convicted of the murder of Lord William Russell, in June, 1840, it was the reliance upon this alleged criterion before the secret proofs of guilt accidentally came out, and led many to believe he could not have committed the crime; and the absence 'of motive' was urged by his counsel as the strongest proof of the man's innocence. It was ingeniously contended, 'that the most trifling action of human life had its spring from some motive or other.' This is undoubtedly true, but it is not always in the power of man untainted with crime to detect and unravel the motives which influence criminals to the perpetration of murder. No reasonable motive was ever discovered for the atrocious murders and mutilations perpetrated by *Greenack* and *Good;* yet these persons were very properly made responsible for their crimes. On the trial of Francis for shooting at the Queen, the main ground of the defence was, that the prisoner had no motive for the act and therefore he was irresponsible; but he was convicted. It is difficult to comprehend under what circumstances any motive for such an act as this could exist; and therefore the admission of such a defence would have been like laying down the rule, that the evidence of the perpetration of so henious a crime should, in all cases, be taken as a proof of the existence of an irresponsible state of mind. Crimes have been sometimes committed without any apparent motive, by sane individuals who were at the time perfectly aware of the criminality of their conduct. No mark of insanity or delusion could be discovered about them, and they had nothing to say in their defence. They have, however, been very properly held responsible. On the other hand, lunatics confined in a lunatic asylum have been known to be influenced by motives in the perpetration of crimes. Thus they have often murdered their keepers in revenge for ill treatment which they have experienced at their hands.(*u*) Thus Farmer was acquitted as insane, while the clear motive for homicide was revenge and ill-feeling. In another case the act of murder was perpetrated from jealousy.(*v*) On the whole, the conclusion with respect to this assumed criterion is, that an absence of motive may, when there are other strong evidences of insanity, favor the view of irresponsibility for crime; but the non-discovery of a motive for a criminal act cannot of itself be taken as any proof of the existence of homicidal monomania in the perpetrator. It is right to state, however, that the law invariably acts on the humane principle, that the absence of a sufficient motive forms a strong presumption of innocence—the presence of one is no proof of guilt."(*w*)

(*u*) See the case of the Queen *v.* Farmer. York Spring Assizes, 1837.
(*v*) Reg. *v.* Goule. Durham Summer Assizes, 1845.
(*w*) Taylor's Med. Jurisprudence, pp. 578, 579.

(d.) *Its Inconsequentiality.*

§ 115. Of this an illustration may be found in the case of a madman mentioned by Hitzig, who occupied himself with incessant and anxious labor in rowing an imaginary boat. He never, alas! reached the shore towards which he so toiled, until death released him from his labors; and the last pulse of life was given to a tremulous, and, then, scarcely perceptible movement of the spectral oars.

III. From what mental unsoundness is to be distinguished.

1st. *Emotions.*(*x*)

Briand says, that from the height of passion to madness is but one step, but it is precisely this step which impresses upon the act committed a distinct character. It is important then to know exactly the precise characteristics of the passions and of insanity. But here science fails, for it must be admitted that we are unable to point out the place where passion ends or where madness commences.(*y*) M. Orfila draws the following distinction between a man acting under the impulse of the passions and one urged on by insanity. The mind is always greatly troubled when it is agitated by anger, tormented by an unfortunate love, bewildered by jealousy, overcome by despair, humbled by terror, or corrupted by an unconquerable desire for vengeance, etc. Then, as it is commonly said, a man is no longer master of himself, his reason is affected, his ideas are in disorder, he is like a madman. But, in all these cases, a man does not lose his knowledge of the real relation of things; he may exaggerate his misfortune, but this misfortune is real, and if it carries him to commit a criminal act, this act is perfectly well motived. Insanity is more or less independent of the cause that produced it; it exists of itself; the passions cease with their cause, jealousy disappears with the object that provoked it, anger lasts but a few moments in the absence of the one who by a grevious injury gave it birth, etc. Violent passions cloud the judgment, but they do not produce those illusions which are observable in insanity. They excite for a moment sentiments of cruelty, but they do not produce that *deep moral* perversion which influences the madman to sacrifice, *without motive*, the being he most cherishes.(*z*)

(1.) *Remorse.*

§ 116. "When remorse," says Cogan, "is blended with the fear of punishment, and rises to despair, it constitutes the supreme wretchedness of the mind."(*a*) And of all stages of passion, remorse is the one most liable, when

(*x*) See particularly Aristotle's delineation of the Passions in the Second Book of his "Rhetoric;" and see also L. Krahmer, Handbuch der gericht. Med. Halle, C. A. Schwetschke, 1851, § 126. Observe, also, an essay by Leigh Hunt, in his Miscellanies, p. 51.

(*y*) Méd. Lég. p. 551. Paris, 1852. (*z*) Méd. Lég. tome i. p. 407. Paris, 1848.

(*a*) Cogan on the Passions, vol. i. chap. 2, sec. 3.

the conscience is acute, to be mistaken for insanity itself. Of this we have a very melancholy case in our own local experience. A young gentleman of peculiarly nice sense of honor and keen sensibility, killed an intimate and beloved friend in a duel, hastily forced on by his own undue susceptibility. For twenty years he has never ceased to stride to and fro the chamber in which he has been confined, firing an imaginary pistol at intervals, and then throwing himself back with the acutest expression of misery. In this instance remorse has run into madness. In others it has made but a slight progress in that direction; in others entire sanity and responsibility remain. And yet in all it presents symptoms which it is well for the forensic physician to examine in relation to their moral as well as their psychical origin.

Harpsfield, in his Ecclesiastical History, gives us the following graphic report of the dying words of *Cardinal Beaufort*, which is a powerful illustration of the effect of this passion: "And must I then die! Will not all my riches save me! I could purchase the kingdom, if that would save my life. What! is there no bribing of death? When my nephew, the Duke of Bedford died, I thought my happiness and my authority greatly increased: but the Duke of Gloucester's death raised me in fancy to a level with kings, and I thought of nothing but accumulating still greater wealth, to purchase at last the triple crown. Alas! how are all my hopes disappointed! Wherefore, O my friends, let me earnestly beseech you to pray for me, and recommend my departing soul to God!" A few minutes before his death his mind appeared to be undergoing the tortures of the damned. He held up his two hands, and cried—"Away! Away! why thus do you look at me?" This same scene in the Cardinal's life is thus still more vividly depicted by Shakspeare:—

SCENE—*The Cardinal's bed-chamber.*

Enter King Henry, Salisbury, and Warwick.

King Hen. How fares my lord? speak, Beaufort, to thy sovereign.
Cardinal. If thou be'st death, I'll give thee England's treasure,
Enough to purchase such another island,
So thou wilt let me live, and feel no pain.
King Hen. Ah, what a sign it is of evil life,
When death's approach is seen so terrible!
Warwick. Beaufort, it is thy sovereign speaks to thee.
Cardinal. Bring me unto my trial when you will;
Died he(*b*) not in his bed? where should he die?
Can I make men live, whe'r they will or no?—
Oh! torture me no more, I will confess.—
Alive again? then show me where he is;
I'll give a thousand pounds to look upon him.
He hath no eyes, the dust hath blinded them.
Comb down his hair; look! look! it stands upright,
Like lime-twigs set to catch my winged soul!—
Give me some drink; and bid the apothecary
Bring the strong poison I bought of him.
King Hen. O thou eternal Mover of the heavens,
Look with a gentle eye upon this wretch!
Oh, beat away the busy meddling fiend,
That lays strong siege unto this wretch's soul,
And from his bosom purge this black despair!
Warwick. See, how the pangs of death do make him grin.

(*b*) Meaning the Duke of Gloucester.

Salisbury. Disturb him not, let him pass peaceably.
King Hen. Peace to his soul, if God's good pleasure be!
Lord Cardinal, if thou think'st on heaven's bliss,
Hold up thy hand, make signal of thy hope.—
He dies and makes no sign; O God, forgive him!
Warwick. So bad a death, argues a monstrous life.
King Hen. Forbear to judge, for we are sinners all.
Close up his eyes, and draw the curtain close;
And let us all to meditation. (*c*)

M. Guillon relates the following remarkable case: "The Chevalier de S—— had been engaged in seventeen 'affairs of honor,' in each of which his adversary fell. But the images of his murdered rivals began to haunt him night and day: and at length he fancied he heard nothing but the wailings and upbraidings of seventeen families—one demanding a father, another a son, another a brother, another a husband, &c. Harassed by these imaginary followers, he incarcerated himself in the monastery of La Trappe; but the French revolution threw open this asylum, and turned the Chevalier once more into the world. He was now no longer able to bear the remorse of his own conscience, or, as he imagined, the sight of seventeen murdered men, and therefore put himself to death. It is evident that insanity was the consequence of the remorse, and the cause of the suicide." (*d*)

Mr. De Quincey, in one of the volumes of his literary reminiscences, thus speaks of a duel between Colonel Montgomery and Captain Macnamara:—

"The Colonel, as is well known, a very elegant and generous young man, fell; and Captain Macnamara had thenceforward a worm at his heart, whose gnawings never died. He was a post-captain; and my brother afterwards sailed with him in quality of midshipman. From him I have often heard affecting instances of the degree in which the pangs of remorse had availed to make one of the bravest men in the service a mere panic-haunted, and, in a moral sense, almost paralytic wreck. He that, whilst his hand was unstained with blood, would have faced an army of fiends in discharge of his duty, now fancied danger in every common rocking of a boat; he made himself, at times, the subject of laughter at the messes of the junior and more thoughtless officers; and his hand, whenever he had occasion to handle the spy-glass, shook (to use the common image), or rather shivered, like an aspen tree!"

§ 117. Schürmayer's(*e*) views on this point are of peculiar interest, as indicating the conservative jealousy with which the continental authorities guard against that involuntary dissimulation on the patient's part which makes *real*, and yet at the same time *responsible* emotions so difficult to distinguish from *irresponsible* disease. "Remorse," he says, "often affects the mind so powerfully, as to assume the appearance of insanity. The smothered self-reproach of the criminal sometimes expresses itself in the shape of deep *dejection*, and sometimes in that of *petulance* and irritability. Almost every defendant who is guilty, will be seen to lapse at least periodically into a deep reverie, with the eyes staring into vacancy. The most consummate villains alone are exempt

(*c*) King Hen. VI. part ii. Act 3.
(*d*) Winslow's Anatomy of Suicide, pp. 53, 54. See particularly Wharton on Theism, § 22.
(*e*) See Gericht. Med. § 519.

from such feelings. Criminals generally endeavor to suppress the voice of conscience, because they fear to be betrayed by it. But this very reaction is perfectly legible in their faces, gestures, and general bodily condition. Under these circumstances the qualms of conscience frequently assume the appearance of disease. The accused, particularly if in confinement, does not sleep at night for weeks, and consequently looks pale and haggard, loses his appetite, and speaks with hesitation, and sometimes with trembling. When this condition reaches a point of great intensity, the guilty is visited by visions and hallucinations; avenging angels appear to him, or evil spirits, phantoms, or the shades of the dead and injured. Add to this a little superstition, and the victim is firmly convinced of the reality of these apparitions, and regards them as punishments sent from heaven. In the course of the trial itself, these symptoms are less perceptible; and generally the culprit hesitates to tell an official person what he suffers in seclusion, but the struggle within frequently breaks out in spite of his efforts, or at least interferes with the coherence of his speech. In such cases a man, perfectly hale in mind and body, will frequently talk at random, or at least express himself in so confused and stupid a manner as to induce doubts of his sanity. It is remarkable, that those who confess their guilt are subject to these attacks equally with those who deny it. It might be supposed that the criminals who have made a public confession, would experience a regenerating sense of relief in consequence of having removed a load from their minds; but the confession often precedes the first sensations of remorse, by directing the attention to the moral and religious aspects of the deed.

"This proves that even a confessed criminal should be treated with great circumspection. Instead of overwhelming him with reproaches, the victory gained by his integrity over his fears, should be held up to himself as a restorer of self-respect.

"The more depraved order of culprits do not allow their consciences to drive them to despair, but only to *petulance;* but even this frame of mind sometimes goes so far as to lead the subject to do the most incomprehensible things, such as asserting things against reason, refusing to answer, or causing constant trouble and vexation in the prison. Such persons are often greatly misunderstood, sometimes by ascribing their offensive conduct solely to malice and spite, and sometimes by regarding them as demented, when, driven by their chagrin, they lose all reflection, and say or do things to their own injury. The consciousness of crime, coupled with the despair of expiation consequent upon having denied it, produce an internal schism which may result in the most singular and distracting phenomena.

"A tolerably sure criterion of an awakened conscience is often to be found in the desire of the culprits for some consolatory assurance. Even those who deny their guilt are generally anxious to know how they would be able to bear the condition of a criminal, sentenced according to law. In many cases there is an exaggerated idea of the impending punishment, still further increased by the imaginings which haunt the prisoner's solitude. When such erroneous notions come to the knowledge of the examining physician, it is perfectly right in him to correct them, and the information thus imparted will generally

produce a change of feeling which must at once dispel every idea of mental derangement."(*f*)

(2.) *Anger.*

§ 118. "Anger," says Archbishop Tillotson,(*g*) an authority not distinguished for undue poignancy of description, "is a *short fit of madness*, and he that is passionate and furious deprives himself of his reason, spoils his understanding, and helps to make himself a fool." And Dr. Cogan, while more exact, is not much less emphatic: "Anger is the strong passion or emotion, impressed or excited by a sense of injury received or in contemplation; that is, by the idea of something of a pernicious nature and tendency, being done or intended, in violation of some supposed obligation to a contrary conduct."(*h*)

§ 119. "A morbid paroxysm of anger," Dr. Rush tells us, "appears in a preternatural determination of the blood to the brain, a turgescence of the bloodvessels of the face, a redness of the eyes, an increased secretion of saliva, which is discharged by foaming at the mouth, great volubility or a total suppression of speech, agitations of the fists, stamping of the feet, uncommon bodily strength, convulsions, hysteria, bleeding at the nose, apoplexy, and death. Sometimes this disease appears with paleness, tremors, sickness at the stomach, quick respiration, puking, syncope, and asphyxia. It is in this case generally combined with fear, and hence arises the abstraction of blood from the brain, and its determination to other parts of the body."(*i*)

"Anger," says Dr. Millingen, "will vary in its symptoms according to our temperament. Thus we may observe what is called *red anger* and *pale anger*. The first is of a violent and explosive nature; it generally affects the sanguineous; the circulation of the blood is accelerated—the breathing is difficult and panting—the features flushed—the swollen veins are visibly enlarged under the integuments—the eyes flash fire, and become injected with blood—the lips contracted expose the teeth—the voice becomes hoarse—the hearing difficult—foam will occasionally issue from the mouth; in short, the features assume the character of mania, arising evidently from a congestion of blood on the brain; and under the violence of the paroxysm the angry man will know no restraint, and is indeed, for the time being, a maniac, indiscriminate in his fury and perfectly uncontrollable. Such was the case of Charles VI. of France, who, being violently incensed against the Duke of Bretagne, and burning with a spirit of malice and revenge, could neither eat, drink, nor sleep, for many days and nights, and at length became furiously mad; as he was riding on horseback, drawing his sword and striking promiscuously every one who approached him. During this paroxysm of anger the violence of an infuriated man is such that he will break and destroy everything about him. On this subject Dugald Stewart has entertained a singular notion, and fancied that in these outrageous acts, the angry man thinks that the inanimate objects that he attacks are alive. The following are his words: 'The disposition

(*f*) Schürmayer, Gericht. Med. § 519.
(*g*) Works, vol. i. ser. 4.
(*h*) Cogan on the Passions, vol. i. p. 113.
(*i*) Rush on the Mind, p. 332.

which we sometimes feel, when under the influence of instinctive resentment, to wreak our vengeance upon inanimate objects, has suggested to Dr. Reid a very curious query—whether, upon such an occasion, we may have a momentary belief that the object is alive? For my own part I confess my inclination to answer this question in the affirmative.' Now, with all due respect to the opinion of these psychologists, daily experience proves the fallacy of this doctrine; for, although such furious persons may break and demolish pots and pans, bottles and glasses, chairs and tables, they rarely expend their fury on bystanders, who would not remain as quiet as crockery or furniture, but have recourse to retaliation, with capital and interest. True, such men may beat their wives and their children, but they are more cautious with strangers; and their outrageous conduct I consider as an indication of a cowardly desire to seek revenge, rather than a resentful spirit to avenge wrongs or insults; and these outbreaks are nothing more than a manifestation of power that mankind is ever proud of possessing and displaying. And I truly must again differ in opinion with the philanthropic Dugald Stewart, when he maintains that a man wishes to punish an offender with his own hands, owing to 'a secret wish of convincing our enemy, by the magnanimity of our conduct, how much he had mistaken the object of his hatred.' I must confess that I should feel much hesitation in exposing myself to this chance of a benevolent display of magnanimity on the part of an infuriated person."(*j*)

§ 120. And a still higher metaphysical authority, Dr Reid, likens it to "a storm at sea, or a tempest in the air."(*k*) "It does not, therefore, signify

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(*j*) Mind and Matter, by J. G. Millingen, M. D., M. A., pp. 326–7–8.

(*k*) "Sæpe, mihi cum amaræ meditanti incommoda vitæ,
Spesque leves, trepidosque, metus vanosque labores,
Gaudia quæ instabili semper fucata sereno,
Non secus ac navis lato jactata profundo,
Quam venti violensque æstus canusque magister
In diversa trahunt," &c.—*Buchananus.*

Montaigue (says Sir William Hamilton), alludes to these verses in the tenth chapter of his third book, but without naming his master. He has thus puzzled his commentators.

"Nubibus Atris
Condita Nullum
Fundere possunt
Sidera lumen
Si mare volvens
Turbidus Auster
Misceat æstum,
Vitrea dudum,
Parque serenis
Unda diebus,
Mox resoluto
Sordida cœno
Visibus obstat.
Tu quoque, si vis
Lumine claro
Cernere verum,
Tramite recto
Carpere callem:
Gaudia pelle,
Pelle timorem,
Spemque fugato,
Nec dolor adsit,
Nubila mens est,
Vinctaque frenis
Hæc ubi regnant."—*Bostheus.*

anything in the mind that is constant and permanent, but something that is occasional and has a limited duration, like a storm or tempest. Passion commonly produces sensible effects, even upon the body. It changes the voice, the feature, and the gesture. The external signs of passion have in some cases a great resemblance to those of madness; in others to those of melancholy. It gives often a degree of muscular force and agility to the body, far beyond what it possesses in calm moments. The effects of passion on the mind are not less remarkable. It turns the thoughts involuntarily to the objects related to it, so that a man can hardly think of anything else. It gives often a strange bias to the judgment, making a man quick-sighted in everything that tends to inflame his passion and to justify it, but blind to everything that tends to moderate or allay it. Like a magic lantern, it raises up spectres and apparitions that have no reality, and throws false colors upon every object. It can turn deformity into beauty, vice into virtue, and virtue into vice. The sentiments of a man under its influence will appear absurd and ridiculous, not only to other men but even to himself, when the storm is spent and succeeded by a calm. Passion often gives a violent impulse to the will, and makes a man do what he knows he shall repent as long as he lives. That such are the effects of passion I think all men will agree. They have been described in lively colors by poets, orators and moralists in all ages.(*l*) But men have given more attention to the effects of passion than to its nature; and while they have copiously and elegantly described the former they have not precisely described the latter."

§ 121. Schürmayer very justly remarks that in practice, *anger* and *revenge* afford much less difficulty, because much more readily distinguishable from insanity than is *remorse*. With the more depraved, experience tells us that that malignant hatred which led to crime, is often increased after the crime is committed, and is further aggravated by displeasure at the unfavorable testimony of witnesses. The fury of such miscreants is often directed against the judge, the keepers, and all who contribute to the execution of their sentence. In the case of Carrigan, who was recently convicted in North Carolina for murder, so high did his temper run, that the defendant, immediately after the verdict of conviction was rendered, drew forth a pistol, with which he aimed a shot at the prosecuting attorney, and then shot himself.

In the fierce outburst of passion, it is quite possible to mistake a man under such circumstances for a madman, particularly where philanthropy predisposes the mind to doubt, and science and skill are not at hand to correct the first erroneous impressions. But these doubts will vanish if the examiner abstains from doing anything which may still further stimulate the passions, and pre-

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(*l*) Milton thus describes what Dr. Millingen calls *pale* anger:—

"Thus, while he spake, each passion dimm'd his face,
Thrice charg'd with *pale ire*, envy, and despair,
Which marr'd his borrow'd visage, and betray'd
Him counterfeit."

Thomson has also depicted the same state:—

"Senseless and deformed,
Convulsive anger storms at large, or *pale*
And *silent* settles into fell revenge."

serves an imperturbable composure. If after this, a severe reprimand is found, either at once, or after one or two repetitions, to make a wholesome impression, and quell the excitement, there is certainly no derangement of the faculties; for a man with mania, or under the ravings of disease, will never be restored to self-control by the voice of reason. Where the man is very wild and debased, reproaches will not always answer the purpose, and it becomes necessary to menace him with coercion. The manner in which such announcements are received will also suffice to remove all doubts of his sanity.

(3.) *Shame.*

§ 122. The feeling of *shame* may also exert a very considerable influence on the demeanor of an accused man, not entirely lost to this sensation by a long course of vice. Shame rises and sinks with the feeling of honor: "shame is the disagreeable perception of the unfavorable opinions entertained of us by others." Men of ordinary stamp, who value external honor far above the dignity of self-respect, can imagine no more dreadful fate than degradation in the eyes of the public. By injudicious treatment such individuals may be reduced to a state closely resembling insanity, particularly in the form of melancholy, which will disappear the moment a more judicious course is resorted to.

It is not necessary for us, in order to make out the similarity of symptoms between insanity and excessive shame, to find many parallels to the story told by Dr. Benton, and cited without protest by Dr. Rush, of a schoolmaster who was accidentally discovered upon a close-stool by one of his scholars, and who in consequence became deranged.(*m*)

§ 123. Dr. Rush also tells us of an American Indian, who became deranged and destroyed himself, in consequence of seeing his face in a looking-glass soon after his recovery from a violent attack of smallpox. The loss of one eye by an affray in a country tavern, which materially affected the beauty of the face, produced derangement in a young man who was afterwards a patient in the Pennsylvania Hospital. There are other facts which show the depth of this attachment to beauty, in the human mind, and the poignancy of the distress occasioned by its loss or decay. The once beautiful Lady Wortley Montague tells a friend, in one of her letters, that she had never seen herself in a looking-glass for eleven years, solely from her inability to bear the mortifying contrast between her appearance in the two extremes of her life. A clergyman in Maryland became insane in consequence of having permitted some typographical errors to escape, in a sermon which he had published on the death of General Washington.(*n*)

A young gentleman of considerable promise, of high natural and acquired attainments, had been solicited to make a speech at a public meeting, which was to take place in the town in which he resided. As he had never attempted to address extemporaneously a public body, he expressed himself extremely nervous as to the result, and asked permission to withdraw his name from the published list of speakers. This wish was not, however, complied with, as it

(*m*) Rush on the Mind, p. 38.

(*n*) Ibid. p. 40.

was thought that when the critical moment arrived he would not be found wanting even in the art of public speaking. He had prepared himself with considerable care for the attempt. His name was announced from the chair: when he rose for the purpose of delivering his sentiments. The exordium was spoken without any hesitation; and his friends felt assured that he would acquit himself with great credit. He had not, however, advanced much in his prefatory observations when he hesitated, and found himself incapable of proceeding. He then sat down, evidently excessively mortified. In this state he retired to a room where the members of the committee had previously met, and cut his throat with his penknife. He wounded the carotid artery, and died in a few minutes.(*o*)

(4.) *Grief.*

§ 124. Shakspeare very touchingly as well as naturally describes the symptoms of that species of morbid grief which becomes monomaniac by self-confinement and self-involution :—

> "Grief fills up the room of my absent child;
> Lies in his bed, walks up and down with me;
> Puts on his pretty looks, repeats his words;
> Remembers me of all his gracious parts;
> Stuffs out his vacant garments with his form;
> *Then I have reason to be fond of grief.*"

"Physicians," says Dr. Rush, "in their unsuccessful efforts to save life, are often obliged to witness this passion. It is of consequence for them, therefore, to be well acquainted with its symptoms and cure. Its symptoms are acute and chronic. The former are, insensibility, syncope, asphyxia, and apoplexy; the latter are fever, wakefulness, sighing, with and without tears, dyspepsia, hypochondriasis, loss of memory, gray hairs, marks of premature old age in the countenance, catalepsy, and madness. It sometimes brings on sudden death, without any signs of previous disease, either acute or chronic. Dissections of persons who have died of grief, show congestion in, and inflammation of the heart, with a rupture of its auricles and ventricles.(*oo*) But there are instances in which the sympathy of the heart with the whole system is so completely dissevered with grief, that the subject of it discovers not one mark of it in his countenance or behavior. On the contrary, he sometimes exhibits signs of unbecoming levity in his intercourse with the world. This state of mind soon passes away, and is generally followed by all the obvious and natural signs of the most poignant and durable grief. There is another symptom of grief which is not often noticed, and that is profound sleep. I have often witnessed it, even in mothers, immediately after the death of a child. Criminals, we are told by Mr. Akerman, the keeper of the Newgate, in London, often sleep soundly the night before their execution. The son of General Custine slept nine hours the night before he was led to the guillotine, in Paris. These facts, and many similar ones that might be mentioned, will serve to vindicate the disciples of our Saviour for a want of sympathy with him in his

(*o*) Winslow's Anatomy of Suicide, p. 64.
(*oo*) Late researches, however, indicate such cases to be very exceptional.

suffering. They slept during his agony in the garden, because their "flesh was weak," and in consequence of "sorrow having filled their hearts."(*p*)

Tears, or the capacity to weep, form no test in this respect. "How often," very beautifully says Dr. Cheyne,(*pp*) "have we, in passing through this vale of tears, heard the following lament: 'Oh, that I could only cry! I feel as if it would so relieve me! There seems nothing natural in my grief. I, who wept so bitterly for my father, have not a single tear to shed for my child.' This tearless state sometimes remains to the very end of life; and we may hear individuals, who were originally possessed of the liveliest affections, declare: 'Ever since my husband, son, or daughter died, my affections have been frozen, and my eyes dried up.' It is very generally observed, when the first bitterness of grief is overpast—when the more violent, selfish, or ecstatic stage of the passion has had time to subside—that tears will again begin to flow."

One distinction, however, may be relied on with almost certainty. Grief may be, in most cases, relieved by the counter-irritation of some affection other than that wounded; but *insanity* never. Bishop Jebb, in his one hundred and thirty-ninth letter to Mr. Knox, very touchingly illustrates this: "Mr. Wilberforce one day proposed to take me out to pass next Tuesday with our valuable friend, Mrs. H. Thornton, at Clapham. I most gladly embraced the offer. She was much affected, and spoke freely to me about her feelings. At first she had been reduced to a state of inert grief, which would have made her willingly lie down in the same bed with him that was just gone, and die with him. A sense of affection and duty to her children soon roused her from this torpor, and she then felt, and continued many days to feel, as if she were in heaven. This high-wrought feeling, however, could not long remain, and nature since has had its griefs and tears." "On this passage," says Dr. Cheyne, "we would offer the following short observation. By the 'inert' state of her grief, we understand that, though it was profound, so that she willingly would have died with her husband, yet that it was without its natural expression; there was no wailing. Then another affection was roused, and that assurance of Divine protection, which is the inheritance of the servants of God, filled her mind with gratitude and joy. Lastly, as the ecstasy subsided, and when her anguish was exhausted, nature had its 'griefs and tears.' It is always desirable that tears should come to the relief of the deeply afflicted; and it is easier to allow the first gush of grief to be over, before we attempt, by religious consideration, to moderate its poignancy."

(5.) *Home-sickness* (*Nostalgia*).(*q*)

§ 125. This often assumes a shape hardly distinguishable from *Hysteria*. Thus Goldsmith writes :—

(*p*) Rush on the Mind, pp. 346, 347.

(*pp*) Cheyne on Derangement in Connection with Religion, p. 107.

(*q*) Orfila gives the following symptoms by which Nostalgia may be recognized: Profound sadness to which succeeds a gloomy melancholy, silence and a great desire to be alone, a great indifference for everything which does not recall the objects regretted. Spasmodic contraction of the stomach, prostration of mind and body, marasmus, &c.— *Méd. Lég.*, vol. i. p. 331. Paris, 1848.

"The intrepid Swiss that guards a foreign shore,
Condemn'd to climb his mountain-cliffs no more,
If chance he hear the song, so sweetly wild,
Which, on these cliffs, his infant hours beguil'd,
Melts at the long-lost scenes, that round him rise,
And sinks a martyr to repentant sighs."

"It is remarkable," says Dr. Rush, "that this disease is most common among the natives of countries that are the least desirable for beauty, fertility, climate, or the luxuries of life. They resemble, in this respect, in their influence upon the human heart, the artificial objects of taste which are at first disagreeable, but which from habit take a stronger hold upon the appetite than such as are natural and agreeable."(*r*)

§ 126. Nostalgia, as Siebold(*s*) tells us, develops itself principally in that period of childhood approaching puberty. When the malady is of long continuance, it runs into voluntary starvation, sleeplessness, delirium, derangement of the senses, together with the usual melancholy consequences of unsatisfied desire. Sometimes symptoms of Pyromania are discoverable. Thus we are told of a girl of ten years who exposed two children, committed to her care, to the flames, under the stress of home-sickness.(*t*)

2d. *Simulated Insanity.*(*u*)

§ 127. In every case, the examining physician will be led at once to inquire, whether the apparent abnormal state of mind is real or feigned. One thing, however, must not be overlooked, and this is that impostors of this kind are but very rarely able to keep up the character of the disease assumed, with consistency, and without involving themselves in contradictions. "How hard it is on the stage," remarks Dr. Bucknill,(*uu*) "and for a few minutes only, for a man to represent the manners of a sailor, a peasant, an old man, or any other characteristic manners, so that the deception shall be acknowledged complete! But the histrionic powers of a feigning maniac or melancholic must be kept for days and weeks on the stretch in the representation of manners and modes

(*r*) Rush on the Mind, pp. 38, 39.

(*s*) Gericht. Med. § 213.

(*t*) See Jahrb. des Osterreich Staates, 15 Bd. 1834. § 597. See also the article under the head of *Heimweh*, by Jesse, in the Encyclop. Wörterp. der Med. Wissensch. Band 25. Berl. 1841. § 292.

(*u*) In relation to simulated insanity, M. Orfila says, that as there exists in the world a very false idea of madmen, the one who simulates insanity, after this idea, will perform, at every instant, contradictory and false acts; thus, he will pretend not to remember his past actions, he will not recognize those whom he knows very well, he will not make a single correct reply to questions that are addressed to him. His features will not have the expression of such a violent condition; he cannot for so long a time prevent himself from sleeping; he will play the fool particularly whilst he thinks himself observed; finally, his pretended malady will not have developed itself until he feared the pursuit of justice; it will not have been preceded by that originality of character, by those marked symptoms of moral disorder which are observable in the majority of cases of insanity.—*Méd. Lég.*, tome i. p. 400. Paris, 1848. See also Méd. Lég. J. Briand, p. 396. Paris, 1852. See on this point, Principles of Medical Psychology, being the outlines of a course of Lectures by Baron Ernest von Feuchtersleben, M. D. Vienna, 1845. Translated from the German by the late H. Evans Lloyd, Esq. Revised and edited by B. G. Babington, M. D., F. R. S., &c. London, printed for the Sydenham Society, 1847, p. 376. See, also, an article by Dr. Bucknill, 13 Am. Journ. of Ins. 354.

(*uu*) Bucknill on the Diagnosis of Insanity.

of thought far more difficult to imitate than those which are usually the subject of theatrical art. Dr. Rush is reported to have discriminated feigned from real insanity by the relative rapidity of the pulse; Dr. Knight and other writers have claimed the same power for the sense of smell. At the present day the deposits in the urine would, we suppose, be appealed to. Much reliance, however, is not to be placed upon any one, or even upon several, of the physical signs of nervous disturbance. They have a scientific but scarcely a diagnostic value. They may serve to direct the inquiries of the physician, or even to confirm his opinion founded upon other data; but standing by themselves, they are of little importance in the diagnosis of insanity."

It is important to adopt here the precautions prescribed by Schürmayer,(*v*) to watch the subject most closely when he supposes himself least observed, as at such times he generally drops his mask, which is irksome to him. In all such investigations the physician must never show the most trifling sign of doubt or hesitation; he must, on the contrary, appear to know everything, in order to discover everything, and must present a firm and imposing front in all his intercourse with the accused. Where the disease in question is of such a nature, as, if genuine, to interfere with or suspend sleep, it becomes necessary to watch the patient unobserved at night. To subject him purposely to mental irritation or excitement is improper, reprehensible, and liable to cause harm. Threats of painful medicines or operations are admissible where the processes threatened are really indicated by therapeutics, but the execution of such threats must depend upon the principles laid down in another part of this work, in reference to the tests applicable to feigned bodily diseases.

§ 128. Schürmayer gives us the following reasons for suspecting dissimulation or deception.

1. When the party has committed some act, the punishment of which he would escape by inducing a belief in his aberration of mind, in this case the comparison of the offence committed, with the form of mental disease assumed, will often suffice to confirm the suspicion.(*w*)

2. When the individual has frequently expressed an aversion to a particular occupation or profession he is expected to assume, as, for instance, that of a soldier.

3. When the general character of the party is open to imputations of malice and deceit.(*x*)

4. When it is impossible to discover any previous indications, physical or mental, of the pretended derangement of the mental faculties.(*y*)

A late German trial brings before us a state of facts well worthy of being considered by those concerned in religious and moral education. The parents of two young girls, one eleven and the other fifteen, claimed public relief on the ground that the latter were subject to epileptic fits. The patients were for months subject to medical scrutiny, and were received into an hospital,

(*v*) Gericht. Med. § 392.
(*w*) Compare Heinroth, System der psychisch gerichtlichen Medizin. Leipsic, 1825, p. 453.
(*x*) Heinroth, Medizinische Zeichenlehre. Ausgabe von Danz. Leipsic, 1812. p. 380.
(*y*) Friedreich, handbuch der gerichtlichen Psychologie, p. 155.

where, during intermission, as well as of paroxysm, they were under constant observation. The elder, in particular, was affected by the disease in its worst shape; being prostrated by convulsive attacks of extraordinary violence, which afterwards left her in a state of entire exhaustion. Suspicion, however, was aroused as to the entire sincerity of the patients, and one of the hospital officers, against the vehement protestations of the medical attendants, threatened the eldest of the two with severe discipline in case she should have another fit. The attempt was successful. No fit was repeated; and the children confessed that partly to excite sympathy, partly to obtain money, the disease had been simulated.

Now, in connection with this, observe the following remarks of Dr. Carter, in his work on the Influence of Education on Diseases of the Nervous System :—

"When once a young woman has discovered her power to produce a hysteric paroxysm at will; and has exercised it for her own gratification, without regard to the anxiety or annoyance it may entail on her friends, a very remarkable effect is speedily produced upon her whole mental and moral nature. The pleasure of receiving unwonted sympathy, once tasted, excites a desire for it that knows no bounds; and when the fits have become familiar occurrences, and cease to excite attention, their effect is often heightened by the designed imitation of some other disease." Then, in the words of Dr. Carter, "pleasure is morbidly associated with many ideas which ordinarily excite pain. The girl, though originally amiable and disinterested, derives a strange satisfaction from the sight of the anxiety, and even the distress of her friends; and thus proverbially enjoys the idea of deceiving them."

So says another writer: "A person in the shattered state of mind that follows some sudden affliction, finds the sympathy of friends excited by very demonstrative grief. This in itself to many minds is a natural outlet, and then with that strange selfish cunning which never tempts the heart so fiercely as in such moments of desolation, the paroxysms of grief are so timed as best to attract the attention and secure the sympathy of those around. When coarse ordinary grief ceases to do this, new forms of broken-heartedness are partly felt, partly feigned. Food is often refused. Sleep is rejected. Very often these conditions, from being partly affected, become wholly real. And yet, strangely enough, the sufferer, when he thinks himself unobserved, will desist from them. He will put on his mourner's air when he knows he is looked at; but when he thinks himself unobserved, will permit himself to be diverted. The only cure in such a case is for those about not to pamper the hysteria, if such it be, by petting and soothing it, otherwise it may become irradicable."

§ 129. The species of mental unsoundness most frequently imitated by the vulgar is *delirium*—which, at the same time, is that which it is the most difficult to sustain. Sheridan, with his usual tact, hit upon this when he made the mock-author in the Critic throw his heroine into precisely this stage :—

Enter Tilburina and Confidant, mad, according to custom.

Sneer. But, what the deuce, is the confidant to be mad, too?

Puff. To be sure she is; the confidant is always to do what her mistress does; weep when she weeps, smile when she smiles, go mad when she goes mad. Now, madam confidant—but keep your madness in the background, if you please.

Tilb. . . . The wind whistles—the moon rises—see,
They have kill'd my squirrel in his cage!
Is this a grasshopper?—Ha! no; it is my
Whiskerandos; you shall not keep him—
I know you have him in your pocket.
An oyster may be cross'd in love!—who says
A whale 's a bird?—Ha! did you call, my love?—
He 's here! he 's there! He 's everywhere!
Ah me! he 's nowhere! [*Exit.*

Puff. There, do you ever desire to see any body madder than that?
Sneer. Never while I live!
Puff. You observed how she mangled the metre?
Dang. Yes—egad, it was the first thing made me suspect she was out of her senses!
Sneer. And pray, what becomes of her?
Puff. She is gone to throw herself in the sea, to be sure; and that brings us at once to the scene of action, and so to my catastrophe—my sea-fight, I mean.

It is much more easy to counterfeit imbecility in its lower stages, as *in*action rather than *action* is then required.

"The feigning madman in all ages has been apt to fall into the error of believing that conduct utterly outrageous and absurd is the peculiar characteristic of insanity. The absurd conduct of the real madman does not indicate a total subversion of the intelligence; it is not utterly at variance with the reasoning processes; but it is consistent either with certain delusive ideas, or with a certain perverted state of the emotions. In the great majority of cases, feigned insanity is detected by the part being overacted in outrageousness and absurdity of conduct, and by the neglect of those changes in the emotions and propensities which form the more important part of real insanity. Sometimes mania is simulated—the man howls, raves, distorts his features and his postures, grovels on the ground, or rushes about his room and commits numberless acts of violence and destructiveness. If he has had the opportunity of observing a few cases of real insanity, and if he is a good mimic, he may succeed in inducing a person who only watches him for a few minutes to believe that he is in the presence of a case of acute mania; but if the case is watched for a few hours or days, the deception becomes apparent. No muscular endurance and no tenacity of purpose will enable a sane man to keep up the resemblance of acute mania; nature soon becomes exhausted, and the would-be patient rests, and at length sleeps. The constant agitation, accompanied by symptoms of febrile disturbance, by rapid pulse, foul tongue, dry and harsh or pallid, clammy skin, and the long-continued sleeplessness of acute mania, cannot be successfully imitated. The state of the skin alone will frequently be enough to unmask the pretender. If this is found to be healthy in feeling, and sweating from the exertion of voluntary excitement and effort, it will afford good ground for suspicion. If after this the patient is found to sleep soundly and composedly, there will be little doubt that the suspicion is correct.

"Chronic mania may be imitated; and if this should be done by an accurate observer of its phenomena, who also happens to be an excellent mimic, it cannot be denied that the imitation may deceive the most skilful alienist. It is remarkable, that two of the most perfect pictures of insanity presented to us in the plays of Shakspeare are instances of feigned madness—namely, the madness of Hamlet, assumed to escape the machinations of his uncle, and that of Edgar, in Lear, assumed to escape the persecutions of his brother. These inimitable representations of the phenomena of insanity are so perfect that in

their perusal we are insensibly led to forget that they are feigned. In both instances, however, the deception was practised by educated gentlemen; and on the authority of the great dramatic psychologist it may, perhaps, be accepted, that the phenomena of insanity may be feigned by a skilful actor like Hamlet so perfectly, that no flaw can be detected in the representation. Fortunately for the credit of psychologists, insanity is rarely feigned except by ignorant and vulgar persons, who are quite unable to construct and to act out a consistent system of disordered mind. It must be remembered that all the features of every case of insanity form a consistent whole, which it requires as much intelligence to conceive and to imitate, as it does to conceive and to imitate any dramatic character. The idea which the vulgar have of madness is of quite a different kind. They represent it as a monster, half man, half beast; the emotions they represent unchanged and human, the intellectual functions they represent entirely perverted, grovelling, and bestial. They think that madness entirely alters the character of a man's perceptions and utterly destroys his judgment, so that he not only ploughs the shore and sows salt for seed, but that he cannot recognize his own son or avoid the destruction of his life. In more homely cases it will be found that men feigning insanity pretend that they cannot read or write, or count ten correctly, or tell the day of the week, or how many children they have; they answer every question wrongly, which a real lunatic, who could be made to understand the question and to answer it at will, would certainly answer right."(*yy*)

§ 130. The physiognomy of mature madness, does not admit of imitation—though the case is otherwise with imbecility. The demeanor of the individual under threats, or even under the application of painful remedies, is a criterion of inferior value, because skilful impostors withstand the test, and because many who are really affected, particularly before the disease has assumed a settled character, manifest fear and dread of such remedies, and retain, in a considerable degree, sensibility to pain. The torpor of the stomach and bowels under the use of emetics and purgatives is equally unreliable, because the same condition is found unconnected with unsoundness of mind; of greater value is sleeplessness, which a deceiver will not long sustain after the fashion of lunatics.(*z*)

§ 131. The shortest road to certainty(*a*) is by comparing the case in hand with those recorded or experienced, and by a strict application of the inductive tests. Experience teaches that the various abnormal conditions of the mind have certain symptoms in common, by means of which they admit of being arranged in greater and smaller subdivisions, and finally of being reduced to certain clearly defined forms and combinations of forms. Although every case, to a certain extent, furnishes its own rule, yet this logical process will be of great avail in detecting dissimulation, on the one hand, or groundless imputation of insanity, on the other. The more the phenomena of a case of alleged insanity subject to examination differ from recorded observations, or the more a person of dubious insanity presents an array of symptoms at

(*yy*) Bucknill on the Diagnosis of Insanity.
(*z*) Schürmayer, Gericht. Med. § 533. See also *ante*, §§ 100, 101.
(*a*) Ellinger Ueber die anthropologischen Momente der Zurechnungsfaehigkeit, p. 97.

variance with the form of the disease to which they ought to belong, the more reason is there to guard against deception.(*b*) At the same time, it must be admitted that the science of psychical medicine has not attained such a degree of perfection, as to exclude entirely the possibility of cases arising which would not admit of being classed with any of those already observed and noted. At times they incline to mere moral perversity, and are often treated as such for years; or the disease itself is not yet clearly developed; or, finally, it has apparently ceased, or arrived at a stage in which the patient is able to control and direct his condition, as a drunkard his intoxication.(*c*)

§ 132. For various reasons, simulation is not always to be inferred from the absence of a trace of insanity at the time of the investigation.(*d*)

1. Patients, whose minds are unsound on one subject only, have the power of burying their madness in their own hearts, to such an extent as to betray no sign of derangement in the course of the examination; because it is not necessary that the disturbance of one mental function should impair the action

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(*b*) Mare, Die Geisteskrankheiten, &c., vol. i. p. 104.

(*c*) Schürmayer, Gericht. Med. § 533.

"Whether the following case was or was not one of simulation cannot yet be known; the recapture of the convict may, perhaps, hereafter determine the question. John Jakes was convicted at the Devon Easter sessions, 1855, of pocket-picking. Previous convictions having been proved, he was sentenced to four years' penal servitude. On hearing the sentence, he fell down in the dock as if in a fit of apoplexy. When removed to the gaol, he was found to be hemiplegic and apparently mindless. He, however, did some things which did not belong to dementia following apoplexy; for instance, he was designedly filthy, and even ate his own excrements. His insanity was certified by the surgeon of the gaol, and by a second medical man, and he was removed to the asylum. Notwithstanding the medical certificates of his insanity, the convicting magistrates, who knew his character as a burglar and a criminal of great ability, thought that he was feigning. Warned by their caution, I examined the man carefully. He had all the symptoms of hemiplegia: the toe dragged in walking, the uncertain grasp of the hand, a slight drawing of the features, the tongue thrust to the paralyzed side—all these symptoms were present in a manner so true to nature, that, if they were feigned, the representation was a consummate piece of acting founded upon accurate observation. In the asylum the patient was not dirty; he was tranquil and apparently demented; he had to be fed, to be dressed, and to be undressed, to be led from place to place; he could not be made to speak; he slept well. On the night of the 17th of August, 1856, he effected his escape from the asylum, in a manner which convinced the magistrates that their opinion of his simulation was just, and that he had succeeded in deceiving some four or five medical men. He converted the handle of a tin cup into a false key, wherewith he unlocked a window guard; through the window he escaped by night into the garden; from thence he clambered over a door, eight feet high, and afterwards over a wall of the same height. He got clear away, probably joined his old associates, and has never been heard of since.

"It is hard to say which is the least improbable, a representation of hemiplegia and dementia, so perfect as to deceive several men, forewarned against deception; or the escape of a really paralytic patient by the means described. It must be remembered that the patient was an accomplished housebreaker, and that things impossible to other lunatics might have been accomplished by him.

"The fifth report of the inspectors in Ireland states that several cases of feigned insanity, to defeat the ends of justice, have come under the official cognizance of the inspectors during the year. One young woman, who had murdered her husband, displayed the most extraordinary determination; although secretly watched day and night for weeks, she never deviated from the line of deception; she was, however, tried, convicted, and executed. The cases of other murderers who feigned insanity—namely, William Quinlan and John Grady—are also recorded. Unfortunately, the carefully prepared report is an official document, and not a scientific record; and, therefore, the manner in which the inspectors detected these impositions, and secured the administration of justice, is not made known to us."—*Bucknill on the Diagnosis of Insanity.*

(*d*) Compare Friedreich, p. 165.

of the others. There are many cases, which have been in part noticed, and some of which will appear in the course of the following pages, in which the sufferer is insane on one subject alone, while all the other operations of his mind proceed in their normal manner, so that any one unacquainted with the fixed idea which controls him, would pronounce him perfectly rational.(*e*)

2. It is established by experience, that lunatics, even when their disease is not that of monomania, enjoy intervals in which their understanding has not only its normal vigor, but even displays uncommon powers.(*f*)

3. A genuine mental disease may be suspended or removed by the very circumstance which gives rise to the investigation, by analogy to the cases of madmen restored to health by great mental and moral shocks, as well as of persons attempting suicide from melancholy or despair, who are cured of their folly by the impressions received while making the attempt.(*g*)

§ 133. Another consideration which must never be lost sight of in investigations of the kind is this, that a pretended mental disease may turn into a real one.(*h*) A man who makes every effort to appear deranged, may be so much affected by his efforts, that what he pretends may assume a reality in his mind, and he become in fact insane.(*i*) In conclusion, there is also a class of cases in which genuine paroxysms of madness alternate with pretended ones, which calls for especial caution in pronouncing upon them.(*j*)

§ 134. There are persons of unsound mind, who, in the incipient stages of the disease, retain sufficient consciousness to endeavor, for various reasons, to conceal their malady. A continued attentive observation of such individuals will, however, suffice, in general, to furnish the data for a correct view of the case. But even in cases of confirmed insanity, an *occult condition*, so-called, may occur, in which the madman tries and manages to conceal his ailment, or rather his impulses, fancies, and feelings. This is particularly frequent in lucid intervals and in partial insanity.(*k*) Under such circumstances, in addition to the maxims adduced under the head of dubious cases, the following suggestions will be found useful. To interrogate the patient directly to the point is of very little avail, for if he is anxious to conceal his madness, any questions will inspire him with a suspicion of the questioner which must frustrate all such efforts. More circuitous means are preferable.

1. By bringing the patient into a succession of different relations of life, and regarding closely the effect produced upon him, some indications of his fixed

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(*e*) Compare Wagner, Beitrage sur Philosophischen Anthropologie. Vienna, 1794. Vol. i. p. 114. Perfect, Annalen einer Anstalt für Wahusinnige. Hanover, 1804. p. 341. Esquirol, Note sur la monomanie homicide. Paris, 1837, p. 3.

(*f*) Muratori, Ueber die Einbildungs Kraft. Leipsic, 1785. Vol. ii. p. 8. Reil's Rapsodien, p. 76.

(*g*) Etudes Medico-Psychologiques sur l'Alienation Mentale, par L. F. E. Renaudin. Chap. ix. p. 522. Paris, 1854.

(*h*) For an interesting essay on Monomania induced by Imitation, see 1 Am. Journ. of Insan. 116. See *ante*, § 128. (*i*) Ibid. p. 172.

(*j*) Compare Neumann, Die Krankheiten des Vorstellungsvermoegens. Leipsic, 1852, p. 397. And Pye, Aufsaetze, &c., aus der gerichtlichen Arzneiwissenschaft. Third series, p. 219. And see particularly Schürmayer, § 535, whence the above observations are drawn.

(*k*) Friedreich, Diagnostik, p. 38; and his Handbuch der gerichtlichen Psychologie, p. 175.

ideas may be made to escape him. If the subject of his lunacy is thus brought into question, by contradicting his views in connection with it, the perversion of his intellect will be doubly apparent.(*kk*)

§ 135. 2. Amelung's advice is to furnish the party with pen, ink, and paper, and induce him, under some pretext or other, to write; he will not be able to refrain from setting down something which will throw more or less light on the nature of his derangement.

§ 136. 3. Heindorf proposes that the physician should narrate the patient's own history, or so much of it as he had learned or could surmise, to the patient, as the history of the physician; this is to enlist the confidence of the patient and make him suppose a parallel between his own case and that of the examiner, so that the *dulce habere socium malorum* may elicit circumstances which he would otherwise have concealed.

§ 137. 4. A similar proposal is to associate the individual with another, of equal rank, degree of education, social position, &c., with himself, as a confidant, as persons of this description generally display more frankness towards people of their own order, than towards those whom they regard as above them. This idea, however, it will be easily seen, is very difficult of practical application.

The tests which may be applied at a medico-legal examination have been noticed under a previous head.(*a*)

§ 138. Though patients of this kind may *conceal*, they can never *deny* their fixed ideas. Many persons, says Heinroth, who, in a healthy state, had no scruples in telling a large series of falsehoods, whenever their interest required it, or a confession of the truth would subject them to a disagreeable exposure, forget all this the moment they have a fixed idea to maintain. Then they overlook every advantage, and stand at no absurdity and no disgrace. To hold fast the fancy which enchains them, is their only aim. If the physician can discover this fancy, he has but to ply the party with questions in reference to it, to make him betray himself, and in many cases, disclose more than the inquirer had ever thought of investigating.(*l*)

§ 139. In this view it is peculiarly important not to lose sight of latent insanity, or *insania occulta*,(*m*) illustrations of which have been given under a previous head(*mm*). This term is used to designate an unsoundness of mind which becomes perceptible externally, and consequently to others, only by the commission of a crime, the motive of which is derived exclusively from the mental disorder. The forms it assumes may vary, as even *furor transitorius* may issue from *insania occulta*. Whatever difference of opinion exists as to the possibility and the explanation of occult insanity, the facts of experience compel us to consider such a condition as possible. But to detect and substantiate it in any given case will be attended with more or less difficulty, according to the circumstances, and must be undertaken with reference to the same criteria as were pointed out in regard to the *furor transitorius*.(*n*)

(*kk*) See *ante*, §§ 89–92. (*a*) *Ante*, § 100.

(*l*) See particularly Schürmayer, Gericht. Med. § 536; and also L. Krahmer, Handbuch der Gericht. Med. Halle, C. A. Schwetschke, 1851, § 122.

(*m*) Friedreich, 580. (*mm*) § 110. (*n*) Schürmayer, Gericht. Med. § 553.

In its special relations to medico-legal examination, *insania occulta* has been already discussed.(*nn*)

IV. Mental unsoundness as connected with derangement of the senses, and disease.

1st. *Deaf and Dumb.*(*o*)

§ 140. The *deaf and dumb*, where their infirmity is congenital, or contracted in early infancy, are always in an abnormal mental and moral condition, owing to the absence of hearing and speech, the two main faculties for the culture of the mental and moral man.(*p*) For the same reason, only this description of the deaf and dumb comes under consideration, and in every case the point of inquiry will be the degree of development of the mental and moral powers; that is to say, of the power of understanding the consequences and the wrongfulness of the act committed. What will always exert great influence, is the question whether the deaf and dumb person has received any, and what instruction; where no instruction has been efficient, there is always great reason to conclude that the psychological conditions are wanting upon which moral responsibility depends.(*q*) The most difficult part of the task is always the examination of the individual, which, to lead to a reliable result, requires the assistance of an adept—that is to say, a teacher of the deaf and dumb. In pronouncing upon such cases, it must not be forgotten that the deaf and dumb have a peculiarly irascible disposition, and that many of them, especially those whose features are marked by froward, morose, gloomy and sinister expression, and more or less resemble those of the Cretins, are born with a tendency to deceit, malice, cunning, duplicity, and cruelty.(*r*)

In regard to the form and manner in which the intellectual condition of the deaf and dumb should be examined and probed, Hoffbauer and, after him, Friedreich have given a series of directions, substantially as follows: Where the deaf and dumb person is able to understand spoken words by following the motions of the lips, the inquirer must speak distinctly and with marked articulation, so as to enable the patient to see what he says. Where oral examinations are impracticable or unsatisfactory, the scrutiny, if possible, must be made in writing, when it becomes especially important to propound simple questions, intelligible to every one. But they must not be such merely as the patient is likely to expect beforehand, for these might be answered promptly and correctly; not, however, because he has properly examined into and understood their meaning, and properly concentrated in his own thoughts the answer he returns, but because he considers the question as written down, without thinking further about it, as a request to commit to paper that which per-

(*nn*) *Ante*, § 87.

(*o*) See an interesting treatise on this point, 8 Am. Journ. of Ins. 17. L. Krahmer, Handbuch der Gericht. Med. Halle, C. A. Schwetschke, 1851, § 122.

(*p*) Friedreich Handbuch der Geritchtlichen Psychologie, p. 659.

(*q*) See J. Briand, Méd. Lég., article sur la surdi-mutité, p. 569, Paris, 1852. See also M. Orfila, Méd. Lég. sur la surdi-mutité, tome. i. p. 460. Paris, 1848. Also, Traité des maladies de l'oreille et de l'audition, par Itard, vol. xi.

(*r*) Schürmayer, Gericht. Med. § 562.

haps would be his answer if he thought at all about it. So long as these answers are correct or, if not correct, at least congruous, there is room to believe that the questions were understood by the patient, and that he is able, to a certain extent, to make himself intelligible to others by means of writing. But the contrary does not appear if his answers are incongruous. But if several answers are incongruous, and particularly if it is found that a certain number of answers are constantly repeated, no doubt remains that the individual, however capable of tracing written characters, is not able, in the proper sense of the word, either to read or write. Where it is necessary to converse with the deaf and dumb person by means of signs, and for this purpose to call in the assistance of an expert, the capacity of the latter must be so far taken into account as to obtain the assurance that he will speak and interpret according to the intention of the judicial purpose had in view; for which reason, it will be important to instruct the interpreter fully on this subject. It may also be necessary, and is declared indispensable by some,(*s*) to employ two interpreters at the hearing. It may be said, in passing, that such examinations are almost always unsatisfactory in their results. Itard is of opinion that the intellectual capacity of a deaf and dumb person should be tested by a written colloquy, and that if incapable of taking part in such communications, he is to be looked upon as lacking the necessary instruction, and idiotic. The same high authority further remarks, that if a deaf and dumb man denies having received any instruction, in the hope of escaping punishment on the score of ignorance, the proper course is to accuse him of a graver crime, and one of another character from that imputed to him,(*t*) and that, on the whole, a deaf and dumb man who understands the questions asked of him in writing, is much the same as a man entirely *compos mentis*. Marc says that when the responsibility of a deaf and dumb person who has been taught to converse, is in question, a hearing should be had, without any judicial preparation, under the form of a conversation on general subjects entirely foreign to the offence committed, from which, by an association of ideas, a transition should be effected to general questions of morals and social order.

"There is but little difference," says Orfila, "between the uninstructed deaf and dumb and the idiot, and such is the affinity existing between these two conditions of the intelligence, that more than the fortieth part of the deaf and dumb are afflicted with idiocy. It may be that this mental incapacity is the result of inaudition, or it may depend upon the same cause that paralyzed the auditive sense. It should be observed, however, that the idiot is incapable of learning, whilst the deaf and dumb, on the contrary, can receive an almost complete education. Even if the uninstructed deaf and dumb do not know all the consequences of certain criminal actions, still they are not slow in learning that these actions are censurable, and even that they are the subject of punishment."(*u*) Legally, however, though a party seeking to charge an uneducated deaf mute, has the burden on him of proving some degree of intelligence

(*s*) Kleinschrod.

(*t*) If he knows how to write, he will have immediate recourse to this method, in order to justify himself, and will thus show the whole range of his intelligence.

(*u*) Méd. Lég. tome i. p. 460. Paris, 1848.

on part of the defendant, yet when this is shown, the defendant can no longer plead his disability as a bar.

The legal position of deaf and dumb persons is as follows:—

(*a*) They can personally exercise control over property. In 1754, a woman born deaf and dumb, upon arriving at the age of twenty-one years, applied to the Court of Chancery for the possession of her real estate, and for the enjoyment of her personal estate (it is presumed that she had been previously under the control of a guardian). Upon her appearing before the Chancellor, Lord Hardwicke, he put questions to her in writing, and receiving suitable written answers, her application was granted.(*a*)

(*b*) They can take by descent, a point which we believe has never been disputed.

(*c*) When otherwise of disposing capacity, they can make a valid will.(*b*)

(*d*) Even though uneducated, if capable of intelligently bargaining (though it seems the burden of proving this is on the party seeking to charge them), they may make a valid contract, or convey real and personal estate.

The cases on this point are thus summed up by Dr. H. P. Peet, in a very interesting essay published by him in the thirteenth volume of the American Journal of Insanity:—

In Brower *v.* Fisher,(*c*) a deed was declared valid that had been made by an uneducated deaf-mute, it being shown, on inquiry by a commission of lunacy, that the grantor, though born deaf and dumb, "had sufficient intelligence for the management of himself and property, and was capable of communicating by signs and motions with persons with whom he was intimate, so as to be well understood, and of understanding them; that the jurors were of opinion that the defendant was not a lunatic, unless the fact of his having been born deaf and dumb, in judgment of law, made him a lunatic." The deaf-mute had sold his interest in his father's estate to the plaintiffs for $375, which was proved to be a fair compensation under the circumstances, being assisted in making the sale by his mother and an intimate friend. Subsequently bringing suit on the bond then given, the purchaser was advised that the deed from a deaf-mute was not valid, and appealed to the Court of Chancery for his own protection. Chancellor Kent decided that the deed was valid under the circumstances; yet that "the bill does not appear to have been filed vexatiously, but rather to obtain, for greater caution, the opinion of the court on a point which had been left quite doubtful in many of the books, and which had never received any discussion here." The Chancellor observes: "Upon the finding of the jury under the commission, in nature of a writ *de lunatico inquirendo*, I refused to appoint a *committee*, and adjudged that the defendant was not to be deemed an idiot from the mere circumstance of being born deaf and dumb. This is a clear, settled rule, and numerous instances have occurred in which such afflicted persons have demonstrably shown that they were intelligent and capable of intellectual and moral cultivation." This is quite a safe assertion, even in this country, in 1820, the date of this case. After citing conflicting

(*a*) Dickinson *v.* Blisset, 1 Dickens, 168.
(*b*) See 2 Bradford's Reports, 42, 265.
(*c*) 4 Johnson's N. Y. Chancery Reports, 441.

cases and authorities, for which we refer our readers to the volume of reports, the learned and able Chancellor goes on to say: "Perhaps, after all, the presumption, in the first instance, is, that every such person is incompetent. It is reasonable presumption, in order to insure protection and prevent fraud, and is founded on the notorious fact that the want of hearing and speech exceedingly cramps the powers and limits the range of the mind. The failure of the organs necessary for general intercourse and communion with mankind oppresses the understanding; *affigat humo divinæ particulam auræ.* A special examination, to repel the inference of mental imbecility, seems always to have been required; and this presumption was all that was intended by the civil law, according to the construction of the ecclesiastical courts; for a person born deaf and dumb was allowed to make a will, if it appeared upon sufficient proof, that he had the requisite understanding and desire. I am satisfied that the plaintiff is justly to be exempted from the charge of a groundless and vexatious inquiry; and the course is not to punish the prosecutor of a charge of lunacy with costs, if the prosecution has been conducted in good faith, and upon probable grounds. I shall, therefore, dismiss the bill without costs."

The effect of this decision seems to be that a deaf-mute from birth is, in all cases, to be presumed incompetent to make a will or a contract, till his competency is proved; and that, if he sells property, and the buyer afterwards chooses to question his competency, he must defend himself at his own costs. We submit that it would be more in accordance with reason and justice to presume his competency, as in the case of men who hear and speak, when he has among his neighbors a reputation for intelligence and ability to manage his own affairs, and more especially when he has been taught to read and write. It is to be presumed that no man would make a contract with him, unless he had such a reputation for intelligence and competency; and if the purchaser of property from a deaf-mute neglected to ascertain this point beforehand, we, with all due respect to the high authority we have cited, respectfully submit that the *laches* is his own, and that he ought to bear the costs of an inquiry which he ought to have previously made himself.

It is observable that Chancellor Kent, in the opinion before us, makes no distinction between deaf-mutes who have, and those who have not been educated. Probably, at that early day, he was hardly aware of the nature of this distinction. Indeed, it is a fact that there are some uneducated deaf-mutes more intelligent in matters concerning their own affairs than are *some* of those who have spent years in an institution; for all the care of the teacher cannot remedy the original want of capacity. Such cases are, however, rare. The fact of having been educated is one strong presumption of capacity of a deaf-mute to manage his own affairs; and if not educated, still his reputation for intelligence among his neighbors ought, as we have already observed, to be presumptive proof as to his capacity or incapacity.

The capacity of making a contract involves the capacity of making a will; and we see, in the citation just given from Chancellor Kent, he refers to the testamentary capacity conceded to deaf-mutes by "the ecclesiastical courts," where they were proved to have "the requisite understanding and desire," in illustration of the capacity of a deaf-mute to execute a valid deed. From this

decision, therefore, and from the opinion expressed by Surrogate Bradford, before referred to, we are warranted in declaring the law to be that an intelligent deaf-mute, even if unable to write, and only able to make his wishes known by signs, can make a valid will, or valid deed, or bind himself to any other obligation or contract. And we have high legal authority for adding that, whatever may be the degree of his intelligence, he is bound for, and an action can be maintained against him for, necessaries suitable to his condition, unless it appear that the person who supplied them knew of his want of ordinary intelligence, and imposed upon him.(*d*)

In the same volume of Johnson's Chancery Reports (iv. p. 168) we find a case in which a woman, "unmarried, of the age of sixty years, deaf and dumb from infancy, and of such imbecility of mind as to be incapable of defending the suit," in which she was legally a party with her brother and others, was admitted to appear and defend by guardian. No special inquiry was here made; the facts on which the application for the appointment of a guardian were founded being merely verified by affidavit. Here it will be seen the appointment of a guardian was grounded on "imbecility of mind," and not merely on the defendant's being deaf and dumb. She was doubtless uneducated, for at that date (1819) there were no deaf-mutes in the State of New York, sixty years of age, who had had the opportunity of receiving an education. Had she been educated, however, there can be no question that extreme "imbecility of mind," though it would be less likely to supervene, would, if present, be a cause for appointing a guardian.(*e*) We find a French case in point recorded by Piroux, who informs us that he was called in as an *expert*, to give advice on the question whether Frances Bowry, one of his former pupils (at Nancy, in Eastern France), was in a condition to manage her own estate, or whether it would be for her benefit to name for her a *conseil judiciare* (a sort of half-guardian). "Knowing," he says, "that this young woman has no longer father or mother, that she is obliged to live with illiterate persons, among whom her instruction cannot be continued, and, finally, that a sickness of nearly a year, which she had when in our establishment, has hindered her progress, we considered that it would be useful for her to name for her a *conseil judiciare;* and the tribunal has by a judgment confirmed our opinion."

(*e*) If *compos mentis* they can contract matrimony.(*f*)

(*d*) Baxter *v.* The Earl of Portsmouth, 7 D. and Ry. 614; 5 Barn. and Cress. 170; 2 Car. and Pay. 178.

(*e*) Since writing this paper we have examined the laws of Georgia, in which it is enacted that, "Deaf and dumb persons shall be so far considered idiots in law as to authorize the inferior court to appoint guardians, etc."—"Provided it shall be made satisfactorily to appear to said court that such deaf and dumb person or persons are incapable of managing his or her estate, or him or her or themselves." This is the only American legislative provision on this point that has come to our notice. Possibly similar provisions may exist in the laws of other States; but we believe not in those of the North, Eastern, or Middle States. By the principles and practice of the common law, courts might, without special enactment, appoint guardians for any person satisfactorily shown to be incapable of managing his estate, whether deaf and dumb or not. See 2 Johnson's N. Y. Chancery Rep. 235. It seems, then, the indignation expressed by a Georgia deaf-mute at the law just cited (Am. Annals, viii. 124) was rather unnecessary.

(*f*) Swinburne on Spousals, cited 13 Am. Journ. Insan. 127.

(*f*) They can be examined as witnesses in courts of justice; and for this purpose it is proper that their testimony should be interpreted through the medium which they best understand.(*g*)

(*g*) They are legally responsible for crimes in the same way as other persons, though in determining the question of sanity, their disability, when not removed by education, should throw on the prosecution the burden of proving them to have some degree of intelligence.(*h*)

"The favor of courts and jurists may also be justly invoked for a deaf person in cases where he has acted under erroneous impressions natural to one in his circumstances. Deaf-mutes, and deaf persons who are not quite dumb, are often suspicious and irritable, from their inability to hear and take part in what is going on around them. They sometimes take as intentional annoyance and insult gestures or practical jests, unskilfully made, which were merely intended as friendly pleasantry. Piroux records the case of Jean-Baptist Villemin, a deaf-mute of twenty-nine years, very imperfectly educated, and of feeble capacity. Placed by the wealth of his family above the necessity of manual labor, and incapable of intellectual labor, he fell into dissolute habits, wandering idle about the fields and frequenting public-houses. One night, in a tavern, he met a man named Marchand, who attempted to amuse himself and the company by making signs to the deaf-mute which the latter did not understand. Villemin indicated by a gesture that he desired to be let alone; but Marchand continued to annoy him, seizing his head, making a bite at his nose, and brandishing round his head a cane, which he then held in the attitude of firing a gun, saying to the company that he wished to invite Villemin to go a hunting. Villemin naturally lost his patience; unable to understand what was meant by Marchand, or to express his own sentiments, except by actions, he seized the aggressor, flung him on the floor, and gave him a kick on the head. Marchand was only slightly hurt. The company declared, and he admitted, that he was himself to blame; and he said he harbored no ill-will to Villemin for what had passed. Returning home, a distance of several leagues on foot, he fell sick and died of a disease of the chest, which his family chose to ascribe to the blows which he had received from Villemin—which, however, was disproved by the medical witnesses. The deaf-mute was, in the first instance, sentenced to two months' imprisonment; but, on an appeal to the *Cour Royale* of Nancy, in consideration of the unfortunate condition of Villemin, and of the brutal and inconsiderate conduct of Marchand, the term was reduced to six days.(*i*)

"Other cases may easily be supposed in which a deaf person may be led to violent conduct by his inability to hear, and to understand what is meant by others. An impatient man, for instance, requests a deaf-mute to get out of his way, and, not knowing that the latter could not hear his request, attempts to shove him aside, thus provoking a manual retort. A deaf-mute may also erroneously conceive himself wronged in making change, or in price, weight,

(*g*) Wh. Cr. Law, § 754; 13 Am. Journ. Ins. 155.

(*h*) The cases under this head are stated by Dr. Peet, in the article already referred to.

(*i*) Piroux's Journal, i. 46, 59.

or measure, and break out into violence. In such cases, we are confident, there are very few who would undertake a prosecution for violence by a deaf-mute, after becoming aware of his peculiar circumstances.

"The disposition of courts and juries to mitigate the punishment of an uneducated deaf-mute criminal has been shown in France and Germany in several cases of murder, some of them of an aggravated character; for it is notorious that deaf-mutes who have grown to maturity without instruction are too often passionate and vindictive. Bebian relates the case of Pierre Sauron, an uneducated deaf-mute of the department of Cantal, who had formed an illicit connection with the daughter of a neighbor. The father, scandalized by such a connection with a dumb man, undertook to put a stop to it by sending his daughter out of the country. For this Sauron manifested the most implacable resentment, and finally waylaid and murdered him. The sentence was hard labor for life: for the like crime one not deaf and dumb would have been sent to the guillotine. When the sentence was explained to the deaf-mute, he declared he would rather be put to death.

"Another case we find thus related in the Ninth Report of the Deaf and Dumb Institution of Hamburgh, Germany.

"At Cologne, on the 14th and 15th of August, 1829, the royal Court of Assizes was occupied by an accusation against a deaf and dumb journeyman shoemaker, Johann Schmit, of Kreuznach, who, enraged at being upbraided for the defects of his work, had stabbed his master with a knife. The principal question discussed was whether the early instruction and moral and intellectual state of the deaf-mute made for or against his accountability. The jury found that the unfortunate murderer was not accountable; and he was therefore acquitted of the charge, and dismissed free into the street. This (adds the editor of the Hamburgh Report), it is to be hoped, was not without that solicitude that might secure a better education to the unfortunate man, then twenty-three years old, and sufficient precautions lest he should become possessed with the idea that he could do such acts with impunity."

"A much more aggravated case than either of the foregoing, was that of Michael Boyer, an uneducated and vagabond deaf-mute, of about twenty-seven or twenty-eight years, who was brought before the Court of Assizes of Cantal (France), under the triple charge of rape, murder, and robbery, committed on a girl of 11 years, whom he met in a lonely place, on Christmas-day, 1843, on her way to the residence of an aunt in a distant village, with whom she was to spend the winter in order to attend school. Boyer was proved to have pursued other females with evident intentions of violence, and had been, some years before, condemned to three years' imprisonment for theft. The evidence, though circumstantial, was conclusive. It is not to our purpose to detail it. We observe, however, that the prisoner, being interrogated through M. Riviere, director of the school for the deaf and dumb at Rodey, denied, energetically, the principal facts imputed to him, and succeeded in making it understood that he maintained that the blood observed on his garments came from a wound in the head, occasioned by a fall while in liquor. What plea was by his counsel set up in defence we are not informed. The jury found him guilty of the triple charge, but admitted extenuating circumstances—a verdict the effect of

which was to save the prisoner's life. He was condemned to hard labor for life, and to the *exposition publique* (pillory, or stocks).(*j*) It should be observed that the only extenuating circumstances that appear in the narrative of this fearful crime were the total deprivation of instruction, and neglected, vagabond state of the criminal.

"A similar verdict and sentence were given in the case of the deaf-mute Emmanueli, of Corsica, who had waylaid and murdered the two sisters Ristori, provoked to frenzy by the obstinate refusal of one of them to listen to his prolonged suit. He had, some years before, killed her brother in a quarrel on the same account; and it being considered that he had acted with great provocation, was only condemned to five years' imprisonment—a lenity which the commission of the second, and far more aggravated murder showed to have been misplaced.(*k*)

"The details of another French case of murder by an uneducated mute, Louis Chavanon, may be read in Beck's Medical Jurisprudence. This deaf-mute was of such a covetous and grasping disposition that he harbored the most violent enmity against any one who purchased property of his father. The deceased, Treille, having become possessed, by purchase, of the half of the house in which Chavanon lived, the latter, after repeated menaces in gestures, meeting him on the common stairs, an affray ensued which ended in the death of the unfortunate Treille. The sentence was ten years' imprisonment and a fine of one thousand francs to the widow and children of Treille.

"Another deplorable instance of the ungovernable passions of too many uneducated mutes is furnished by the case of Pierre Lafond, who, having been repeatedly detected in thefts of the property of his uncle and aunt, by whom he had been adopted and brought up, his aunt was at length provoked to the degree of following and reproaching him in the presence of a young neighbor, of whom Lafond was enamored. Watching an opportunity to execute the vengeance that rankled in his heart, he availed himself of the absence of his uncle to attack his aunt at night, in her bed, with several of the shoe-knives used by him in his trade. Her daughters, coming to her assistance, were also grievously wounded, but, providentially, none of the victims were mortally touched. Taken, a day or two afterwards, wandering in the fields, Lafond alleged, by the aid of an interpreter conversant with his signs, that he committed the act under the influence of a sudden fright and hallucination. However, neither this adroit defence nor his unfortunate position could make the jury forget the aggravating circumstances of the case. He was found guilty, and condemned to ten years at hard labor.(*l*)

"In the several French cases that have been cited (and we might have cited other similar cases from Bebian's, Piroux's, and Morel's Journals), no difficulty appears to have been experienced in relation to the formalities of a trial; the questions that were raised related to the degree of moral accountability of the deaf and dumb. But the few English and Scotch cases we have are mostly of a different character. In these cases the defence set up for deaf-mutes accused

(*j*) Morel's Annales, ii. 166–170. (*k*) Piroux's Journal, iv. 144.
(*l*) Ibid. i. 56.

of crime has generally turned on legal forms and technicalities. As this paper has already extended to an unexpected length, and as the cases to which we refer can be consulted at large in standard works, we shall restrict ourselves to brief outlines.

"In July, 1817,(*m*) Jean Campbell, an uneducated deaf and dumb woman, the mother of three children by three different fathers, was charged before the Court of Justiciary, in Edinburgh, with murdering her child by throwing it over the old bridge at Glasgow. Mr. Robert Kinniburgh, an eminent teacher of the deaf and dumb, was called in as an expert. He understood, from her signs, that she maintained that, having the child at her back, held up by her cloak, which she held across her breast with her hands, and being partially intoxicated, she had loosened her hold to see to the safety of some money in her bosom, thus allowing the child to fall over the parapet of the bridge, against which she was resting. She indignantly denied having intended to throw it in the river.

"Mr. Kinniburgh being asked whether he thought she could understand the question, whether she was guilty or not guilty of the crime of which she was accused, answered, that in the way in which he put the question, asking her by signs whether she threw the child over the bridge or not, he thought she could plead not guilty by signs, and this is the only way in which he could so put the question to her; but that he had no idea, abstractly speaking, that she knew what a trial was, but that she knew she was brought into court about her child.

"John Wood, Esq., auditor of excise (who is deaf and partially dumb), gave in a written statement upon oath, mentioning that he had visited the prisoner in prison, and was of opinion that she was altogether incapable of pleading guilty or not guilty; that she stated the circumstances by signs, in the same manner she had done to the court, when questioned before the court by Mr. Kinniburgh, and seemed to be sensible that punishment would follow the commission of a crime.

"The court were unanimously of opinion that this novel and important question, of which no precedent appeared in the law of this country [Scotland], deserves great consideration, and every information that the counsel on each side could could procure and furnish."

"At a subsequent period the judges delivered their opinion as follows:—

"Lord Hermand was of opinion that the panel (prisoner) was not a fit object of trial. She was deaf and dumb from her infancy; had had no instruction whatever; was unable to give information to her counsel, to communicate the names of her exculpatory witnesses, if she had any, and was unable to plead to the indictment in any way whatever, except by certain signs which he considered no pleading whatever."

"The four other judges, however, overruled this opinion, referring especially to a case (already mentioned in a former part of this paper) that had occurred in England, in 1773, in which one Jones, who had stolen five guineas, appear-

(*m*) Beck gives this date 1807, which is a manifest error, as Mr. Kinniburgh, of the Edinburgh Institution for the Deaf and Dumb, which was first opened in 1810, was called in the case, and referred to it in his report for 1815.

ing to be deaf and dumb, and being found by the jury impanelled on that point to be mute 'from the visitation of God,' was arraigned by the means of a woman accustomed to converse with him by signs, found guilty, and transported. And it was also observed that it might be for the prisoner's own good to have a trial; for if the jury found that her declaration, that she did not intend to throw her child in the river, was true, she would be acquitted and set free; whereas, if not found capable of being tried for a crime, she must be confined for life. The woman Campbell was accordingly placed at the bar, and when the question was put, Guilty or not? 'her counsel, Mr. McNeil, rose, and stated that he could not allow his client to plead to the indictment, until it was explained to her that she was at liberty to plead guilty or not. Upon it being found that this could not be done, the case was dropped, and she was dismissed from the bar *simpliciter*. Thus, though it is established that a deaf-mute is *doli capax*, no means have yet been discovered of bringing him to trial.'

"Certainly the system of laws of Scotland must be defective, under which important leading cases are decided, not on broad, general principles, but on mere formalities and technicalities.

"Beck cites two similar English cases, in each of which a deaf and dumb woman was arraigned for the murder of her illegitimate child; and both being found, on matters of form, not capable of taking a trial, were ordered to be confined in prison during the king's pleasure. The difficulty, in the first of these cases (that of Esther Dyson, at York Assizes, 1831) was, that her interpreter could not make her understand what was meant, when asked if she desired to challenge any of the jurors. We should suppose her counsel could have done that far better than she, even if more intelligent than she was, could have done it for herself. She was pronounced not of sound mind—that is, with regard to the ability to conduct her own defence with discretion. Probably compassion had as much to do with this decision as reason."(*mm*)

The manner in which deaf and dumb persons are to be arraigned has been noticed in another work.(*n*)

2d. *Blind.*

§ 141. *Blindness*(*v*) can only come in question here when it is congenital or has originated in early infancy, for then only can it exercise decisive influence on the mental and moral development. In general, however, blindness is no reason to suspend the personal responsibility of an agent; the defects of the mental and moral nature consequent upon it are not diseases; and the bearing which they have upon the degree of culpability ascribable to an act committed in violation of law, must be referred to the discretion of the court, as guided by the circumstances of each case.(*w*)

(*mm*) Essay by Dr. Peet, already cited.

(*n*) Wh. C. L. § 532.

(*v*) Schürmayer, Gericht. Med. 563; and see L. Krahmer, Handbuch de Gericht. Med. Halle, C. A. Schwetschke, 1851, § 122.

(*w*) Compare Friedreich, 676, where the learning on this subject is collected.

3d. *Epileptics.*(x)

§ 142. Epileptics, from their nervous susceptibility, and their tendency to mental alienation, should be regarded with peculiar tenderness by those to whom is committed the administration of public justice. Nor should the idea of a recent recovery ever exclude one who has been so afflicted, from that protection which would secure at least a patient investigation of the question of moral responsibility. Recent investigations, conducted by men of eminent sagacity and great opportunities of observation, have led to the conclusion that epilepsy produces not only general mental prostration, but anomalies in the entire moral and intellectual system. And although the malady sometimes coexists with great intelligence, yet the patient retains, not only during the attack, but for an indefinite period afterwards, but an imperfect use of his faculties.(y)

§ 143. *Epilepsy* consists in periodical attacks of insensibility, accompanied with involuntary, convulsive, and more or less violent motions of the limbs. That persons committing a violation of law while in this condition, are entitled to the full benefit of all the considerations which affect the responsibility of the agent, needs no argument after what has been already said on the subject of unsoundness of mind. The case, however, admits of more difficulty when the question is whether, in the interval between the attacks, a state of mind does or does not exist calculated to destroy or diminish responsibility.(z)

§ 144. It will be peculiarly necessary, here, to make a division between the several classes of epileptic diseases. The infirmity is well known to appear in very different degrees of intensity, under different circumstances, and as it arises from different physical causes, it may be considered as exerting different retroactive influences on the mind and the body. It may effect the intellectual faculties in a very subordinate degree, as the cases of men like Cæsar, Napoleon and Mohammed sufficiently prove. The doctrine therefore results, that *in general epilepsy, the usual presumption of responsibility applies to acts committed in the intervals between one attack and another.* In epilepsy, according to Briand, moral liberty is entirely suspended during the attacks. An epileptic who commits a homicide during the height of his disease, has had no criminal intention, and therefore cannot incur responsibility. It is also unjust to throw upon persons, thus affected, all the responsibility of actions which they may commit immediately before or after an attack, for authors are agreed in thinking, that whether these attacks occur frequently or rarely, the mind never fully recovers all its power.

§ 145. In particular cases the responsibility of the agent may be destroyed, where real symptoms of derangement present themselves, and where it is possible or probable that the offence was brought on by such abnormal state of

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(x) See L. Krahmer, Handbuch del Gericht. Med. Halle, C. A. Schwetschke, 1851, § 122; see J. Briand, Méd. Lég. p. 568, Paris, 1852; M. Orfila, Méd. Lég. tome i. p. 332, Paris, 1848; M. Fairèt, Cliniques de Médecine Mentale, p. 521, Paris, 1854.

(y) Boileau de Castlenau: De l'épilepsie dans ses rapports avec l'aliénation mentale, considérés au point de vue médico-judiciare. Annales d'Hygiène publ. et de Médecine Lég., Avril, 1842, No. 94. Erhardt-Ueber Zurechnungsfähigkeit der Epileptischen.

(z) Schürmayer, Gericht. Med. § 565.

the faculties. The higher grades of the disease, where it is of long standing, and where the attacks recur at brief intervals, cast a doubt upon the psychical requirements of responsibility, even where nothing is observed which expressly characterizes an aberration of the mental faculties. The stage which immediately precedes an attack, the premonitory symptoms of heaviness in the head, dizziness, loss of consciousness, &c., as well as that which immediately succeeds an attack, and consists in a manifest disorder of the bodily and mental functions of the subject, is to be treated as connected with the immediate attack.(*a*)

§ 146. The moral requirements of responsibility are satisfied when the disease is not of great intensity, and where the intervals show no trace of an alteration of the intellectual functions produced by it, and the incitement to the act complained of is found not in the obtuseness or ebullition generally peculiar to such patient, but in a selfish motive, and where the execution of the act betrays forethought, reflection, and wilfulness.

§ 147. Persons truly epileptic are easily excited to anger and revenge on the slightest provocation, in the intervals between their attacks. Although these attacks do not always attain to such a degree as to deserve the name of mental derangement, yet it should never be forgotten that there is always a morbid predisposition to insane ebullitions, and in general a morbid irritability, which must impair, if not destroy, the moral responsibility of actions growing out of them. And even where a sentence of punishment is pronounced, it must not be overlooked that its execution may possibly exercise a most deleterious influence on the health of the individual, by aggravating the disease, and perhaps in forcing it into real insanity. *It is not advisable, therefore, to execute a sentence of punishment upon an epileptic, without having submitted the case to the examination of a duly authorized forensic physician.*(*b*)

§ 148. Different views, however, have existed on this point. Platner(*c*) denies the responsibility of *any* epileptic whatever. Clarus(*d*) takes a view more in harmony with those we have just advanced, maintaining the following propositions :—

1. All actions and omissions which take place during the paroxysm of epilepsy, are neither valid nor the subjects of responsibility.

2. When the attack of habitual epilepsy is succeeded by, or alternates with, a state of mania or imbecility, *all* responsibility is at an end, even where this latter state is but transitory, because no human insight or experience can decide with certainty, whether the patient, at that particular instant, was in an entirely sane condition. On the other hand, there are no reasons against the validity of civil acts done under such circumstances.

3. Swooning, heaviness of the head, weakness of memory, restlessness, enhanced irritability, &c., which precede or follow the attack, destroy as well the responsibility as the validity of acts committed during their continuance.

4. Where it is capable of proof, that the epileptics, in the intervals of their

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(*a*) Schürmayer, Gericht. Med. § 567. (*b*) Ibid. § 568.
(*c*) Quaest. Med. For. p. vi.
(*d*) Beitrage zur Erkenntniss und Beurtheilung zweifelhaften Seelenzustaendu, Leipsic, 1828, p. 96.

attacks, betray symptoms of malice and obtuseness, justice demands that their faults should be regarded as effects of the disease, and that they should be held irresponsible for acts committed in an ebullition of rage or other passion, while such condition should operate in mitigation where the crime presupposes forecast and reflection.

5. Where the signs of an altered state of mind are wanting both before and after the attacks, the possibility still remains that these signs continue undetected because of their minuteness, and that patients of this description are less able to resist sudden impulses than persons in good health; which would suggest a mitigation of punishment for actions of violent passion, but not for those involving reflection.

6. All these propositions only apply to idiopathic and habitual epilepsy; not to isolated attacks, which ensue upon other diseases, and where no trace remains, after their cessation.

7. The diseases connected with epileptic symptoms, particularly hysterical spasms, accompanied with insensibility, and diseases of the generic character of St. Vitus's Dance, are subject to the rules above laid down, under the restrictions mentioned in the last head, because the presumption of a *latent* propensity to ebullitions of passion is not, in such cases, vouched by experienced.(*e*)

(*e*) Compare, on the responsibility of epileptics, Friedreich, Handbuch der gerichtlichen Psychologie, p. 637, and Henke, Abhandlungen aus dem Gebiete der gerichtlichen Medizin, vol. iv. p. 1. The Am. Journal of Insanity, vol. xii. p. 122, gives us a translation from portions of Delasiaure on Epilepsy. From this translation we extract the following passages:—

"Independently of a full appreciation of the disease in itself, and its mental consequences, the expert cannot examine too carefully the circumstances which attend the crime, the form under which it is accomplished, the motives which may have governed the epileptic, his subsequent conduct, his own plan of defence, &c. We notice, in almost all the cases reported in the public papers and judiciary debates, singularities of expression, and strange details, which make us doubt, from the first, if they emanated from a sane intelligence.

"With regard to the execution of the deed, ordinary criminals use all due precautions against discovery. It may be the same with some individuals who have acted under the impulse of an epileptic attack. More frequently, however, regardless of the effects and the morality of their actions, they make but feeble efforts at concealment. There are those who abandon themselves openly to their fury, multiplying their victims without hesitation, gloating over their bodies, and, far from being intimidated by the presence of witnesses, seem often to find in them a new cause for excitement.

"This disregard of every feeling of self-preservation, this contempt of danger, are, when found united, the best proofs of the absence of moral liberty. 'All epilepsy,' says Marc, 'warrants, upon the event of a criminal act, the suspicion of mental disorder;' and he adds, 'this suspicion is increased in absence of any strong personal motive.' With this view other authors, and in the number Orfila, with more apparent sagacity, perhaps, than actual observation, considered, on the other hand, as an evidence of culpability the intentional secrecy by which the acts were characterized.

"However, some reflections suggested by the case of the patient H——, to whom a feeling of jealousy could not have been foreign, make it obvious that it is necessary to modify this doctrine; since, in developing a peculiar irritability, ungovernable and fatal propensities, the mortal influence does not absolutely prevent the association and arrangement of ideas. Such an individual, who, in his intervals of reason and calm, would be able to control his impulses, runs the chance of yielding to them during intellectual excitement; as a man who would accomplish, under the influence of intoxication, a deed from which in cooler blood he might have recoiled. Epilepsy, judiciously remarks M. Boileau de Castelnau, destroys the power of justly estimating these prejudices, of duly appreciating their foundation, or resisting the extravagances to which they tend.

"This epileptic susceptibility does not serve as a medium only for evil propensities:

V. Mental unsoundness as connected with sleep.(*f*)

§ 149. Under this general head may be grouped *Somnolentia*, or Sleep drunkenness (Schlaftrunkenheit), *Somnambulism*, and *Nightmare*, the two

(*f*) See Méd. Lég. M. Orfila, tome i. p. 456. Paris, 1848; Méd. Lég. M. Briand, p. 563. Paris, 1852; Renaudin sur L'Alienation Mentale, Chap. 6th, p. 255. Paris, 1854; Leçon's Cliniques de M. Falret. Leçon 4th, p. 117. Paris, 1854.

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it can of itself call them directly into play, excite and foster the idea of misdeed, and lead to its fatal realization.

"A meningeal congestion, the result of numerous paroxysms, has recently carried off one of our most interesting patients. With a quick intelligence, a mild and benevolent disposition, none was more ready than he to recognize the least mark of solicitude of which he might be the object; but in the way of retaliation he was utterly ungovernable towards those who opposed his wishes. Nothing could induce him to renounce such prejudices; and even with a disposition less yielding, the burning threats to which he abandoned himself could have been easily carried into culpable execution.

"Scenes of vindictiveness and brutality, otherwise inexplicable, arise from this cause in our asylums. We had, during the past year, in our department, a poor Italian, the victim of the blind malevolence of some of his companions in misfortune, who combined to entrap him and overcome him with blows. None of the accomplices betrayed the plot. Such wanton cruelty could evidently be attributed only to morbid perversion, and a lethargic condition of moral liberty.

"The situation and conduct of epileptics after the perpetration of a crime has been justly insisted upon as a matter of importance. They generally exhibit evident indications of moral agitation. A dull expression, and a sinister lighting up of the countenance, reveal in them a vague and gloomy inquietude. The *co-ordination* of ideas is usually slow and difficult. They confess, moreover, the crime with the less reserve, as they see in it only the effect of a justifiable defence, or of an involuntary impulse, and feel grief rather than remorse, regret rather than fear. If ignorant of the fatal consequences of their madness, they receive intelligence of it with strange impassability, and, indifferent to the perils which threaten either their existence or their liberty, they neglect either to destroy the traces of their guilt, or to elude pursuit. When they fly, it is less to escape justice than the imaginary danger with which their persistent hallucinations surround them; and, finally, they make no resistance to the confinement to which they are subjected.

"Nevertheless, here, as in all opinions relative to epileptics, we must admit certain exceptions. Of those who, among others, appear to have been governed by a voluntary tendency, many appreciating the extent of the crime, not considering the influence exercised by the disease, and believing in an evil intention and in the existence of moral liberty, feel themselves under a serious responsibility. In this situation, and as epilepsy tends to exaggerate the instinct of cunning and of self-preservation, they have recourse, generally, to the artifices and subterfuges usually practised by ordinary criminals. Should the crime be evident, they appeal to their malady as an excuse. In the other case, they endeavor to obscure the truth, contradict the testimony, establish an *alibi*, and willingly conform to the plea of their counsel.

"These circumstances do not necessarily imply to the criminal action an origin absolutely independent of a morbid impulse. It does not follow that, from the apparent consciousness which the criminal may have of his fault, and the manner in which he may repel the charges of the accusation, the magistrates should infer the freedom of will, and responsibility in the commission of the act.

"There are, at times, certain accessory considerations, in reference to epilepsy, which may arise during the progress of a judicial trial. Dr. Jahn has very wisely observed, that certain sensorial impressions are of a nature, owing to the bias which they imparted to the mind, to suggest pernicious fancies. For example, the sight of bloodshed is sufficient to create in a patient, either the apprehension of criminal designs upon himself, or the imagined necessity of killing others. A young man, under the influence of his epileptic fears, saw a hatchet in an unaccustomed place, and supposed it designed for his destruction; thus showing that this instrument, to which is attached a sinister impression, had been capable of awakening a series of analogous conceptions. Who is ignorant of the strange effects of the imagination—the singularities of the imitative faculty? Who has not seen that the simple reading of a notorious criminal affair—the recital of a murder, of an incendiarism, or of a suicide—lead, in predisposed organization, to the perpetration of the identical deed?

last of which may be joined.(*g*) In the forensic treatment of such maladies, each case must depend upon its own circumstances, when it will also be important for the judge to consider whether the person subject to such a disorder was properly aware of it, and of the possible consequences, and able to take the precautions by which those consequences might have been averted.

§ 150. Sleep would seem to be only a peculiar form of cerebral life, and not a negation of the life of the brain, producing consequent fatigue, exhaustion, or weakness; it is not to be supposed that the state of sleep issues out of the intellect itself, but the intellect is diverted by the peculiar change of the action of the brain into that state of existence which we call sleep. But the intellect does not sleep; nor can it ever be said that its activity diminishes during sleep; we merely cease to perceive its activity. But that the activity which involves sleep may also be morbid—abnormal—and connected with cramps or convulsive symptoms, is not to be doubted. The centripetal action of the senses is extinct during sleep, in dreams it is half active, and produces isolated, dim, and hazy sensations, forming the usual substratum of dreams. Sleep is interrupted by whatever terminates the peculiar condition of the brain upon which sleep depends; by the natural expiration of the state of the brain, by vivid and sudden impressions on the senses, and by disagreeable sensations. Now, in a certain morbid condition of the brain this awaking is not complete, and does not restore the waking state with a full and correct perception of surrounding things—but an intermediate state between sleeping and waking is produced, which resembles intoxication, and is called the *intoxication of sleep* (*schlaftrunkenheit*). This state admits of action, which is directed by the phantoms of the dream; talking in sleep being very nearly allied to waking, and dreams themselves being midway between sleeping and waking, for in the depths of sleep we no longer become conscious of dreams.(*h*) The *night-*

"Certain atmospherical conditions have also an influence. We know, especially, that intense heat, in creating a flow of blood to the brain, often produces mental disturbance. Admissions to our insane hospitals are never more frequent than during the dog-days. It would, therefore, be advisable to take into consideration such an influence, if, by its coincidence with the period of the crime, it would seem to have acted upon the moral disposition of the accused.

"There would be, above all, strong reasons for believing in the absence of moral liberty, if it were proven that the epileptic had lately abandoned himself to the use of alcoholic drinks; nothing, we repeat with M. Renaudin, being more capable, not only of aggravating the attacks, but, still more, of giving rise to sinister hallucinations.

"We have now examined the principal elements of epileptic responsibility which are calculated to enlighten the judgment of magistrates. The necessity of more extended information on this subject becomes more pressing when we reflect that instances are not wanting where justice has visited with unmerited punishment those who have unhappily yielded only to a pathological instigation. In some cases the proofs are sufficiently evident to admit of an easy demonstration; in others, on the contrary, the known quantities of the problem are much more uncertain. It is here that wisdom in the judge should be united with a lively solicitude. Therefore, with the purpose of promoting the success of his examinations, upon a subject comparatively new, and which has excited but little attention, we think we are responding to an absolute necessity when we support the preceding rules by a brief exposition of several judicial causes, capable of serving as a guide in cases under analogous circumstances."

(*g*) Siebold—Lehrbuch der Gericht. Med. Berlin, 1847, § 196; L. Krahmer, Handbuch der Gericht. Med. Halle, C. A. Schwetschke, 1851, § 115.

(*h*) The following extract from the Médecine Légale, &c. J. Briand, is very pertinent to this point:—

"De même que, lorsque nous nous endormons, nous conservons encore plus ou moins

mare is grounded upon a morbid aggravation of abnormal sensations in sleep as colored by dreams; under certain external circumstances, and certain forms of transition into the state of semi-consciousness, it may lead to acts of violence. In examining such cases it is important to inquire into the existence of abnormal physical conditions, such as plethora, predisposition to congestions in the head or breast, actual congestions, diseases of the heart, abnormal plethora, suppressed hæmorrhoids, eruptions of the skin, or other habitual secretions which have been driven in, nervous affections of various kinds, impure air in the bed-room, a hearty meal, or indulgence in ardent spirits immediately or shortly before going to sleep. *Somnambulism* is not a mere intensified dream, but *in foro medico*, must be treated as a morbid independent state, and in a legal point of view, every act shown to have been committed under its influence is to be disconnected with voluntary moral agency.(*i*)

1st. *Somnolentia, or Sleep-drunkenness.*

§ 151. Sleep-drunkenness may be defined to be the lapping over of a profound sleep on the domains of apparent wakefulness, producing an involuntary intoxication on the part of the patient, which destroys at the time his moral agency. Under the name of *Somnolentia*, which was given to it by Ploucquet and the consequent French writers, and of *Schlaftrunkenheit*, which it was styled by the German school, it became the subject of general discussion at the beginning of the present century. The first case in which the symptoms were unmistakably observable, was that of Buchner.(*j*) A sentry, who had fallen asleep during his watch, being suddenly aroused by the officer in command, fell upon the latter with his drawn sword, with an attack so furious that the most serious consequences were only averted by the interposition of bystanders. The result of the medical examination was, that the act was involuntary and irresponsible, being the result of a violent confusion of mind consequent upon the sudden involuntary waking from a profound sleep.

§ 152. Shortly afterwards occurred the case of a day-laborer, who killed his wife with a wagon-tire, the blow being struck immediately upon his starting up from a deep sleep, from which he was forcibly awakened. In this case, there was evidence *aliunde* that the defendant was seized when waking with a delusion that a "woman in white" had snatched his wife from his side and was carrying her away, and that his agony of mind was so great that his whole body was wet with perspiration. There was no doubt of the defendant's irre-

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longtemps l'idée des objets dont nous venons de nous occuper, et que notre imagination nous les retrace souvent dons nos rêves; de même aussi, lorsque des idées plus ou moins bizarres, plus ou moins extravagantes, se sont emparées de notre esprit pendant le sommeil, elles ne nous quittent pas tout d'un coup, quand nous nous réveillons. Pour peu que le réveil soit brusque, les premiers objets qui frappent nos sens sont modifiés por ces idées antécédentes, comme á la faible lumère de la nuit les objets qu nous voyons sont alterés par les fantômes de notre imagination. Nous sommes deja en état d'éxecuter des mouvements avec une certaine précision que nos sens ne sont pas encore completément éveillés: et souvent ces mouvements se rapportent, non pas à notre état réel, mais à celui dans lequel nous croyons être, en melant aux idées qui nous ont occupés les sensations obscures des objets qui nous environnet reellement." —*Méd. Lég.* p. 563. Paris, 1852.

(*i*) Schürmayer, Gericht. Med. § 561. (*j*) See Henke's Zeitschr. 10 B. p. 39.

sponsibility.(*k*) In this country, the case properly would fall under the head of excusable homicide by misadventure.(*l*) In point of result, these cases vary little from an early English case, in which, though there was no psychological question opened, there were the same delusions as to danger heightened by the same disturbance of mind as is produced by a sudden waking up from a deep sleep. The defendant, being in bed and asleep in his house, his maid-servant, who had hired the deceased to help her to do her work, as she was going to let her out about midnight, thought she heard thieves breaking open the door, upon which she ran up stairs to the defendant, her master, and informed him thereof. Suddenly aroused, he sprang from his bed, and running down stairs with his sword drawn, the deceased hid herself in the butlery, lest she should be discovered. The defendant's wife, observing some person there, and not knowing her, but conceiving she was a thief, cried out, "Here are they who would undo us;" and the defendant, in the paroxysm of the moment, dashing into the butlery, thrust his sword at the deceased and killed her.(*m*) The defendant was acquitted under the express instructions of the court, and the case has stood the test of the common law courts for over two hundred years, during which it has never been questioned. It is important to observe, however, that if it differs from the two cases already noticed under this head, in the increased *naturalness* of the delusion under which the defendant was laboring, it differs from them in the comparatively longer interval in which his perceptive faculties had the opportunity to arrange themselves. Let it be supposed that it was the *wife*, and not the *husband*, who had slain the deceased. Under the circumstances, the result would hardly have been different, and yet in this case the distinction between her responsibility and that of the laborer who killed his wife on the waking spasm, is simply in the *degree* of probability of delusions, which in both cases were unfounded. If in the one case, this improbability was more glaring, let it be recollected that there was much less time afforded to the patient to compose himself to a reasoning state of mind.

§ 153. Much more recently, a case has occurred which has led to the whole question being re-examined and discussed. A young man, named A. F., about twenty years of age, was living with his parents in great apparent harmony, his father and himself being alike distinguished for their extravagant devotion to hunting. In consequence of the danger of nocturnal attacks, they were in the habit of taking their arms with them into their chamber. On the afternoon of September 1st, 1839, the father and son having just returned from hunting, their danger became the subject of particular conversation. The next day the hunting was repeated, and on their return, after taking supper with the usual appearance of harmony, the family retired at about ten o'clock, the father and mother occupying one apartment, and the son the next, both father and son taking their loaded arms with them to bed. At one o'clock, the father got up to go into the entry, and on his return, jarred against the door opening into the entry, upon which the son instantly sprang up and discharging his

(*k*) Wildberg's Jahrbuch, 2 Bd. p. 32. (*l*) See Wharton on Hom. 210.
(*m*) Levet's case, Cro. Car. 438; 1 Hale, 42, 474.

gun at the father, gave the latter a fatal wound in the breast, crying at the same time, "Dog, what do you want here?" The father fell immediately to the ground, and the son, then first recognizing him, sank on the floor crying, "O! Jesus, it is my father." The evidence was, that the whole family were subject to great restlessness in their sleep, and that the defendant in particular was affected by a tendency to be easily distressed by dreams, which lasted for about five minutes on waking, before their effect was entirely dissipated. His own version of the affair was, "I must have fired the gun in my sleep; it was moonshine, and we were accustomed to talk and walk in our sleep. I recollect hearing something jar; I jumped up, seized my gun and shot where I heard the noise. I recollect seeing nothing, nor am I conscious of having spoken. The night was so bright that everything could have been seen. I must have been under the delusion that thieves had broken in." The concurrent opinions of the medical experts examined on the trial were, that the act was committed in a state of *Somnolentia* or *Sleep-drunkenness*, and that it was not that of a free and responsible agent.(*n*)

It is important to distinguish Somnolentia, or Sleep-drunkenness, which is a state which to a greater or less extent is incidental to every individual, from Somnambulism, which is an abnormal condition incident to a very few. The experience of every-day life demonstrates how much the former enters into almost every relation. Children, particularly, sometimes struggle convulsively in the effort to wake up, which often is continued for several minutes. The very exclamations, "Wake up,"—"Come to"—which are so common in addressing persons in the waking condition, are scarcely necessary to bring to the mind many recollections of cases where the waking struggle has been peculiarly protracted. Of course there are constitutions where this struggle is peculiarly distressing, just as there are constitutions in which the tendency to sleeplessness is equally marked. Dr. Krügelstein tells us of a merchant of distinction who had an irrepressible tendency to sleep in the afternoons, and yet who, whenever he was wakened up, was for a few moments overcome with a paroxysm, over which he had no control. Dr. Meister himself(*o*) relates the following phenomenon: "I was obliged to take a journey of eight miles on a very hot summer's day, my seat being with my back to the horses, and the sun directly in my face. On reaching the place of destination, and being very weary and with a slight headache, I laid myself down, with my clothes on, on a couch. I fell at once asleep, my head having slipped under the back of the settee. My sleep was deep, and, as far as I can recollect, without dreams. When it became dark, the lady of the house came with a light into the room. I suddenly awoke, but for the first time in my life, without collecting myself. I was seized with a sudden agony of mind, and picturing the object which was entering the house as a spectre, I sprang up and seized a stool, which, in my terror, I would have thrown at the supposed shade. Fortunately, I was recalled to consciousness by the firmness and tact of the lady

(*n*) Henke's Zeitschrift, 1853, vol. lxv. pp. 190–1; and see also a case of much greater doubt in Klein's Annalen der Gesetzgebung, &c. viii. B. Berlin, 1798; and Möllers gerichtliche Arzneiwissen-schaft, vol. i. 302.

(*o*) Henke's Zeitschrift, vol. lxv. 456.

herself, who, with the greatest presence of mind, succeeded in composing my attention until I was entirely awakened."

§ 154. The existence of this intermediate state between sleeping and waking, and of the "drunkenness" by which it is sometimes accompanied, is recognized by even the older elementary writers. Thus Wendler(*p*) says: "Discerni autem possit expergefactio naturalis a præternaturali. Etenim somno sensim reficitur sensibilitas animi, quæ, cum in eum evehitur gradum, ut solemnibus pistoque non fortioribus excitamentis ad cogitandum excitetur, naturalis expergefactio est; contra ubi facultate illa parum aucta, insolita incitamentorum vis animum cogit ad statum vigiliæ, præternaturalem hanc dicimus expergefactionem."

§ 155. The following tests it is important to apply in order to determine the question of responsibility:—

(*a.*) A general tendency to deep and heavy sleep must be shown, out of which the patient could only be awakened by violent and convulsive effort.

(*b.*) Before falling asleep, circumstances must be shown producing disquiet which sleep itself does not entirely compose.

(*c.*) The act under examination must have occurred at the time when the defendant was usually accustomed to have been asleep.

(*d.*) The cause of the sudden awakening must be shown. It is true that this cannot always happen, as sometimes the start may have come from a violent dream.

(*e.*) The act must bear throughout the character of unconsciousness.

(*f.*) The actor himself, when he awakes, is generally amazed at his own deed, and it seems to him almost incredible. Generally speaking, he does not seek to evade responsibility, though there are some unfortunate cases in which the wretchedness of the sudden discovery overcomes the party himself, who seeks to shelter himself from the consequences of a crime of which he was technically, though not morally, guilty.

§ 156. A late very intelligent observer, Dr. Krügelstein, has given us a critical and extended observation of those cases in which crimes have been committed in the supposed somnambulic state, in which he draws the inferences that this species of mania occurs chiefly, if not entirely, with persons who are sound sleepers and are suddenly startled by some violent exterior cause, from a sleep which, from indigestion or other causes, has been already disturbed and excited by dreams of peculiar vivacity. Such cases are universally marked with a want of consciousness in the actor, and followed, when he awakes, with entire astonishment and then violent remorse.(*q*)

§ 157. Dr. Taylor, in his admirable treatise,(*r*) gives us the following cases on the same point:—

A peddler who was in the habit of walking about the country armed with a sword-stick, was awakened one evening, while lying asleep on the high road, by a man who was accidentally passing, seizing him and shaking him by the

(*p*) Dissertatio de Somno. Lipsiæ, 1805, p. 23.
(*q*) Krügelstein, Ueber die in Zustande der Schlaftrunkenheit verübten Gewaltthätigkeiten in gerichtsarztlicher Beziehung.
(*r*) Med. Jur. 599, 600.

shoulders. The peddler suddenly awoke, drew his sword and stabbed the man, who afterwards died. He was tried for manslaughter. His irresponsibility was strongly urged by his counsel on the ground that he could not have been conscious of an act perpetrated in a half-waking state. This was strengthened by the opinion of the medical witness. The prisoner was, however, found guilty. Under such circumstances it was not unlikely that an idea had arisen on the prisoner's mind that he had been attacked by robbers, and therefore stabbed the man in self-defence.(*s*)

Dr. Hartshorne, in a note, tells us that a somewhat similar case occurred in Philadelphia, a few years back, in which a man was shot with a pistol by an acquaintance, whom he had suddenly aroused from sleep, late at night, in an open market house. The plea was, that the deceased was mistaken for a robber when the pistol was fired; but the jury found a verdict of manslaughter.

§ 158. Two persons, in a case cited by Mr. Best, who had been hunting during the day, slept together at night. One of them was renewing the chase in a dream, and imagining himself present at the death of the stag, cried out "I'll kill kim! I'll kill him!" The other, awakened by the noise, got out of bed, and by the light of the moon beheld the sleeper give several deadly stabs with a knife, in that part of the bed which his companion had just quitted. Suppose a blow, given in this way, had proved fatal, and the two men had been shown to have quarrelled previously to retiring to rest! But a defence of this kind, as is well remarked by Dr. Taylor, may be unduly strained. Thus, where there is an enmity, with a motive for the act of homicide, the murderer while sleeping in the same room may select the night for an assault, and perpetrate the act in darkness in order the more effectually to screen himself. In the case of Reg. *v.* Jackson,(*t*) it was urged in defence that the prisoner, who slept in the same room with the prosecutor, had stabbed him in the throat, owing to some sudden impulse during sleep; and the case of Milligan, above given, was quoted by the learned counsel, in support of the view that the prisoner was irresponsible for the act. It was proved, however, that the prisoner had shown malicious feeling against the prosecutor, and that she wished him dead. The knife with which the wound had been inflicted bore the appearance of having been recently sharpened, and the prisoner must have reached over her daughter (the prosecutor's wife), who was sleeping in the same bed with him, in order to produce the wound. These facts are quite adverse to the supposition of the crime having been perpetrated under an impulse from sleep, and the prisoner was convicted. In another case, Reg. *v.* French,(*u*) it was proved that the prisoner while sleeping in the same room had killed the deceased, who was a stranger to him, under some delusion. There was, however, clear evidence that the prisoner was insane, and on this ground he was acquitted under the direction of the judge.(*v*)

(*s*) The Queen *v.* Milligan. Lincoln Aut. Assizes, 1836.
(*t*) Liverpool Autumn Ass. 1847. (*u*) Dorset Autumn Ass. 1846.
(*v*) Taylor's Med. Jurisprudence, pp. 599, 600.

2d. *Somnambulism.*(*w*)

§ 159. "Dreaming," says Dr. Rush, "is a transient paroxysm of delirium. Somnambulism is nothing but a higher grade of the same disease. It is a transient paroxysm of madness. Like madness, it is accompanied with muscular action, with incoherent or coherent conduct, and with that complete oblivion of both which takes place in the worst grade of madness. Coherence of conduct discovers itself in persons who are affected with it undertaking, or resuming certain habitual exercises or employments. Thus we read of the scholar resuming his studies, the poet his pen, and the artisan his labors, while under its influence, with their usual industry, taste, and correctness. It extended still further in the late Dr. Blacklock, of Edinburgh, who rose from his bed, to which he had retired at an early hour, came into the room where his family were assembled, conversed with them, and afterwards entertained them with a pleasant song, without any of them suspecting he was asleep, and without his retaining after he awoke the least recollection of what he had done."(*x*)

§ 160. A late authoritative writer(*y*) gives us, in great minuteness, a narrative of a young woman, a somnambulist, who, when twenty-three years old, having been previously in good health and regular in her menstruation, was seized with epilepsy in consequence of a fright produced by an attack of robbers. She soon became the victim of somnambulism, which manifested itself in all its ordinary incidents, such as deep sleep, want of memory, and firmness in her movements when under its influence. While in the somnambulic condition she had the habit of concealing articles of various kinds, the result of which was that she was charged with theft. Under the advice of Dr. Dornblüth she was finally acquitted, and under his care was gradually restored to health.

Dr. Upham gives us the following American illustration: "A farmer, in one of the counties of Massachusetts, according to the account of the matter which was published at the time, had employed himself for some weeks in the winter, thrashing his grain. One night, as he was about closing his labors, he ascended a ladder to the top of the great beams in the barn, where the rye which he was thrashing was deposited, to ascertain what number of bundles remained unthrashed, which he determined to finish the next day. The ensuing night, about two o'clock, he was heard by one of the family to arise and go out. He repaired to his barn, being sound asleep and unconscious of what he was doing, set open his barn doors, ascended the great beams of the barn where his rye was deposited, threw down a flooring, and commenced thrashing it. When he had completed it, he raked off the straw and shoved the rye to one side of the floor, and again ascended the ladder with the straw, and deposited it on some rails that lay across the great beams. He then threw down

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(*w*) E. L. Heim, vermischte med. Schriften, herausg. von A. Paetsch. Leipsic, 1836, § 336. L. Krahmer, Handbuch der Gericht. Med. Halle, C. A. Schwetschke, 1851, § 115. Siebold, Lehrbuch der Gericht. Med. Berlin, 1847, § 196.

(*x*) Rush on the Mind, pp. 302, 303.

(*y*) Dornblüth, Geschichte einer Nachtwandlerin, Henke's Zeitschrift, xxxii. 2.

another flooring of rye, which he thrashed and finished as before. Thus he continued his labors until he thrashed five floorings, and on returning from throwing down the sixth and last, in passing over part of the haymow, he fell off, where the hay had been cut down about six feet, to the lower part of it, which awoke him. He at first imagined himself in his neighbor's barn; but after groping about in the dark for a long time, ascertained that he was in his own, and at length found the ladder, on which he descended to the floor, closed his barn doors, which he found open, and returned to his house. On coming to the light he found himself in such a profuse perspiration that his clothes were literally wet through. The next morning, on going to his barn, he found that he had thrashed during the night, five bushels of rye, had raked the straw off in good order, and deposited it on the great beams, and carefully shoved the grain to one side of the floor, without the least consciousness of what he was doing, until he fell from the hay."(*z*)

"A man in this state," says Falret, "has no longer the same relations with the exterior world. He enters into movements which seem the result of the will, since he avoids blows and falls with the greatest nicety; and yet he does not seem to see, or at least his sight appears very confused. The mind is evidently in action, since somnambulists often write things which they were unable to do when awake; maintain conversation, and perform actions implying regular ideas. And yet after the attack they preserve no remembrance of their thoughts, feelings, or actions, as if consciousness had been entirely obliterated whilst it lasted."(*a*)

§ 161. The views of Abercrombie have been so long the standard on this point that we cannot refrain from giving them here in full: "Somnambulism," he says, "appears to differ from dreaming chiefly in the degree in which the bodily functions are affected. The mind is fixed in the same manner as in dreaming, upon its own impressions as possessing a real and present existence in external things; but the bodily organs are more under the control of the will, so that the individual acts under the influence of erroneous conceptions, and holds conversation in regard to them. He is also, to a certain degree, susceptible of impressions from without, through his organs of sense; not, however, so as to correct his erroneous impressions, but rather to be mixed up with them. A variety of remarkable phenomena arise out of these peculiarities, which will be illustrated by a slight outline of this singular affection. The first degree of somnambulism generally shows itself by a propensity to talk during sleep—the person giving a full and connected account of what passes before him in dreams, and often revealing his own secrets or those of his friends. Walking during sleep is the next degree, and that from which the affection derives its name. The phenomena connected with this form are familiar to every one. The individual gets out of bed; dresses himself; if not prevented, goes out of doors; walks frequently over dangerous places in safety; sometimes escapes by a window and gets to the roof of a house; after a considerable interval, returns and goes to bed; and all that has passed conveys to

(*z*) Upham on Mental Action, pp. 182, 183.

(*a*) Leçons Cliniques de l'Alienation Mentale, par M. Falret, Leçon 4, p. 121. Paris, 1854.

his mind merely the impression of a dream. A young nobleman mentioned by Hortensius, living in the citadel of Breslau, was observed by his brother, who occupied the same room, to rise in his sleep, wrap himself in a cloak, and escape by a window to the roof of the building. He there tore in pieces a magpie's nest, wrapped the young birds in his cloak, returned to his apartment, and went to bed. In the morning he mentioned the circumstance as having occurred in a dream, and could not be persuaded that there had been anything more than a dream, till he was shown the magpies in his cloak. Dr. Prichard mentions a man who rose in his sleep, dressed himself, saddled his horse, and rode to the place of a market which he was in the habit of attending once every week; and Martinet mentions a man who was accustomed to rise in his sleep and pursue his business as a saddler. There are many instances on record of persons composing, during the state of somnambulism: as of boys rising in their sleep and finishing their tasks which they had left incomplete. A gentleman at one of the English universities had been very intent during the day in composition of some verses, which he had not been able to complete: during the following night he arose in his sleep and finished his composition, then expressed great exultation, and returned to bed. In these common cases, the affection occurs during ordinary sleep; but a condition very analogous is met with, coming on in the daytime, in paroxysms, during which the person is affected in the same manner as in the state of somnambulism, particularly with an insensibility to external impressions: this presents some singular phenomena. These attacks in some cases come on without any warning; in others, they are preceded by a noise or sense of confusion in the head. The individuals then become more or less abstracted, and are either unconscious of any external impressions, or very confused in their notions of external things. They are frequently able to talk in an intelligible and consistent manner, but always in reference to the impression which is present in their own minds. They in some cases repeat long pieces of poetry, often more correctly than they can do in their waking state, and not unfrequently things which they could not repeat in their state of health, or of which they were supposed to be entirely ignorant. In other cases they hold conversations with imaginary beings, or relate circumstances or conversations which occurred at remote periods, and which they were supposed to have forgotten. Some have been known to sing in a style far superior to anything they could do in their waking state; and there are some well-authenticated instances of persons in this condition expressing themselves correctly in languages with which they were imperfectly acquainted. I had lately under my care a young lady who is liable to an affection of this kind, which comes on repeatedly during the day, and continues from ten minutes to an hour at a time. Without any warning, her body became motionless, her eyes open, fixed, and entirely insensible, and she became totally unconscious of any external impression. She has been frequently seized while playing on the piano, and has continued to play, over and over, part of a tune with perfect correctness, but without advancing beyond a certain point. On one occasion she was seized after she had begun to play from the book a piece of music which was new to her. During the paroxysm she continued the part which she had played, and repeated it five or

six times with perfect correctness; but on coming out of the attack, she could not play it without the book. During the paroxysms the individuals are, in some instances, totally insensible to anything that is said to them; but in others, they are capable of holding conversation with another person with a tolerable degree of consistency, though they are influenced to a certain degree by these mental visions, and are very confused in their notions of external things. In many cases, again, they are capable of going on with the manual occupations in which they had been engaged before the attack. This occurred remarkably in a watchmaker's apprentice mentioned by Martinet. The paroxysms on him appeared once in fourteen days, and commenced with a feeling of heat extending from the epigastrium to the head. This was followed by confusion of thought, and this by complete insensibility: his eyes were open, but fixed and vacant, and he was totally insensible to anything that was said to him, or to any external impression. But he continued his usual employment, and was always much astonished, on his recovery, to find the change that had taken place in his work since the commencement of his paroxysm. This case afterwards passed into epilepsy. Some remarkable phenomena are presented by this singular affection, especially in regard to exercises of memory and the manner in which the old associations are recalled into the mind: also, in the distinct manner in which the individuals sometimes express themselves on subjects with which they had formerly shown but an imperfect acquaintance. In some of the French cases of epidemic "extase," this had been magnified into speaking unknown languages, predicting future events, and describing occurrences of which the persons could not have possessed any knowledge. These stories seem, in some cases, to resolve themselves merely into embellishment of what really occurred, but in others there can be no doubt of connivance and imposture. Some facts, however, appear to be authentic, and are sufficiently remarkable. Two females, mentioned by Bertrand, expressed themselves during the paroxysm very distinctly in Latin. They afterwards admitted that they had some acquaintance with the language, though it was imperfect. An ignorant servant-girl, mentioned by Dr. Dewar, during paroxysms of this kind showed an astonishing knowledge of geography and astronomy; and expressed herself in her own language in a manner which, though often ludicrous, showed an understanding of the subject. The alternations of the seasons, for example, she explained by saying that the world was set *a-gee*. It was afterwards discovered that her notions on this subject had been derived from hearing a tutor giving instructions to the young people of the family. A woman who was some time ago in the Infirmary of Edinburgh on account of an affection of this kind, during her paroxysms mimicked the manner of the physicians, and repeated correctly some of their prescriptions in the Latin language. Another very singular phenomenon presented by some instances of this affection is what has been called, rather incorrectly, a state of double consciousness. It consists in the individual recollecting, during a paroxysm, circumstances which occurred in a former attack, though there was no remembrance of them during the interval. This, as well as various other phenomena connected with the affection, is strikingly illustrated in a case described by Dr. Dyce, of Aberdeen, in the Edinburgh Philosophic Transactions. The patient was a servant-girl, and

the affection began with fits of somnolency, which came upon her suddenly during the day, and from which she could, at first, be aroused by shaking, or by being taken out in the open air. She soon began to talk a great deal during the attacks, regarding things which seemed to be passing before her, as a dream; and she was not, at this time, sensible of anything that was said to her. On one occasion she repeated distinctly the baptismal service of the Church of England, and concluded with an extemporary prayer. In her subsequent paroxysms she began to understand what was said to her, and to answer with a considerable degree of consistency, though the answers were generally, to a certain degree, influenced by her hallucinations. She also became capable of following her usual employments during the paroxysm; and at one time she laid out the table correctly for breakfast, and repeatedly dressed herself and the children of the family, her eyes remaining shut the whole time. The remarkable circumstance was now discovered, that during the paroxysm she had a distinct recollection of what took place in her former paroxysms, though she had no remembrance of it during the intervals. At one time she was taken to church while under the attack, and there behaved with propriety, evidently attending to the preacher; and she was at one time so much affected as to shed tears. In the interval she had no recollection of having been at church; but in the next paroxysm she gave a most distinct account of the sermon, and mentioned particularly the part of it by which she had been so affected. This woman described the paroxysm as coming on with a cloudiness before her eyes, and a noise in the head. During the attack her eyelids were generally half-shut: her eyes sometimes resembled those of a person afflicted with amaurosis—that is, with a dilated and insensible state of the pupil, but sometimes they were quite natural. She had a dull, vacant look; but, when excited, knew what was said to her, though she often mistook the person who was speaking; and it was observed that she seemed to discern objects best which were faintly illuminated. The paroxysms generally continued about an hour, but she could often be roused out of them; she then yawned and stretched herself, like a person awaking out of a sleep, and instantly knew those about her. At one time, during the attack, she read distinctly a portion of a book which was presented to her; and she often sung, both sacred and common pieces, incomparably better, Dr. Dyce affirms, than she could do in a waking state. The affection continued to recur for about six months, and ceased when a particular change took place in her constitution.

We have another very remarkable modification of this affection, referred to by Mr. Combe, as described by Major Elliot, Professor of Mathematics in the United States Military Academy at West Point. The patient was a young lady of cultivated mind, and the affection began with an attack of somnolency, which was protracted several hours beyond the usual time. When she came out of it, she was found to have lost every kind of acquired knowledge. She immediately began to apply herself to the first elements of education, and was making considerable progress, when, after several months, she was seized with a second fit of somnolency. She was now at once restored to all the knowledge which she had possessed before the first attack, but without the least recollection of anything that had taken place during the interval. After ano-

ther interval she had a third attack of somnolency, which left her in the same state as after the first. In this manner she suffered these alternate conditions for a period of four years, with the very remarkable circumstance that during one state she retained all her original knowledge, but during the other, that only which she had acquired since the first attack. During the healthy interval, for example, she was remarkable for the beauty of her penmanship; but during the paroxysm, wrote a poor, awkward hand. Persons introduced to her during the paroxysm, she recognized only in a subsequent paroxysm, but not in the interval; and persons whom she had seen for the first time during the healthy interval, she did not recognize under the attack.(*b*)

§ 162. Carus tells us in his lectures (Leipsic, 1831) of a clergyman who was a somnambulist, who would get up in his sleep, take paper, and write out a sermon. If a passage did not please him, he would strike it out, and correct it with great accuracy. We are told by Steltzer of a somnambulist who clambered out of a garret window, descended into the next house, and killed a young girl who was asleep there.(*c*) As a counterpoise to these, we have the case of a preassumed somnambulism for the purpose of cloaking an intended crime.(*d*)

A curious example of somnambulism, observed in a monk, is mentioned by M. de Savarin, as related to him by the Prior of the convent where it happened, who was an eye-witness of the occurrence. "Very late one evening the patient somnambulist entered the chamber of the Prior, his eyes were open but fixed, the light of two lamps made no impression upon him, his features were contracted, and he carried in his hand a large knife. Going straight to the bed, he had first the appearance of examining if the Prior was there. He then struck three blows, which pierced the coverings, and even a mat which served the purpose of a mattress. In returning, his countenance was unbent, and was marked by an air of satisfaction. The next day the Prior asked the somnambulist what he had dreamed of the preceding night, and the latter answered that he had dreamed that his mother had been killed by the Prior, and that her ghost had appeared to him demanding vengeance, that at this sight he was so transported by rage, that he had immediately run to stab the assassin of his mother; that a little while after, he awoke bathed in perspiration, and very content to find he had only dreamed." M. de Savarin adds, that if under these circumstances the Prior had been killed, the monk somnambulist could not have been punished, because it would have been upon his part an involuntary murder.(*e*)

"You have all heard," said Sir William Hamilton, in one of his lectures on metaphysics, "of the phenomenon of somnambulism. In this remarkable state the various mental faculties are usually in a higher degree of power than in the natural. The patient has recollections of what he has wholly forgotten. He speaks languages of which, when awake, he remembers not a word. If he uses a vulgar dialect when out of this state, in it he employs only a correct

(*b*) Abercrombie on the Intellectual Powers, p. 238, &c.
(*c*) Steltzer, uber den Willen, Leips. 1817–8, p. 273.
(*d*) Fahner, System der Ger. Arznei. 1 Bd. p. 43.
(*e*) Physiologie du gout, tome ii. p. 3. Paris, 1834.

and elegant phraseology. The imagination, the sense of propriety, and the faculty of reasoning, are all in general exalted. The bodily powers are in high activity, and under the complete control of the will; and, it is well known, persons in this state have frequently performed feats, of which, when out of it, they would not even have imagined the possibility. And, what is even more remarkable, the difference of the faculties in the two states seems not confined merely to a difference in degree. For it happens, for example, that a person who has no ear for music when awake, shall, in his somnambulic crisis, sing with the utmost correctness and with full enjoyment of his performance. Under this affection persons sometimes lie half their lifetime, alternating between the normal and abnormal states, and performing the ordinary functions of life indifferently in both, with this distinction, that if the patient be dull and doltish when he is said to be awake, he is comparatively alert and intelligent when nominally asleep. I am in possession of three works, written during the crisis by three different somnambulists. Now it is evident that consciousness, and an exalted consciousness, must be allowed in somnambulism. This cannot possibly be denied—but mark what follows. It is the peculiarity of somnambulism—it is the differential quality by which that state is contra-distinguished from the state of dreaming—that we have no recollection, when we awake, of what has occurred during its continuance. Consciousness is thus cut in two; memory does not connect the train of consciousness in one state with the train of consciousness in the other. When the patient again relapses into the state of somnambulism, he again remembers all that had occurred during every former alternation of that state; but he not only remembers this, he recalls also the events of his normal existence; so that, whereas the patient in his somnambulic crisis, has a memory of his whole life, in his waking interval he has a memory only of half his life. At the time of Locke, the phenomena of somnambulism had been very little studied; nay, so great is the ignorance that prevails in this country in regard to its nature even now, that you will find this, its distinctive character, wholly unnoticed in the best works upon the subject. But this distinction you observe is incompetent always to discriminate the state of dreaming and somnambulism. It may be true that if we recollect our visions during sleep, this recollection excludes somnambulism, but the want of memory by no means proves that the visions we are known by others to have had, were not common dreams. The phenomena, indeed, do not always enable us to discriminate the two states. Somnambulism may exist in many different degrees; the sleep-walking from which it takes its name is only one of its higher phenomena, and one comparatively rare. In general, the subject of this affection does not leave his bed, and it is then frequently impossible to say whether the manifestations exhibited, are the phenomena of somnambulism, or of dreaming. Talking during sleep, for example may be a symptom of either, and it is often only from our general knowledge of the habits and predispositions of the sleeper, that we are warranted in referring this effect to the one and not the other class of phenomena. We have, however, abundant evidence to prove that forgetfulness is not a decisive criterion of somnambulism. Persons whom there is no reason to suspect of this affection, often manifest during sleep the strongest indications of dreaming,

and yet, when they awaken in the morning, retain no memory of what they may have done or said during the night. Locke's argument, that because we do not always remember our consciousness during sleep, we have not therefore, been always conscious, is thus on the ground of fact and analogy disproved."(*ee*)

VI. Mental unsoundness, as affecting the temperament.(*f*)

1st. *Depression.*(*g*)

§ 163. By this term may be designated a condition, which continues for a long time, even for years, without assuming the form of real aberration of mind, but which derives peculiar importance and significance in matters of penal jurisprudence, from the fact that a criminal act introduces the transition to a disordered mental state, inasmuch as it makes its appearance as the first decisive symptom, which is rapidly followed by others. It develops itself in a diminished estimation of self, in a want of self-reliance and peculiar morbid despondency.

Dr. Johnson thus describes this state in *Rasselas:* "To indulge the power of fiction, and send imagination out upon the wing, is often the sport of those who delight too much in silent speculation. He who has nothing external that can divert him, must find pleasure in his own thoughts, and must conceive himself what he is not; for who is pleased with what he is? He thus expatiates on boundless futurity, and culls from all imaginary conditions that which, for the present moment, he would most desire; amuses his desires with impossible enjoyments, and confers upon his pride unattainable dominion. The mind dances from scene to scene, unites all pleasures in all combinations, and riots in delights which nature and fortune, with all their bounty, cannot bestow. In time, some particular train of ideas fixes the attention; all other intellectual gratifications are rejected; the mind, in weariness or leisure, returns constantly to the favorite conception, and feasts on the luscious falsehood whenever she is offended with the bitterness of truth. By degrees the reign of fancy is confirmed; she grows first imperious, and in time despotic. Then fictions begin to operate as realities—false opinions fasten upon the mind—and life passes in dreams of rapture or of anguish."

The celebrated physician Boerhaave was once engaged in so profound a meditation that he did not close his eyes for six weeks. And, in general, "any fixety of thought may be considered a monomania."(*h*) Pascal being thrown down on a bridge, fancied ever after that he was standing on the brink of a terrific precipice, which appeared to him an abyss, ever ready to engulf him. So immutable was this dread, that when his friends conversed with him they were obliged to conceal the imaginary perils with chairs, on which they

(*ee*) Sir William Hamilton's Lectures on Metaphysics, p. 222.

(*f*) See Etudes Médico-Psychologiques sur l'Aliénation Mentale, par L. F. E. Renaudin, Chapter II. p. 36. Paris, 1854.

(*g*) Krahmer, Handbuch der Gericht. Med. Halle, C. A. Schwetschke. 1851, § 109; Siebold, Lehrbuch der Gericht. Med. Berlin, 1847, § 200.

(*h*) Curiosities of Medical Experience, second edition; On Ecstatic Exaltation, p. 38; Mind and Matter, by J. G. Millingen, M. D., M. A., pp. 80, 81, 82.

seated themselves, to tranquillize his perturbed mind. Archimedes, it is related, was heedless of the slaughter around him in a most dreadful siege. Father Castel, the inventor of the ocular harpsichord, spent an entire night in one position, ruminating on a thought that struck him as he was retiring to rest.(*i*)

(*i*) Morel gives the following powerful sketch of primitive or simple depression: (Traité theorique et pratique des Maladies Mentales, par M. Morel, tome i. p. 386. Paris, 1852.) As there exists a mania which shows itself rather in insanity of action than of mind (manie instinctive), so likewise there exists a state of melancholy without delirium. Without our often being able to instance other causes than those phenomena which accompany the change from adolescence to puberty, from puberty to age, and from mature age to the critical period; at the happiest periods of life, we feel a vague weariness, a motiveless fear, an indefinable sadness, which sometimes is only transitory, and at others is the starting point of the most serious disturbances. It is, says Guislain, a state of sadness, of dejection accompanied with or without the shedding of tears, without any notable aberration of imagination, intelligence or feeling. It is the heart which exclusively suffers, but soon this suffering of the heart shows itself in a prostration of all the intellectual powers, a state which absorbs all individual energy, and appears only to leave the capacity of suffering. Where is the man who has not experienced these painful feelings? and if by an effort of reasoning we are able to affix the form of continuity to these sensations, which are only sometimes fugitive, we will have a perfect idea of this intolerable state. Madame de Stael vividly touches on this in Corinne.

"She (Corinne) had taken such a horror for all the common pursuits of life that to take the least resolution, to give the least order, caused her an increase of pain. She was unable to live except in perfect inactivity. She arose, laid down, arose again, opened a book without being able to understand a line; often she remained for hours at her window, and then would walk with rapidity in her garden. At another time she would take a bouquet of flowers and try to make herself dizzy with their perfume. Time, a never ceasing pain, the feeling of existence pursued her, and she sought relief in a thousand ways from that devouring faculty of thought which did not now yield, as formerly, a variety of reflections, but one single idea, one single image, armed with cruel points that tore her heart. Every word was formed with difficulty, and often she traced words conveying no sense, words that even frightened her, when she attempted to re-read them, as if the pain of the fever was there written. Feeling herself then incapable of turning her thoughts from her own condition, she painted all that she had suffered, but it was no longer in those general ideas, those universal feelings that find a response in every heart; but it was the cry of anguish, a long monotonous cry, it was misfortune, but it was no longer genius."

When a like condition, says Guislain, is accompanied with anxieties, groanings, sobs, a desire to commit suicide, or any other determination, it is no longer in its simplest state. * * I on the contrary think that a like condition can continue in connection with the above mentioned tendencies. How else could we explain those suicides without name, those irregular actions of which we see so many examples in instinctive mania, the affection which, above all others, has the closest relation to melancholy? In the greater number of cases, these forms are distinguishable less perhaps by the diversity of the acts than by the nature of the depressive principles. We may readily admit that instinctive maniacs generally betray themselves by more froward deeds, and by more sudden and more cruelly energetic and destructive determinations than the simple hypomaniacs who rather turn against themselves their fatal homicidal impulses. In the first case also the depravity of the instincts is more often connected with the organic affections, a vicious education or a prior state of immorality, whilst in the latter class, the impulses which they themselves deplore are the harder to be understood, because (1), the individual is generally placed in the most favorable social condition; (2), his education has left nothing to be wished for, and (3), his delicate sensibility would never cause the actions to which he is irresistibly forced in this unfortunate unhealthy state, to be suspected.

This mental condition which I have often had opportunity of observing, was strikingly illustrated in the general state of a deranged female, who, in 1842, was placed under the care of M. Falret, at la Salpêtrière hospital. The patient showed no insanity in her language. Gifted with high intelligence and great tenderness of heart, belonging to a family that had suffered misfortune, but who, in the time of their prosperity had neglected nothing for her education, Virginia Mac—— A——e, who had courageously suffered the reverses of fortune, and created for herself a new position, was unable to explain the loss of her moral sensibility and the causes of an inexpressible sadness which left her no other resource but tears.

§ 164. "Depression of mind," says Reid, "may be owing to melancholy, a distemper of the mind which proceeds from the state of the body, which throws

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"The future," she writes, "which presents hope to every reasonable being, offers to my mind an abyss of evils which it is impossible for me to bear. I want nothing; the beings that I most cherish, I wish their death, because I have always seen that that which forms the happiness of others, is my affliction. I, the eldest, who should have been the consolation of the mother whom I so much loved, have caused her nothing but misery. When I experienced the incomprehensible disgust for life, then, lying beside her, I dared propose to her to set fire to the bed, in order that we might die together; she whom I have seen lose her consciousness at the idea only of seeing one of her children die, she who would still sacrifice herself if she could return to me the force and energy that are wanting, I have only the more discouraged, by constantly telling her that we were entirely without hope. The child also, who was formerly my delight, has become an object of indifference. The night is for me more sad than for a criminal whom the laws have condemned to die, because he knows that his life will soon end; whilst in spite of the despair of my soul, in spite of my disturbed sleep, I find myself every day in sound health, and yet without force and without courage. The beautiful sky that God created to delight his children, serves only to sadden still more my thoughts. I would wish to again become a child, to recover the innocence of childhood; why cannot I feel that calm which is sometimes felt in the spring immediately after the winter. I compare myself to a poor woman who has for a long time had nothing but the produce of her hands, whereby to raise up her children, and who, in spite of fatigue and watching, does not abandon them like I abandoned my Marie. I, who am only thirty-four, who am in full possession of strength and health, and who have not power of directing to any useful end the faculties imparted me by heaven."

Such was the position of a patient who now presents us the example of simple melancholy without delirium. In such cases we will observe that this state, so full of agony, is often nothing but a period of transition to systematic delirium; and we will also remark the differences existing between this primitive depression and the incubation of mania, which may, it is true, commence with depression and finish with exhalation, but which, in the greater number of cases, betrays itself in an abnormal activity, and in the development of intellectual aptitudes, which have not been before remarked in the patient. Here, on the contrary, all the faculties appear overwhelmed by the depressive principle. The occupations they most cherished are insupportable to them, and the intellectual labors in which they most excelled, they are unable to perform. The poet loses his art, and the author his skill, the mathematician notes down false numbers, and the artist and the workman no longer possess their aptness for the performance of the mechanical parts or manual of their profession. Nor can it be otherwise. Without doubt, to write and think well we must be under the influence of some emotion, but this emotion should be true and not morbid. Contentment is necessary to everything, and the most gloomy poetry must be inspired by a kind of spirit, which presupposes both energy and intellectual possessions. True grief has no natural fecundity, that which it produces is nothing but a gloomy agitation which constantly brings back the same thoughts. (See Traité Theorique et Pratique des Maladies Ment. de M. Morel, tome i. p. 336. Paris, 1852.)

Melancholy, or "Aliénation partielle depressive," as it has been called by Falret, has, as its name indicates, for its principal characteristic, a depression, slowness and prostration of all the faculties united with general anxiety. This fundamental disposition of the sensibility and intelligence, produces in the greater number of those thus affected, a crowd of analogous consequences. Everything is viewed by them in a distorted light; all their relations with the external world are changed; they look upon everything with repulsion and antipathy; they bear with difficulty the kindest remarks of their relations and friends, and consolation itself irritates them. In entire contradiction to nature, the patient cannot retire within himself. He finds nothing within but anxiety, doubt and mistrust, both of himself and others. Everything seems changed around him. He is often afflicted, and sometimes irritated by it, and thinks the alteration due to those that surround him, rather than to any personal change. Thence come irritation, anger and violence, against himself and others. He then abandons the world that injures him, and sinks into complete inactivity.

Frequently it is not only against the world in general, but against his best friends that the patient directs his suspicions, his mistrusts and his hatred. To this general state of depression, anxiety and gloominess succeed. After this comes both a physical and moral prostration, in which there is a more or less complete suspension of sensibility and intelligence.

a dismal gloom upon every object of thought, cuts all the sinews of action, and often gives rise to strange and absurd opinions in religion, or in other interesting matters. Yet, where there is real worth at the bottom, some rays of it will break forth even in this depressed state of mind. A remarkable instance of this was exhibited in Mr. Simon Brown, a dissenting clergyman in England, who, by melancholy, was led into the belief that his rational soul had gradually decayed within him, and at last was totally extinct. From this belief he gave up his ministerial function, and would not join with others in any act of worship, conceiving it to be a profanation to worship God without a soul. In this dismal state of mind he wrote an excellent defence of the Christian religion against Tindal's "Christianity as old as the Creation." To the book he prefixed an epistle, dedicatory to Queen Caroline, wherein he mentions "that he was once a man, but by the immediate hand of God for his sins, his very thinking substance has, for more than seven years, been continually wasting away, till it is wholly perished out of him, if it be not utterly come to nothing." And having heard of her Majesty's eminent piety, he begs

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Whilst the sensibility is thus oppressed and affected, the will is equally enfeebled, inactive and powerless. Indecision and slowness of resolution are frequently to be met with, to such a degree as to produce a total want of volition and incapacity of movement. We should note, however, under this head, two principal modes of reaction. In certain cases, the reaction is of no effect; the patient resembles a statue, being insensible and without will. At other times, on the contrary, he is shocked by everything that surrounds him, and reacts strongly, it may be directly, through the violence of a desire which betrays itself in action, or it may be indirectly, by an incessant instability. A constant desire to complain follows, with groans and laments, which, when it arrives at its maximum, constitutes a grade of exaltation, intermediate between melancholy and mania. Intelligence is enfeebled, and depressed like the sensibility and the will; the capacity for the generation of ideas is enfeebled, their course is diminished, their circle narrowed. The patient talks only of himself and his misfortune; he utters monotonous complaints, and sighs, or pronounces broken words. Sometimes the need of expressing ideas not being felt, he speaks only with difficulty, and sometimes even, instead of answering, he contents himself with a rude and silent movement. Sometimes, also, he speaks a great deal and to every body, but it is only to speak of himself, to give utterance to the same complaints and the same lamentations: he is *morally* what the hypochondriac is *physically*.

The physiognomy is concentrated and anxious, expressing dulness and stupidity, followed by habitual, and sometimes entire silence, and slowness of movement, carried sometimes to immobility. These external signs correspond with the internal condition we have just described, and form an exact picture of this kind of mental disease.

Among the melancholics, in fact, some feeling a general anxiety, think they have done a bad action, have committed a crime, suppose themselves reserved for severe punishments, both in this world and the other, and overwhelmed with scruples, they criminate themselves for the most innocent actions of their lives, or imagine themselves possessed by the devil and abandoned of God. Others, in consequence of the sentiment of mistrust which controls them, imagine themselves to be surrounded by spies or invisible enemies, and according to their previous ideas, their education or the age in which they live, think themselves under the power of sorcery, magic, magnetism, the police, &c. Others, entirely wrapped in their sadness, think themselves ruined, accused, dishonored or even betrayed by their relations and friends. In a word, the delirious ideas which become the centre of the greater part of the preoccupations of the intelligence and of the feelings, and which appear, at first sight, to constitute all the delirium, are in reality only the relief to the general condition which gives birth to them. In spite of their infinite variety, they all partake of the general character of the disease.

There is not, then, in Melancholy, as has often been asserted, a concentration of the attention, or even of all the moral and intellectual powers, upon one sad idea, but a general state of sadness and depression which shapes itself in one predominant idea, and manifests itself by a crowd of other morbid phenomena. (See Leçons Clinique sur l'Aliénation Mentale, de M. Falret. Leçon 9. Paris, 1854.)

the aid of her prayers. The book was published after his death without the dedication, which, however, having been preserved in manuscript, was afterwards printed in the "Adventurer." Thus this good man, when he believed that he had no soul, showed a most generous and disinterested concern for those who had souls. As depression of mind may produce strange opinions, especially in the case of melancholy, so our opinions may have a very considerable influence either to elevate or depress the mind, even where there is no melancholy. Suppose, on one hand, a man who believes that he is destined to an eternal existence; that He who made and who governs the world, maketh an account of him, and hath furnished him with the means of attaining a high degree of perfection and glory. With this man compare, on the other hand, the man who believes nothing at all, or who believes that his existence is only the play of atoms, and that after he has been tossed about by blind fortune for a few years, he shall again return to nothing. Can it be doubted that the former opinion leads to elevation and greatness of mind, and the latter to meanness and depression!"(*j*)

§ 165. "A pleasant season," says Dr. Rush, "a fine day, or even the morning sun, often suspend the disease. Mr. Cowper, who knew all its symptoms by sad experience, bears witness to the truth of this remark, in one of his letters to Mr. Haly. 'I rise,' says he, 'cheerless and distressed, and brighten as the sun goes on.' Its paroxysms are sometimes denoted 'low spirits.' They continue from a day, a week, a month, a season, to a year, and sometimes longer. The intervals differ—1, in being accompanied with preternatural high spirits; 2, in being attended with remissions only; and 3, with intermissions, or, in other words, in correctness and equanimity of mind. The extremes of high and low spirits, which occur in the same person at different times, are happily illustrated by the following case: A physician in one of the cities of Italy, was once consulted by a gentleman who was much distressed with a paroxysm of this intermitting state of hypochondriacism. He advised him to seek relief in a convivial manner, and recommended him in particular to find out a gentleman of the name of Cardini, who kept all the tables in the city, to which he was occasionally invited, in a roar of laughter. 'Alas! sir,' said the patient, with a heavy sigh, 'I am that Cardini.' Many such characters, alternately marked by high and low spirits, are to be found in all the cities in the world."(*k*)

In melancholy the patient on the one hand is fully convinced that his notions and wishes ought to be realized; but on the other he feels the impossibility of effecting their realization. He therefore makes no effort to render possible the impossible; yet he cannot resign the ideal, which he bears in his bosom; he loves his fictions, or the objects of his wishes so much, that he cannot part with them. Thus he consumes his existence in a monotonous grief; he cannot take interest in anything except the object of his sadness.(*l*)

(*j*) Reid on the Active Powers of Opinion, p. 576.
(*k*) Rush on the Mind, pp. 82, 83.
(*l*) Rauch's Psychology, 151.

2d. *Hypochondria.*(*m*)

§ 166. When the morbid despondency noticed under the last head extends to the general tone of bodily sensations, a condition is produced which we commonly call *hypochondria.* In the inferior stages the patient retains sufficient self-control to conceal and forget his condition, and proceed unhindered in his occupations; but in the higher degrees he becomes so absorbed in his bodily sensations as to exhibit it in his appearance and conduct, disregarding every effort made to raise his spirits, and reducing all his reflections to the common machinery of personal questions and answers.(*n*) As this sort of selfishness increases, the mind is often filled with envy, hatred, bitterness, suspicion, and revenge towards others, and particularly towards those in whom the patient believes himself to detect a want of sympathy, or even of respect, or whom he regards as the authors of his distress. The result of this is too apt to be a series of unjust surmises and accusations, personal ill-treatment of others, and even murderous threats and assaults against their supposed wrong-doers, as well as the commission of suicide. In the judicial scrutiny and consideration of such a case, it is essential to inquire how far and for what length of time the attention of the patient can be directed from his bodily feelings to other objects; what is his personal opinion of his own condition; whether any, and if any, what insane ideas possess his mind, and what is his general demeanor. Where the perceptive faculty was not so far involved in the progress of the disease as to falsify the impressions of the senses, and deprive the consciousness of the power of correcting them, the reasons are wanting for deciding against the responsibility of the agent; but the judge, in passing sentence, will nevertheless take into account the morbid impulse, which was a subsidiary cause in the commission of the crime.(*o*)

(*m*) See Krahmer, Handbuch der Gericht. Med. Halle, C. A. Schwetzchke, 1851, § 109; Siebold, Lehrbuch der Gericht. Med. Berlin, 1747, § 208. See De L'Hypochondrie et du Suicide. Par J. P. Palfret. Paris, 1822; Renaudin sur L'Aliénation Mentale, p. 99. Paris, 1854. See also on this point the following works: Confessions of an Hypochondriac, or the Adventures of a Hypochondriac in search of Health. Saunders & Otley, London, 1849; Review of same, Journ. of Psychol. Med. vol. iii. p. 1.

(*n*) Ellinger, p. 105.

(*o*) See the above views in Schürmayer, Gericht. Med. § 542.

The following description of the hypochondriacal character is to be found in the Médecine Légale de M. Orfila, tome i. p. 416. Paris, 1848.

Hypochondriacs are above all remarkable for their exaggerated fears upon the state of their health—and the foolish ideas they give utterance to in expressing their sufferings. Their temper is very unequal, they pass almost without motive from hope to despair, from grief to gayety—from bursts of passion to gentleness, from laughter to tears; many are timid, pusillanimous, fearful, morose, irascible, restless, hard to please, a torment and fatigue to every body. They are easily moved, a trifle vexes and agitates them, producing fears, torments, and attacks of despair. The greater number show a marked change in their affections, they are egotistical, the slightest motives cause them to pass from attachment to indifference or to hate. They are often susceptible of an exaltation or depression of spirits, of a rapid succession of the most opposite ideas and emotions, without the will being able to control the thought.

But those thus affected have a very good judgment in whatever relates to their own interests, and generally in everything which is foreign to their health, unless the disease should finish in a total loss of reason, a thing which is of very rare occurrence. It is only the character above described which renders hypochondriacs more likely to yield to fear, and more easily moved to contract engagements; suggestive and inveig-

§ 167. Sometimes, as we are told by Dr. Rush, the pain of a bodily disease suspends, for a short time, the mental distress. Mr. Boswell, in his life of Dr. Johnson, relates a story of a London tradesman who, after making a large fortune, retired into the country to enjoy it. Here he became deranged with hypochondriasis, from the want of employment. His existence became finally a burden to him. At length he was afflicted with the stone. In a severe paroxysm of this disease a friend sympathized with him. "No, no," said he, "don't pity me, for what I now feel is ease, compared with the torture of mind from which it relieves me." A woman in this city bore a child, while she was afflicted with this disease. She declared immediately afterwards that she felt no more pain from parturition than from a trifling fit of the colic. Where counteracting pains of the body are not induced by nature or accident to relieve anguish of mind, patients often inflict them upon themselves. Walking barefooted over ground covered with frost and snow was resorted to by a clergyman of great worth in England for this purpose. Carden, an eminent physician of the fifteenth century, made it a practice to bite his lips and one of his arms, in order to ease the distress of his mind. Kempfer tells us that prisoners in Japan, who often became partially deranged from distress, used to divert their mental anguish by burning their bodies with moxa; the same degree of pain, and for the same purpose, is often inflicted upon the body, by cutting and mangling it in parts not intimately connected with life. But bodily pain, whether from an accidental disease, or inflicted by patients upon themselves, is sometimes insufficient to predominate over the distress of their minds. Dr. Herberden mentions an instance of a man who was naturally so afraid of pain, that he dreaded even being bled, who in a fit of low spirits cut off his penis and scrotum with a razor, and declared after he recovered the natural and healthy state of his mind, that he felt not the least pain from that severe operation. A similar instance of insensibility to bodily pain is related by Dr. Ruggieri, an Italian physician, of a hypochondriac madman, of the name of Louvel, who fixed himself on a cross and inflicted the same wounds upon himself, as far as he was able, that had been inflicted upon our Saviour. He was discovered in this situation and taken down alive. During the paroxysms of his madness he felt no pain from dressing his wounds, but complained as soon as they were touched, in the intervals of his disease.(*p*)

Dr. Haindorft, in his German translation of Dr. Reid's "Essay on Hypochondriasis," in alluding to the possibility of a patient laboring under hypochondriasis being able, by an exercise of the power of volition, to control his morbid sensations, justly observes, "We should have fewer disorders of the mind if we could acquire more power of volition, and endeavored by our own energy to disperse the clouds which occasionally arise within our own horizon; if we *resolutely tore the first threads of the net* which gloom and ill-humor may cast around us, and made an effort to drive away the melancholy images of a morbid imagination by incessant occupation. How beneficial would it be

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ling measures exercise considerable influence upon their mind. Finally, the jealous, suspicious, irritable, headstrong character of hypochondriacs would be an extenuating circumstance, if, under a first impulse, they should commit a reprehensible act.

(*p*) Rush on the Mind, pp. 90, 91, 92.

to mankind if this truth were universally acknowledged and acted upon, viz: that our state of health, mental as well as bodily, principally depends upon ourselves!"

"By *seeming gay* we grow to what we seem."

It was the remark of a man of great observation and knowledge of the world, "Only wear a mask for a fortnight, and you will not know it from your real face."(*q*)

§ 168. A late French writer mentions the case of a rich peasant who was possessed with the idea that he was bewitched, and who complained to his medical attendant that seven devils had taken up their abode in his body. "Seven, not more?" was the physician's inquiry. "Only seven," was the reply. The physician promised him to rid him of the visitors, one each day, upon condition that for the first six he was paid twenty francs, but for the seventh, who was the chief of the band, forty. The patient agreed, and was subjected by the physician, who set apart the fee for charity, to a series of daily shocks from the Leyden jars, the seventh and last of which was so powerful as to produce a fainting fit in the supposed demoniac, who, however, awoke from it entirely freed from his delusion.(*r*)

Burns suffered much from indigestion, producing hypochondria. Writing to his friend, Mr. Cunningham, he says: "Canst thou not minister to a mind diseased? Canst thou speak peace and rest to a soul tossed on a sea of troubles, without one friendly star to guide her course, and dreading that the next surge may overwhelm her? Canst thou give to a frame, tremblingly alive to the tortures of suspense, the stability and hardihood of a rock that braves the blast? If thou canst not do the least of these, why wouldst thou disturb me in my miseries with thy inquiries after me?" From early life, the poet was subject to a disordered stomach, a disposition to headache, and an irregular action of the heart. He describes, in one of his letters, the horrors of his complaint: "I have been for some time pining under secret wretchedness. The pang of disappointment, the sting of pride, and some wandering stabs of remorse, settle on my life like vultures, when my attention is not called away by the claims of society, or the vagaries of the muse. Even in the hour of social mirth, my gayety is the madness of an intoxicated criminal under the hands of an executioner. My constitution was blasted, *ab origine*, with a deep, incurable taint of melancholy that poisoned my existence."(*s*)

3d. *Hysteria.*(*t*)

§ 169. *Hysteria*, which only attacks individuals of the female sex, or males having a feminine organization, resembles hypochondria in its mental and moral symptoms; but the nauseous and painful feelings manifest themselves

(*q*) Winslow's Anatomy of Suicide, pp. 169, 170.
(*r*) Démonomanie, singulière guerison. Annales méd. psychol. 1847.
(*s*) Winslow's Anatomy of Suicide, pp. 147–8.
(*t*) Siebold, Lehrbuch der Gericht. Med., Berlin, 1847, § 208; Krahmer, Handbuch der Gericht. Med. Halle, C. A. Schwetschke, 1851, § 110.

in convulsions, and the alternation between the different states of feeling is far more abrupt.(*u*)

(*u*) Schürmayer, Gericht. Med. § 543; Krahmer, Handbuch der Gericht. Med. Halle, C. A. Schwetschke, 1851, § 109.

Burton, in his Anatomy of Melancholy, has described this state: "They are soon tired with all things; they will now tarry, now begone; now in bed they will rise, now up, then they go to bed; now pleased, and then again displeased; now they like, by and by they dislike all, weary of all. "Sequitur nunc vivendi, nunc moriendi, cupido," saith Aurelianus. Discontented, disquieted upon every light occasion or no occasion, often tempted to make away with themselves; they cannot die, they will not live; they complain, weep, lament, and think they live a most miserable life; never was any man so bad. Every poor man they see is most fortunate in respect of them. Every beggar that comes to the door is happier than they are. Jealousy and suspicion are common symptoms of this misanthropic variety. They are testy, pettish, peevish, distrustful, apt to mistake, and ready to snarl, upon every occasion and without any cause, with their dearest friends. If they speak in jest, the hypochondriac takes it in good earnest; if the smallest ceremony be accidentally omitted, he is wounded to the quick. Every tale, discourse, whisper, or gesture, he applies to himself; or, if the conversation be openly addressed to him, he is ready to misconstrue every word, and cannot endure that any man should look steadfastly at him, laugh, point the finger, cough, or sneeze. Every question or movement works upon him and is misrepresented, and makes him alternately turn pale or red, and even sweat with distrust, fear, or anger."

And thus says Charles Lamb:—

"By myself walking,
To myself talking;
When, as I ruminate
On my untoward fate,
Scarcely seem I
Alone sufficiently:
Black thoughts continually
Crossing my privacy;
They come unbidden;
Like foes at a wedding,
Thrusting their faces
In better guests' places;
Peevish and malcontent,
Clownish, impertinent,
Dashing the merriment.
So, like the fashions,
Dim cognitions
Follow and haunt me,
Striving to daunt me;
In my heart festering,
In my ears whispering,
'Thy friends are treacherous,
Thy foes are dangerous,
Thy dreams are ominous.'

Fierce Anthropophagi,
Spectra Diaboli,
What scared St. Anthony;
Hobgoblins, Lemures,
Dreams of Antipodes,
Night-riding incubi,
Troubling the fantasy,
All dire illusions
Causing confusions;
Figments heretical,
Scruples fantastical,
Doubts diabolical.
Abaddon vexeth me,
Mahro perplexes me,
Lucifer teareth me,
Jesu! Maria! liberate nos ab his dires tentationibus inimici."—*Miscellaneous Poems*, p. 6. Ed. Moxon: 1841. Mind and Matter, by J. G. Millingen, M. D., M. A. pp. 76, 77, 78.

4th. *Melancholy.*(*v*)

§ 170. The state of depression undergoes a change, in consequence of which the complaints of bodily indisposition diminish, and the patient comes to regard his former sufferings as delusions, and his present condition as a healthy one. When such a person is found to have committed an act forbidden by the penal code, it may be assumed, without hesitation, that his liberty of action is gone. In the higher degrees of melancholy, the various gloomy and morbid feelings are accompanied by distinct imaginings, which take their character from the sort of agitation in which the disease commenced, the general opinions and character of the individual, the pursuits which last occupied him, and the dread and bitter experience which have produced them.(*w*) For all these feelings the patients seek explanations, and find them either *in themselves* (*melancholia concentrica*), or in *surrounding* things and circumstances (*melancholia peripherica*). In the *former* case they take themselves severely to task for small or inconsiderable errors, or declare, with an air of so much conviction, calmness, and firmness, as sometimes to mislead the judge himself, that they have committed great crimes, as murder, &c., and have incurred, by their own inexpiable fault, the displeasure of God and of the world, and eternal damnation. In *melancholia religiosa* they ask to be tried and punished; they complain of the loss of what is most dear to them, apprehend poverty for themselves and their families in the future, or even imagine themselves possessed by demons. In *melancholia dæmonica*, they accuse other persons of malevolence and persecution, to which they ascribe their ailments. It is characteristic of the general phase that the patient never sees surrounding things as they are, but always in a light corresponding to his gloomy frame of mind; frequently, also, this false coloring turns into a real illusion of the senses, particularly in the peripheric form of the disease, which is the reason that it so frequently ends in lunacy. The external conduct of the patients, the manner in which they execute the dictates of their wills, is very various. In *melancholia attonita* they sit motionless and speechless; in other cases, they can hardly find words enough to depict their distraction; sometimes they are perpetually in motion—*melancholia activa et errabunda.* In peripheric melancholy they scold and swear about their grievances, become noisy and excited, and resort to violent means of resistance or revenge. In this manner, melancholy often becomes the occasion of murderous assaults, and sometimes murders of the most cruel kind, as well as of suicide.(*x*)

§ 171. In a mature case falling under this head, the motives are often not

(*v*) Siebold, Lehrbuch der Gericht. Med., Berlin, 1847, § 208. Dr. Cheyne, rather jocularly than otherwise, applied the term, "The English Malady," to that species of melancholy which is most affected by the weather and by other depressing circumstances. This term has been seriously adopted by Siebold, Gericht. Med. § 212. Melancholia Anglica, sive Autochira. Fr. B. Osiander, in his interesting volume on Suicide, discusses the same topic. Hannov. 1813, 8, § 207.

(*w*) Schürmayer, Gericht. Med. § 544; compare Ellinger, p. 108; Leçons Cliniques sur l'Alienation Mentale; Falret, Leçon 7th, p. 185. Paris, 1854. Etudes Medico-Psychologiques sur l'Alienation Mentale. L. F. E. Renaudin, chap. iv. p. 178. Paris, 1854.

(*x*) The above summary is taken from Schürmayer, Gericht. Med. § 544.

even present to the consciousness, and the act is committed in a state of intoxication, blind frenzy, fury, and confusion, preceded sometimes by the almost imperceptible symptoms of silent depression, sometimes by the traces broad and deep of havoc in the affective faculties, and accompanied often by a sudden loss of self-control, visible paroxysms of terror, and a fancied pursuit by fiends.(*y*) The transition from melancholy to mania is open to the simple explanation, that depression is the first stage of psychical disease in general, and contains within itself the germs of all other phases.(*z*)

§ 172. In other cases there is also an absence of conscious motives, but in their place an uncontrollable restlessness, an indistinct but overawing feeling of dread, and an incessant morbid approach of those abnormal moral propensities which will be considered under the next head. Ellinger correctly observes,(*a*) that "impulses of this kind often excite the most desperate struggles in the mind; evoke the most various external means to overcome them; place the murderous instrument into the hands of the individual, from which reason wrests it again; drive him into solitude and far from the subject of the mad desire, and induce him to give warning to the threatened victim; to meditate and to attempt suicide; and when at last the fatal deed is nevertheless accomplished, there is a calmness and a clearness in the manner in which he anticipates the impending punishment, which to an unpractised observer must exclude every idea of an underlying mental derangement. Such subjects either betray the ordinary symptoms of depression, or only those incident to the specific propensity, which throws the consciousness into a state of distraction, and fills the mind with fear and dread. In either case, the impulse, whether preceded or not by a brief relaxation, comes suddenly, in which case it will be found in connection with disturbances of the bodily functions, among which may be enumerated cessation of the natural period or of other natural or ordinary evacuations, rush of blood to the head, exhaustion by loss of blood, protracted nursing, excesses, epilepsy, approach of severe attacks of sickness. The *immediate* occasion of the act may be the view of a naked figure, the sight of an execution, of blood, of a murderous instrument or other means of committing crimes, or the recital of such an occurrence; the *ultimate* cause is found, according to Ideler, in the associations of feelings and desires according to their contrast, and the struggle and contradiction thus arising."

§ 173. In still another order of cases, as we are told by Schürmayer, the consciousness is not only in full possession of the motives, but the act is conceived on the ground of a chain of reasoning and executed with a degree of arrangement and circumspection apparently inseparable from a clear state of the understanding. Here, as will be seen more fully hereafter, the motives are sometimes hallucinations, particularly of the ear (voices heard), which give commands to the madman, sometimes a wish to die without the courage to commit suicide directly, but with the design of incurring capital punishment by the murder of others (persons the subjects of an old grudge, or such as are entirely innocent, as children); sometimes the notion that the destruction of

(*y*) Ellinger, p. 112.
(*a*) Ellinger, p. 114.
(*z*) Schürmayer, Gericht. Med. § 545.

the world is at hand, or that a terrible misfortune impends, against which it was necessary to protect the object of particular affection, which is best effected by death. In the latter case, as will presently be more fully seen,(*b*) suicide, or self-inculpation, is common, and sometimes a vindictive feeling against the supposed authors of the person's suffering, which the mind often debates with itself for a length of time, until all doubt is removed by some new hallucination.(*c*)

Attacks of hysteria, although in appearance bearing considerable analogy to those of epilepsy, rarely produce a state of complete insensibility, and although they may last longer, they never leave behind them that bewilderment of mind. However frequently they may occur, they hardly ever produce mania or dementia, and therefore they rarely exclude responsibility.(*d*)

VII. Mental unsoundness, as affecting the moral system.

1st. *General Moral Mania.*

§ 174. As depression is based upon an unduly subdued state of the feeling of self and a want of self-confidence, so the fundamental trait of mania considered in its present relation, is an exaggeration of the feeling of self and of self-confidence.(*e*) Unsoundness of mind rarely takes this form at first; it is usually developed from depression, the mistaken idea usually reversing its purport, while the impulses of expression in some manner overstep their normal limits, compelling the will to act in a corresponding manner. Here the madman either makes constant motions with his head or his arms, or runs about until he is completely exhausted, which might be called the *madness of motion;*(*f*) or he vents his humor in gestures and declamations, or the motive impulse is confined to the tongue, and becomes morbid garrulity or *madness of the tongue.* This talkativeness is not the effect of a superabundance of ideas, but all the thoughts are uttered hastily as they occur, without being shaped or sifted, giving rise to contradiction, incoherence, and the semblance of a wandering imagination. If in the end the malady is imparted not only to the will but also to the sentiments, the undefined impulse of action and expression receives the form and color of chagrin and anger, which the sufferer supposes to be well founded and directed to real objects, and the disease becomes frenzy or fury, which may take some specific form, as that of general destructiveness, or of a thirst for blood. This also includes many unnatural cravings, such as a desire to bite, or to do something extravagant; a sort of mental or moral vertigo, which develops itself sometimes, though more rarely, in the propensity to steal. In cases of this class it is impossible for the patient to resist the morbid impulse. He has lost his self-possession, that

(*b*) *Post*, §§ 206–208, 247–253.
(*c*) Schürmayer, § 547; Ellinger, p. 116; Siebold, Lehrbuch der Gericht. Med. Berlin, 1847, § 208; Krahmer, Handbuch der Gericht. Med. Halle. C. A. Schwetschke, 1851, § 110.
(*d*) Briand, Méd. Lég. p. 569. Paris, 1852.
(*e*) See Schürmayer, Gericht. Med. § 548.
(*f*) Compare Hagen in R. Wagner's Handworterbuch der Physiologie, vol ii. p. 819.

is, the power of contrasting the necessary consequences of the action with his present position and its requirements, and the calculations of prudence, as well as the impulses of conscience, are alike unheeded. The morbid sentiment thus controls his entire perceptive faculty, admitting of no other perception in connection with the subject, and cutting off all reflection, all doubt of the fitness of the action and its relation to the laws of the land.(*g*)

§ 175. In the lower stages of mania there is generally so much external self-control, and such a connection and logical consistency in the ideas, that the process of mental evolution becoming more compact and rapid, produces a vivacity of combination, of memory, and imagination, which a layman is not easily induced to suspect to arise from a disorder of the reasoning faculties, particularly when external circumstances concur to furnish an explanation of the condition in which the person is found. This may throw difficulties around the medico-legal consideration of such a case, and under such circumstances the true view in those penal systems where the correct principle is observed of graduating the punishment of the insane to the degree of their freedom of agency and consequent responsibility, is to declare moral responsibility in its common-law sense to have ceased. It happens that the offences committed during and in consequence of mental aberrations of this description, are either petty misdemeanors, or of a nature to call for the interference of the police only, or resolve themselves into mere civil questions, or into objections to the competency of witnesses. The higher grades of mania involve far more serious considerations of responsibility for any action, which will presently be fully considered.(*h*)

§ 176. "In this form of insanity," according to Dr. Ray, "the derangement is confined to one or a few of the affective faculties, the rest of the moral and intellectual constitution preserving its ordinary integrity. An exaltation of the vital force in any part of the cerebral organism, must necessarily be followed by increased activity and energy in the manifestations of the faculty connected with it, and which may even be carried to such a pitch as to be beyond the control of any other power, like the working of a blind instinctive impulse. Accordingly, we see the faculty thus affected, prompting the individual to action by a kind of instinctive irresistibility, and while he retains the most perfect consciousness, of the impropriety and even enormity of his conduct, he deliberately and perseveringly pursues it."(*i*)

The following cases are given us by Ray, in which this perversion of the moral faculties was accompanied in its latter stages by some delusions, furnishing a striking illustration of this form of disease, as well as its intimate connection with intellectual mania:—

Col. M. was a man of superior intellectual powers, and moved in the higher walks of society. He was a lawyer by profession, and was appointed district-attorney in one of the southwestern states by President Jackson, whom he had previously served in a military capacity. Towards the meridian of life,

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(*g*) Schürmayer, Gericht. Med. § 548.

(*h*) Krahmer, Handbuch der Gericht. Med. Halle. G. A. Schwetschke, 1851. § 110. Siebold, Lehrbuch der Gericht. Med. Berlin, 1847. § 208.

(*i*) Ray on Insanity, 189.

his conduct became so disorderly and boisterous, that he was often confined in jails or hospitals for the insane. On one of these occasions he cut off his nose, and subsequently came to Boston in order to have it replaced by Dr. J. Mason Warren, by means of the rhinoplastic operation, which proved quite successful. While in Boston he made the acquaintance of Dr. Bell, of the McLean Asylum, for the purpose, as he declared, of getting his aid in obtaining redress for the wrongs he had sustained in being placed under guardianship, and confined in jails and hospitals, his object being not to retaliate, but to protect his future reputation. The Dr. has kindly furnished such particulars of his case as came to his knowledge from various sources. "I inferred that he was naturally of a proud, arrogant, and extravagant spirit, which was kept in check, while she lived, by the discretion of his wife. He was sensual but not intemperate, until his nervous system had become excited. His peculiar theory was, that while he admitted that he had held—and, towards the last of my interview, avowed that he then held—certain fanciful notions which we might term delusions, if we pleased, still they were such as did not interfere with his right to entire liberty of action. 'For instance,' said he, 'I feel that I am cousin to the Duke of Wellington and to Napoleon. It seems ridiculous. I can't make it out by any kind of proof. I even laugh at it. But still, I dwell upon it as a reality. It concerns nobody else. It has in it no dangerous element. Why, then, should I be interfered with for harboring a delusion, if you choose to call it so, no more absurd than a thousand religious sects feel themselves happy in resting upon.' He would often argue thus: 'I protest against being called insane on account of my ideas. For my actions I am accountable. I never yet claimed—I never will claim—immunity as an irresponsible being. I will permit no one to set up such a defence for me. Try me by the laws of the land and the strict rules of evidence, and I will abide by the result, as a good citizen; but I must have opportunity to argue my own cause, and examine the witnesses brought before me.'

"He had often been arrested for assault and battery, but always continued to beat the complainants, by his familiarity with legal proceedings, and by his quick perception of whatever made for or against himself. If, in his best estate, he had been counsel for another party, he could not have managed the case better than he did his own. However wild, extravagant, and boisterous at hotels and such places, of which he was the terror, as soon as he was in the atmosphere of a court of justice, he became calm, dignified, and respectful, but tenacious to the last degree. For example, when carried before the police-judge of New York, on a warrant, the printed form of which had been in use for twenty years, setting forth that in consequence of insanity 'or otherwise,' he was dangerous to be at large, he, at once, advocated successfully his constitutional right to have the offence set forth specifically and precisely.

"He had most carefully considered the extent of his rights—the precise amount of force justifiable in ejecting an unwelcome guest, or, what was a more common event, in resisting an ejectment; the obligation of innholders to receive applicants, and the value of proving the first blow in defence of as-

saults. On one occasion, thinking the hack-men and cab-men of New York were insolent and exacting in regard to the right of way, he armed himself with a heavy whip, took a good witness by his side, and drove through Broadway in a strong carriage, running against every charioteer who failed to give him his exact half of the road. This, of course, produced a collision of tongues as well as wheels. His peculiarly sarcastic language tempted a touch of the whip from some of his opponents, and upon this, our hero turned to and thrashed them within an inch of their lives. They appealed to the courts, but his witness soon and truly proved the aggression on them.

"While in the Pennsylvania Hospital for the insane, and again, I believe, while in the jail in Washington, he got discharged by means of a writ of *habeas corpus*, which he was allowed to sue out. When thus brought before the court, he argued his case upon the settled legal doctrine that an ability to distinguish right from wrong is the sole test of sanity. Of course, no judge could, or did, hesitate in opinion, that a gentleman who was able to make an elegant and an astute argument on the nature, origin, and protection of the rights of the subject, could, by any means, be within the category of individuals intellectually incapable of discriminating between right and wrong. In fact, processes of detention as a lunatic, held, in his case, only until he could get before some tribunal. And yet when thus turned loose upon society, he was a passionate, dangerous lunatic. When hard pushed by evidence of extravagant and boisterous actions, he would attribute the fact to his having unfortunately taken a little too much wine (which was probably true to some extent), comprehending perfectly that an offence of that kind would be followed by a much lighter consequence—a mere fine, in fact—than seclusion as a lunatic. When the self-mutilation was alluded to, he would most frankly attribute it to his ignorance of physiological laws, and allege that his lost organ, being covered with blotches and carbuncles, he cut it off, absurdly supposing that nature had a renewing power, as in the growth of the hair.

"After he became so wild in his conduct in Boston as to be a universal annoyance, I advised his friends in Missouri to place him under care as a lunatic. They replied that the thing was impracticable; that no institution had been found able to hold him, and they would not arouse his vindictive feelings by any further trials of that sort. His intemperate habits increased, and his delusions became more palpable, yet without affecting his intellectual power. The idea returned that parts of his face, if removed, would grow again, and he cut out the cicatrix on his forehead whence the nasal flap had been taken. Fortunately death stepped in at this point, and removed a man whose fate was so melancholy; for, under all the ravages of mental disease, there were traces of noble sentiments and lofty aspirations."(*j*)

2d. *Moral Monomania.*

§ 177. It has been already observed(*k*) that on the subject of moral insanity psychological opinion is so divided as to deprive it, in this respect, of any

(*j*) Ray on Insanity, 181, 182, &c.

(*k*) *Ante*, § 59.

authoritative weight in courts of justice. Even as to the name there is irreconcilable conflict. The specific form appears to have been first mentioned by Ellinger, under the name of *melancholia sine delirio sive perturbatio mentis, melancholia sine delirio.* Pinel subsequently called it *manié sans delire,* after having made the assertion, based upon facts, "that there are madmen in whom there is no perceptible alteration of the intellectual process, of the perceptions, judging faculty, imagination, or memory, and yet a perversion of the manifestations of the will, in a blind impulse to the commission of violence, or even of bloodthirsty rage, without any assignable dominant idea, any delusion of the imagination, which could cause such a propensity." By Ray, Taylor, and Pritchard the term *moral insanity* is used; by Dr. Carpenter, *impulsive insanity.* On the other hand, the existence of this type as a distinct and substantive form of insanity, disconnected with mental disturbance, is rejected by high authorities, some of whom will be shortly quoted,(*l*) in addition to whom may be named Heinrich,(*u*) Leubuscher,(*v*) Elwell,(*x*) and the author of several recent interesting essays in the *American Journal of Insanity.*(*z*)

§ 178. The position has been already advanced that the common law limits the defence of moral insanity to cases where there is a cognate mental unsoundness.(*a*) When there is no such unsoundness, the propensity cannot, from a penal stand-point, be distinguished from mere malice or badness. But it does not follow from this that when there is proved to exist an insane moral perversion, which manifests itself in the making of a will, or in the discharge of business duties, this will not be a ground for setting aside the will, or taking out a commission of lunacy. As has already been noticed, the criminal and the civil tests of insanity are widely different. The policy of the law may, on the one hand, reject moral insanity when it is used as a defence for crime, and yet, on the other hand, acknowledge it as a disability when it is sought to be used to prejudice third persons. While, however, there is too great a difference of opinion among experts in this respect to justify a writer on legal medicine in accepting either view as authoritative, the question is too vital to be passed over without a notice of the grounds on which the controversy rests. These will now be noticed.

§ 179. *Authorities sustaining Insanity merely Moral.*—Among those who assume that moral insanity is a distinct type, I may again quote Dr. Ray. "In fact, it has always been observed," says this eminent and experienced physician, "that insanity as often affects the moral as it does the intellectual perceptions. In many cases there is evinced some moral obliquity quite unnatural to the individual, a loss of his ordinary interests in the relations of father, son, husband, or brother, long before a single word escapes from his lips 'sounding to folly.' Through the course of the disease the moral and intellectual impairments proceed *pari passu,* while the return of the affections

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(*l*) *Post,* § 183.

(*u*) Kritische Abhandlung über die von Prichard als Moral Insanity geschilderte Krankheitsform. Allgemein. Zeitschr. für Psychiatrie, V. Bd. 4 Hft.

(*v*) Bemerkungen über Moral Insanity und ähnliche Krankheitszustände. Casper's Wochenschr., Nr. 59 u. 51.

(*x*) Malpractice and Medical Evidence. (*z*) Vols. xii. p. 334, xiv. p. 314.

(*a*) *Ante,* § 61.

to their natural channels is one of the strongest indications of approaching recovery. Such being the fact, it ought not to be a matter of surprise that in some cases the aberration should be confined to the moral impairment, the intellectual, if there be any, being too slight to be easily discerned."

"The reality and importance of this distinction," says the same author subsequently, "which thus establishes two classes of mania, is now generally acknowledged by practical observers, among whom it is sufficient to mention Esquirol, Georget, Gall, Marc, Rush, Reil, Hoffbauer, Andrew Combe, Conolly, and Prichard, though some of them are inclined to doubt whether the integrity of the understanding is as fully preserved in moral mania as Pinel affirmed. Still, its apparent soundness, and the difficulty, at least, of establishing the existence of any intellectual derangement, while the moral powers are unequivocally and deeply deranged, render it no less important in its legal relations than if the understanding were unequivocally affected. It is defined by Prichard, who has strongly insisted on the necessity of assigning it a more distinct and conspicuous place than it has hitherto received, as 'consisting in a morbid perversion of the natural feelings, affections, inclinations, temper, habits, and moral dispositions, without any notable lesion of the intellect or knowing and reasoning faculties, and particularly without any maniacal hallucination.' It will be convenient, even if not scientifically precise, to consider it under two divisions, according as it is general or partial."(*b*)

Take also the following less positive, though still very impressive, argument of Dr. Carpenter, the most authoritative of recent physiologists :—

§ 180. "The more active forms of delirium pass by almost imperceptible gradations into the state of *mania*, which is usually characterized by the combination of complete derangement of the intellectual powers with passionate excitement upon every point which in the least degree affects the feelings. There is, however, a considerable amount of variety in the phases of mania, depending upon differences in the relative degree of *intellectual* and of *emotional* disturbance. For there may be such a derangement of the former as gives rise to complete incoherence in the succession of ideas, so that the reasoning power is altogether suspended; and yet there may be at the same time an entire absence of emotional excitement, so that the condition of the mind is closely allied to that of dreaming or of rambling delirium. On the other hand, the intellectual powers may be themselves but little disturbed, the trains of thought being coherent, and the reasoning processes correctly performed; but there may be such a state of general emotional excitability, that nothing is *felt* as it should be, and the most violent passion may be aroused and sustained by the most trivial incidents, or by the wrong ideas which are formed by the mind as a consequence of their misinterpretation. Between these two opposite states, and that in which the disturbance affects at the same time the intellectual and emotional parts of the mental nature, there is a complete succession of transitional links; but under all the phases of this condition (these often passing into each other in the same individual) there is one constant element, namely, the deficiency of volitional control over the succession

(*b*) Ray on Insanity, p. 166.

of thought. This deficiency appears to be a primary element in those forms which essentially consist in intellectual disturbance; whilst in those of which emotional excitement is the prominent feature it seems rather to result from the overpowering mastery that is exercised over the will by the states of uncontrollable passion which succeed each other with little or no interval. It seems probable, however, from the phenomena of intoxication, that the very same agency which is the cause of the undue emotional excitability also tends to produce an absolute diminution in the power of volitional control."

"There may, however, be no primary disorder of the intellectual faculties, and the insanity may essentially consist in a tendency to disordered *emotional* excitement, which affects the course of thought, and consequently of action, without disturbing the reasoning processes in any other way than by supplying wrong materials to them. Now, the emotional disturbance may be either *general* or *special;* that is, there may be a derangement of feeling upon almost every subject—matters previously indifferent becoming invested with strong pleasurable or painful interest, things which were previously repulsive being greedily sought, and those which were previously the most attractive being in like manner repelled; or, on the other hand, there may be a peculiar intensification of some one class of feelings or impulses, which thus acquire a settled domination over the whole character, and cause every idea with which they connect themselves to be presented to the mind under an erroneous aspect. The first of these forms, now generally termed *moral insanity*, may, and frequently *does*, exist without any disorder of the intellectual powers, or any delusion whatever; it being (as we shall presently see) a result of the generality of the affection of the emotional tendencies, that no one of them maintains any constant hold upon the mind, one excitement being, as it were, driven out by another. Such patients are among those whose treatment requires the nicest care, but who may be most benefited by judicious influences. Nothing else is requisite than that they should exercise a moderate amount of self-control; but the best directed moral treatment cannot enforce this if the patient do not himself (or herself) co-operate. Much may be effected, however, as in the education of children, by presenting adequate *motives* to self-control; and the more frequently this is exerted, the more easy does the exertion become."(*c*)

§ 181. To the same effect speaks Dr. McCosh, who may be appealed to as one of the ablest, and in his theological relations, one of the most conservative of the representatives of Scotch psychology:—

"The fact that man's mind is self-acting, and in particular, that the will is self-acting—has its power or law in itself—is one of the conditions of responsibility. The other two conditions of responsibility seem to be conscience and intelligence. There must be conscience to distinguish between right and wrong, and to announce to us which is the one and which is the other. There must also be such an amount of intelligence as to enable the mind to comprehend the true state of the case, and to separate, in the complex acts of life, that which is moral from that which is indifferent. *These three, then, seem to be the essential elements or conditions of responsibility.* Every human being,

(*c*) Carpenter's Physiology, Phil. 1856, §§ 704, 707.

in a sane state of mind, is in possession of all the three. The maniac in some cases has lost the first, and has no proper power of will. The idiot, and in some cases the maniac, is without the third, or the power of discovering what is really embraced in a given phenomenon. Without the one or the other of these necessary adjuncts, there is no room for the right exercise of the second —that is, the conscience; and the party therefore is not responsible."(*d*)

§ 182. As holding the same view, though with much greater cautiousness of expression, we may cite Morel, a recent distinguished French writer on insanity, from whom we translate the following :—

"Instinctive mania (*manie raisonnante* of Pinel) includes homicidal and incendiary monomaniacs, &c. Those thus affected seldom complain of being tormented with hallucinations of the senses, but are subject to indefinable pains which betray themselves exteriorly in headaches, roaring in the ears, dazzlings and indescribable sensations. If we sometimes see in them perfect digestive powers or an exaggerated appetite, the opposite phenomena of want of appetite, depraved tastes, &c., are much more frequent symptoms. They feel an incessant need of movement, an activity out of all proportion with their physical forces, alternating with an insurmountable apathy. If, under certain circumstances, the absence of sleep astonishes us, we on the contrary often observe them in a torpid and almost death-like state. Sometimes their sensibility is so exalted that the whole exterior world becomes for them nothing but a source of pain, anguish, and irritability. Sometimes the most unhappy sensations, and the most painful emotions do not seem to affect either their physical or moral nature.

"When these patients are brought into a court of justice they are unanimous in attributing the same motives to their actions. They accuse themselves of irresistible impulses; they are ignorant why they so acted, and in this respect are very different from those suffering from hallucinations or systematic madness, who astonish and frighten us by the inexorable logic of their actions, who express only imperfectly shaped regrets, who are indifferent as to the condition of their victims, as much as to their own interests, and who are not able to say but that they will perform the same act again if the opportunity should occur. In scrutinizing the former life of such patients we must remain convinced that the lesions of their intelligence, the disorganization of their instincts and tendencies must be due to deep organic disturbances. Hereditary influences, malformation of the great organ of the intelligence, certain diseases which may have changed the general health, idiopathic affections, arrests of development; troubles at the period of puberty, or in the normal phenomena of gestation, are so many involuntary causes. These causes are the more striking and palpable as the patients cannot always be excused on account of a vicious education. The malady with which they are afflicted has sometimes attacked them in the midst of the best social conditions, and when a relatively feebler intelligence and the manifestation of depraved instincts have early been remarked in them; conditions of system which have not always found their corrective in an appropriate hygienic treatment and education. And this is

(*d*) McCosh on Divine Government, 270.

why we have called this form of mania, *instinctive mania*, because we see in it something so *essentially* connected with the organic conditions, that it is impossible for us to consider such patients as other than what they really are, viz., things deprived of their free-will and reason. There do exist voluntary causes which produce identical consequences as regards the derangement of the tendencies. The subversive and selfish passions, debauchery, lewdness, drunkenness, and solitary habits, are of this class. This form of mania will be best shown in the following case, of an educated maniacal woman who was irresistibly urged on to attempt the lives of her companions and relations:—

"The previous mode of living of Mariè C. by no means explains the aberration of her sentiments and the disorganization of her feelings. Born of honest parents, who spared nothing for her education, she embraced, early in life, the profession of teacher in a small village. She quitted this position, which was too laborious for her, and entered as domestic into a family, where she was treated rather as one of the household than as a servant. She remained there eight years, as happy as it was possible for one so afflicted to be.

"'I do not know,' she says, 'how to explain my mode of life. I never amused myself like the other children of the village; I possessed a ridiculous, fantastical, capricious temper, and I generally preferred seeing evil done than good. I was sometimes extravagantly gay, but more generally I was sad.'

"*Question.*—'Had you any cause for being so?' *Answer.*—'None. My parents loved me, if possible, more than my other brothers and sisters; but I really took pleasure in nothing. I have been a teacher, but that became very wearisome to me. I have been for eight years in the household of M. P., but it was always the same thing; however, I never said anything, I kept every thing to myself.' *Q.*—'Have you ever thought of marrying?' *A.*—'Never; and when any one made such proposals to me, I thought that they wished to insult me.' *Q.*—'Have you suffered from violent grief?' *A.*—'I cannot truly say that I have suffered more pain than pleasure; it was only when my brother was accidentally drowned that I experienced a great blow; but, what is singular, I was not grieved at the idea of having lost him, but at the thought of his dying unconfessed.' *Q.*—'Have you ever been dangerously sick?' *A.*—'Six months after the death of my brother, I was attacked with a severe illness (typhoid fever). Since that time I have been very restless; I get up during the night; I cannot sleep. The blood rushes to my head, and the desire of doing evil then takes possession of me.' *Q.*—'Explain clearly all that you have done up to this period.' *A.*—'I used to arise at night and go torment my sister; I used to awake her and draw her to the foot of her bed. Once I bit her very badly in the hand.' *Q.*—'On these occasions were you conscious of any pain, had you no longer any appetite?' *A.*—'I suffered pain nowhere, except that my courses had stopped, and the physicians bled and put leeches on me to rectify that; but the more I was bled the more wicked I became, *I only thought of evil, and I only wished for evil;* so much so, that I once told my sister to bring me an axe, to cut some wood with, and when she brought it I tried to split her head. I ran after her, and if our parents had not interfered, I should certainly have killed her. As to appe-

tite, I have always had too good a one; I eat like an animal. I was in the habit of taking pieces of bread and carrots from the troughs in our cow-stable. I am never able to satisfy myself.' *Q.*—'If you had killed your sister, would you have been much grieved?' *A.*—'I think not; it would not have worried me at all. In the same manner, when I was at the hospital of Remiremont, I was always trying to kill somebody. Once I grasped a woman so hard by the throat, that I should have strangled her, if she had not cried out, and put out her tongue so far as to frighten me. I did nothing but dream of shedding blood; I could have drank it. Once I enticed six old women into the dormitory, wishing to strangle them; I commenced with one, but the others crying out obtained assistance. I was confined alone, and as I could injure no one, I commenced biting my own hands (the signs of the cicatrices are still visible).' *Q.*—'Do you hear voices commanding you to do these frightful acts? Explain how it is possible for a girl well brought up to behave in such a manner.' *A.*—'I hear no voices, but I am pushed on to such a degree as to be unable to stop myself from performing them. When I am at church, instead of saying prayers, I blaspheme. They tried to place rosaries and images of the Holy Virgin in my hands, but I destroyed them. I always am desirous of overturning whatever is on the altar, and when I see any girl by my side saying her prayers, I worry and pinch her.'

"With regard to the two months that Mariè C. has been at the asylum, she did not exaggerate the bad instincts that control her. She has become the terror of her ward. We have been obliged to isolate her because she arises during the night, drags the other patients out of bed, and tries to strangle them. She however works and occupies herself; but suffer her to escape out of sight for a moment, and she leaves her work in order to tear up that of her companions. Approaching them with a sympathizing manner, and under pretence of seeing what they are doing, she twists their hands in her attempts to break their fingers.

"If the strait-waistcoat is put upon her, she finds means of placing herself in the way of every body, and tries to trip up her companions and to bite, all the while deploring her situation and wishing to be delivered from it. But even in expressing her regrets, her face betrays no emotion, she remains impassible, and it is difficult to read upon her features any expression of the perverted sentiments which force this unfortunate to the performance of such deplorable acts, &c."(*d*)

§ 183. *Authorities rejecting Insanity merely Moral.*—On the other hand, in addition to the authorities already noticed(*dd*), as rejecting the theory of *mania sine delirio*, we may add the great body of recent German psychologists. Of these, we may take Schürmayer as a representative. He insists that it is *not to be supposed that a single impulse is diseased, while all the other functions of the mind retain their healthy action.* While the entire intellect enjoys sound health, there is nothing in which a morbid desire of theft, murder, &c., could originate, and such a phenomenon is a psychological

(*d*) See Traité Théorique des Maladies Mentales, par M. Morel, tome i. p. 310. Paris, 1852.

(*dd*) *Ante*, § 177.

impossibility, and the assumption of such requires a psychological contradiction. A *mania sine delirio*, a mania without a morbid participation or disturbance of the perceptive faculties, is therefore out of the question, as a desire to injure or destroy is impossible without an act of the mind by which this purpose is entertained, and as reason and understanding are alike disordered whether they insinuate a wrong motive for the morbidly conceived purpose of the act, or whether they entirely omit the suggestion of any reason whatever.(*e*)

§ 184. The same position is thus defended by Dr. Winslow: "Is there not," he says, "a mysterious, inscrutable, and inexplicable *oneness* in the constitution of the human mind, defying all attempts at an accurate and minute classification and separation of its powers? If such a state of mutual dependence, action, and union obtains between various states of mind (I will not use the arbitrary terms 'faculty' or 'power') in a condition of health, *à fortiori* how impossible is it to disjoin, separate, and individualize the mental faculties when under the influence of disease? Can we draw the line of demarcation between a diseased and healthy condition of the delicate structure of the vesicular neurine of the brain? Is it not obviously impossible for the most experienced anatomist to say, This is the territory which separates the morbid from the healthy portion of the brain? or for the physician to assert such an extent of disorder of the mind is consistent with safety and responsibility, but beyond the boundary, danger and irresponsibility commence?"

"But, apart altogether from the metaphysical objection to the theory, let us for a moment consider whether such a form of disease as partial insanity or monomania comes under the observation of the practical physician. There are, undoubtedly, forms of insanity in which there is an unhealthy *predominance* and exaltation given to particular mental *impressions* or *delusions;* that certain states of morbid thought and feeling stand out in bold and prominent relief, giving, as it were, a character or type to the mental disease; *but I never yet saw a case of alienation of mind in which the delusion or hallucination was in reality confined to one or two ideas, those ideas exercising no influence over the conduct of the person, and not implicating, to a certain degree, the other faculties of the mind.* It is impossible to circumscribe the operation of morbid conditions of thought, or to draw a line of demarcation between those states of mind that are clearly under the influence of disease, and those operations or faculties of the intellect that remain apparently unaffected. A man believes himself to be our Saviour, or Mahomet the prophet. Apparently the man's mind is sound upon all other points; but within what limits can we confine and restrain the influence of so serious a delusion?"

"A slight accession of bodily disease, a severe attack of indigestion, congestion of the liver, or a torpid state of the bowels, may make all the difference between security and safety in such a case. A person laboring under the dominion of one palpable, insane delusion or hallucination (I am now using the term delusion in its strictly medical acceptation), ought not to be treated *quoad* the question of criminality as a sane and rational man. But let me for

(*e*) Schürmayer, Gericht. Med. § 549; *ante*, § 58, &c.

a minute revert to the question as to the existence of partial insanity, or monomania. Foville, a French physician of great celebrity, who had for many years the medical charge of the Charenton Lunatic Asylum near Paris, when speaking of monomania, observes: 'Monomania consists in a delirium, partial and circumscribed to a small number of objects. Monomania, in its most simple condition, is excessively rare; the number of patients who only rave on one subject is *infinitely small* compared to the number of those who are *called* monomaniacs. Under this head are often confounded all those who have some habitual dominant idea. I have only seen two cases which rigorously merit the name, and these two even were affected from time to time with more extended delirium.'

"He again remarks: 'Let any one examine the hospitals of Paris, of Bicêtre, of Charenton, and he will see that amongst the thousands of insane, there is scarcely one true monomaniac, *perhaps not one.* Insanity attacks principally, at one time the intellectual, at another the moral or affective faculties; and, again, the sensations and movements. Each of these may be more or less affected than the others; and so, when the intellect, *without being unaffected,* is less deeply involved than the other faculties, we fall into the error of considering it sound, and call these monomaniacs. Indeed, it seems to me as though the descriptions of monomania had been written *upon the word,* and not from nature; that is to say, that writers have described what *might* merit the title of monomania, but of which they can find no instance in practice.'

"Moreau, also a great authority in France, says: 'It is impossible to admit that the intellectual faculties can be modified in a partial manner. In the slightest as well as the most severe forms of insanity, there is necessarily a complete metamorphosis—a radical and absolute transformation of all the mental powers of the ONE. In other words, we are insane or we are not insane; we cannot be half deranged, or three-quarters, full face or profile.'

"Baillarger, an eminent French psychological physician, adopts the same view of the question, and maintains that the alleged monomaniacal idea is more frequently *predominant* than *exclusive.* If we look to Germany, we find the first psychological authority of that country, Damerow, declaring that 'he never knew a case of the disease of the mind called monomania, in which there was not a fundamental, general psychical disorder.' "(*f*)

§ 184(1). Dr. Mayo thus speaks on the same point: "I may observe that the theory of either moral or impulsive insanity is too liable, for anything that Dr. Pritchard has suggested, to occasion the sudden outbreaks of the brutal character—a character under rapid development, at present, in the lower orders of the country, to find refuge under this plea. Such was the application of it which, some years ago, protected the Honorable Mr. Touchet from the penal consequences of a great crime. That gentleman put to death, by a pistol-shot, the marker of a shooting-gallery. The act was sudden, and there was no apparent motive; but it was not performed under any semblance of delirium. Mr. Touchet was eccentric, and he was *blasé.* He fancied that he desired to

(*f*) Dr. Forbes Winslow's Essay on the Legal Doctrine of Responsibility, reprinted in Am. Journal of Insanity, vol. xv. p. 173.

be hanged—at the gallows he would probably have thought differently—and he was reckless and brutal enough to give himself a chance of this fate, at the expense of the life of a fellow creature. I have noticed him since, in the criminal department of Bedlam, *insouciant* and indifferent enough, but certainly not insane in any sense of the word that would not entirely disintegrate its meaning; neither when we proceed to consider the sense which the law intends to give to the expression of the certificate 'unsoundness'—shall we find this epithet at all more appropriate to Mr. Touchet's case, which was simply one of brutal recklessness. With respect to the misapplication of the plea of insanity to hysteria, we have the case of a nursery-maid, placed in Bethlehem Hospital in 1846. A trifling disappointment, relative to an article of dress, had produced in her a wayward state of mind. She labored, at the time, under diminished catamenia. An object to which she was generally much attached came in her way, namely, the infant whom she had nursed, and she destroyed it, as a fanciful child breaks, in its moodiness, a favorite doll. No fact more nearly approaching to delirium than the above, was stated in exculpation or excuse at the trial. But Dr. Pritchard's work on the different forms of Insanity, in relation to Jurisprudence, was published in 1842; and, by 1846, juries had learned to convert the uncontrolled influences of temper into what he terms Instinctive Insanity."

"As an instance of this class of cases in which the judicial authorities came rightly to a very different conclusion, I will quote to you the following one, from Sir Woodbine Parrish's last work on Buenos Ayres. Having spoken of a certain wind occasional in that climate, which in some persons produces peculiar irritability and ill-humor almost amounting to a disorder of their moral faculties, he proceeds as follows: "Some years ago, Juan Antonio Garcia, aged between thirty-five and forty, was executed for murder at Buenos Ayres. He was a person of some education, and rather remarkable for the civility and amenity of his manners; his countenance open, his disposition generous. When this *vento-norte*—this peculiar north wind set in, he appeared to lose all command over himself; and such became his irritability, that during its continuance he was engaged in continual quarrels and acts of violence. Before his execution, he admitted that it was the third man he had killed, besides being engaged in various fights with knives. When he arose from his bed in the morning, he told Sir Woodbine's informant, he was always aware at once of its accursed influence upon him; a dull headache first, and then a feeling of impatience at everything about him. If he went abroad his headache generally became worse; a heavy weight seemed to hang over his temples. He saw objects as it were through a cloud, and was hardly conscious where he went. He was fond of play, and if, in such a mood, a gambling house was in his way, he seldom resisted the temptation. Once there, a turn of ill luck would so irritate him, that he would probably insult some one of the bystanders; if he met with any one disposed to resent his abuse they seldom parted without bloodshed. The relations of Garcia corroborated this account, and added that no sooner had the cause of excitement passed away, than he would deplore and endeavor to repair the effects of his infirmity. 'The medical man,' says Sir Woodbine, 'who gave me this account, attended him in his last moments and

expressed great anxiety to save his life, under the impression that he was hardly to be accounted a reasonable being.' 'But,' he adds, 'to have admitted that plea, would have led to the necessity of confining half the population of the city when the wind sets in.' I quite agree with the conclusion which this remark implies, as to the fate of Garcia. He was himself aware of the murderous instinct to which he was liable, and of its exciting causes. Surely, when such knowledge is in the possession of the delinquent, he must be made responsible for the non-avoidance of exciting causes."(*g*)

§ 184(2). It is further insisted, as a question of fact, that in the so-called cases of moral insanity, mental unsoundness can almost in every instance be shown to exist by positive proof. This is illustrated by an "Analysis of fifty-two Cases of Insanity marked by a Disposition to Homicide," furnished to the American Journal of Insanity for October, 1857, by Dr. J. P. Gray. From this the following summary is extracted:—

"*Sex.*—Of those who committed the act, nineteen were males and five females; of those who made unsuccessful attempts, twenty were males and five females.

"*Habits.*—Of the entire number (fifty-two) twenty-three were intemperate, or vicious, bad men, and twenty-nine were of unexceptionable character and habits.

"*Hereditary Predisposition.*—In twenty-one of the fifty-two cases there existed a marked hereditary predisposition, in nine no such predisposition existed, and in twenty-two no facts touching this point were ascertained.

"*Mental Disease.*—The form of mental disease was acute mania in fourteen cases, subacute mania in three, paroxysmal mania in two, chronic mania in four, dementia in twenty-four, melancholia in four, mania-à-potu in one. Four of the cases of mania and one of dementia were accompanied by epilepsy.

"*Time.*—Twenty-two of the twenty-four homicides were committed in the daytime, the remaining two in the early part of the evening. Of the twenty-five attempts, twenty-one were made in the daytime, two in the night, and two both in the day and night.

"*Object of Attack.*—A father was the victim in one case, a brother-in-law in one, a husband in one, wives in four, children in ten, a cousin in one, neighbors in four, neighbors' children in three, and entire strangers in seven cases. In nearly the same proportion the immediate relations of the patients were the objects of attack in those cases in which the attempt was unsuccessful.

"*Suicidal Disposition.*—In ten of the fifty-two cases a suicidal tendency accompanied the disposition to homicide.

"*Commitment to Asylum.*—Of the twenty-four homicides, eleven were acquitted by the courts before which they were arraigned, on ground of insanity, and ordered to the asylum; one was found guilty, but sentence was suspended; four were sent here on preliminary trial, six without any criminal proceedings; and two were placed in the asylum by their friends.

"*Results.*—Of the twenty-four patients who committed homicide, seven recovered, eleven are unimproved, two eloped, and four have died. Of the

(*g*) Mayo on Medical Testimony in Lunacy, 58, 59, 60, 61, 62.

twenty-five patients who were prevented from carrying their homicidal purpose into execution eight recovered, thirteen are unimproved, and four have died.

"Arranging these cases under Dr. Bucknill's very convenient modified classification of Esquirol,(*h*) we have the following result:—

"1. 'Those wherein the crime has been occasioned by delusion, and no reasonable person can doubt or object to the irresponsibility of the offender.' In this class we have thirty-four of the fifty-two cases.

"2. 'Wherein the offender, though suffering from cerebro-mental disease, has committed the crime under the influence of some motive not of a delusive character.' In this class we have seven of the fifty-two cases.

"3. 'Where with general symptoms of cerebro-mental disease neither delusion nor motive for the crime are discernible.' In this class we have eleven of the fifty-two cases."

§ 184(3). *Tests of Moral Insanity.*—Whether, however, moral insanity is regarded, as holds the first class of observers, as a distinct phase, or whether it be merely the predominant type of a mind in other respects unsound, there are certain tests which may be applied to it as indicating its existence and character. These we may notice in the language of a paper read before the Imperial Academy in 1859 by M. Devergie:—

"No incentives to the deed, either in passions not sufficiently repressed, or in an acquired fixed idea; antecedents and manners irreproachable; absence of hallucinations; outbreak of insanity manifested by a criminal act, and instantaneous return to reason as soon as the deed was accomplished—these are, according to us, the characters of transitory insanity. Nevertheless, the word *transitory*, perfectly just for the world in general, in the sense that the madness is but transient, though the deed done be of the most criminal description, does not appear to me sufficiently exact for the physician. Individuals of the character described ought not to be considered of sound mind when an idea of crime has suddenly risen within them, when this idea has constituted with them a dominant and irresistible thought, stronger than *the Me*, stronger than the will.

"Antecedents of family, divers acts of social life, propensities, tastes more or less perverted, tendencies to taciturnity, ideas of suicide, are often manifested many years before the explosion of the irresistible criminal idea. So that to say that *the passage from reason to insanity* can be hasty or instantaneous, in the opinion of the physician is to commit an error. This state has prodromata, as every malady has; and, according to us, *if these prodromata do not exist*, it would be impossible to see in the reported criminal act an act of insanity.

"Moreover, M. Lelut(*i*) has said, with much truth, in regard to this species of insanity, that at its commencement, and in the mental tendencies which are the predisposing or constitutional cause of it, insanity is still reason, as reason is already insanity (la folie est encore de la raison, comme la raison est

(*h*) Bucknill on Criminal Lunacy, p. 100.
(*i*) Recherches des Analogies de la Folie et de la Raison, à la suite de son ouvrage Le Démon de Socrate, p. 318.

déjà de la folie). This constitutes, for the physician, one of the first elements towards the solution of the question.

"A second datum of great interest, in a medical and moral point of view, is the disproportion which exists between the enormity of the offence and the motive or interest which has led to its committal.

"If we examine all the criminal processes which have been instituted on the occasion of similar offences, and which have, moreover, been diversely adjudicated upon, but which, for the physician, have been acts of madness, it will be seen that the motive which led to the committal of the deed was not, so far as its consequences were concerned, in relation with the action itself. In other words, the accused, in committing the crime, had in prospect the scaffold; and, even in the case of impunity from it, he derived frequently no advantage, material or moral, from the act which he had committed.

"Now, every important act of a man of sound mind has one end. That end is the attainment of an advantage proportionate to the consequences of the act. When an individual stakes his life upon it, he hopes to obtain in exchange material or moral advantages, more or less considerable, and by which he expects to profit largely.

"If it be asked what are the conditions under which the reputed criminal act is performed, we are at once struck with the want of foresight which has preceded and accompanied its fulfilment. Neither the moment of the deed nor the mode by which it has been effected, have been the object of any premeditation. Moreover, the deed has probably been committed at the most unfavorable moment, although the accused had had a thousand opportunities of effecting it in secret.

"Far from avoiding justice, the insane individual, in other respects an upright man, comprehending quickly the enormity of the crime that he has involuntarily committed, occasionally, nay, most commonly, gives himself up to justice. In effect, the dominant notion has hastily ceased to exist; moral freedom has resumed its empire, and the so-called criminal has ceased to be mad.

"If investigation is extended to the mental state of the paternal or maternal ancestors of the accused, it is common to find that one or more members of the family have committed suicide, or have had a more or less prolonged attack of insanity.

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"Lastly (and this is a criterion of great value), if we investigate the offence from two different points of view, the hypothesis of a criminal act, and the hypothesis of an act of folly, in order that either view should be established, it is necessary that it should expose all the facts without effort, while the opposite view should present a series of improbabilities which at once strike the judgment and are inconsistent with experience. The last method leads the physician with the greatest certainty to a right apprehension of the facts; by it doubt is dissipated, conviction arrived at, and the conscience relieved."(*j*)

(*j*) Extract from a paper read before the Imperial Academy of Medicine, Paris, and translated for Winslow's Journal of Psychological Medicine.

§ 184(4). Sometimes monomania may on its face be restricted to a very narrow and abnormal propensity. A case is elsewhere mentioned of a young man, at Leipsic, who was seized with a passionate desire to strike a lancet in the arms of such young women as he could furtively meet. So in England, in 1789, a man named Williams was arrested under the charge, which was fully proved, of having laid wait for the purpose of cutting and tearing the dresses of "spinsters" whom he could in like manner approach. But a still more curious case is that of a young man, named Charles H. Sprague, who was tried in King's County, New York, in October, 1849. He was shown to have left his house immediately after breakfast to go to his business, which was that of a printer; to have overtaken a young lady, to have thrown her down, to have snatched a shoe from one of her feet, and to have run away. She wore a chain and locket, and other jewelry in sight; but he did not attempt to take anything except the shoe, nor to do violence to her person in any way. He then proceeded round a square, and on his way called at his wife's father's, and asked if his father was in town, a matter as to which he was perfectly well informed. He then left the house, came directly back to the very spot where he had just taken the shoe, and continued on, without stopping, to his place of business. He was tried for highway robbery, and on trial the defence of insanity was set up. "The principal witness was the defendant's father, a clergyman of the highest respectability, whose testimony was corroborated in every particular by several other witnesses; indeed, by all the court thought it worth while to have brought forward. Charles Sprague's paternal great-grandfather, grandmother, great-uncle, and three great-aunts—being four out of a family of six—and a cousin, are or have been insane. He had himself in youth received several severe blows and falls upon the head, and within a year from the last fall he began to suffer headache, and his friends observed an unnatural prominence of the eyes, with varying dulness and glassiness of these organs. Simultaneously with this, Sprague began to exhibit a propensity to abstract and conceal the shoes of the female members of his family. In the majority of instances one shoe only was missed, and it was usually found about the house, having been thoroughly soaked with water, twisted up like a rope, and then hid away between a feather and straw bed, or in the depths of a trunk, or hung up in a closet with garments concealing it.

"Suspicion at first rested upon the servants, but the real agent being detected and questioned, remained silent, and on subsequent explanations generally denying the possibility of his agency until within the last six years. During this period, when remonstrated with on his singular habit, he would admit that he must have taken the shoe, though he had no recollection of it, and did not know for what he wanted it. The intermissions in this practice have at no time exceeded three or four months at one time.

"After the practice became established, Sprague's mother and sisters, and the female servants, habitually locked up their shoes; yet occasionally one was missed and discovered twisted and crumpled after being wet. It was rumored at one time in the family that Sprague had attempted to remove the shoe from the foot of a domestic, and his sister once alarmed her father at night on finding him abstracting her shoes from a locked drawer. In the early part of the

year of the trial, two females, one residing in Brooklyn, had a shoe or shoes taken from their feet while walking in the street in the evening; but the offender has never been certainly known."(*k*) The defendant was acquitted.

§ 184(5). The legal relations of moral insanity may be recapitulated as follows:—

(1.) The *mania sine delirio*, if there be such a form of insanity, is no defence to a criminal charge; but moral insanity may be so pleaded, (a), when there is a cognate mental derangement, either express or implied; (b), when there is a consequent perversion of the capacity to determine between right and wrong; and (c), when the impulse to the crime is temporarily irresistible.(*l*)

(2.) Supposing such a mania (*mania sine delirio*) to exist as to the subject-matter of a will, it vacates such will.

(3.) Supposing it to exist as to business matters, it is ground for a commission of lunacy.

§ 185. Monomania, as affecting the moral sense, will be considered under the following heads:—

(1.) *Homicidal mania* (morbid propensity to kill).
(2.) *Kleptomania* (morbid propensity to steal).
(3.) *Pyromania* (morbid incendiary propensity).
(4.) *Aidoiomania* (morbid sexual propensity).
(5.) *Pseudonomania* (morbid lying propensity).
(6.) *Oikeiomania* (morbid state of domestic affections).
(7.) *Suicidal mania* (morbid propensity to self-destruction).
(8.) *Fanatico-mania* (morbid state of the religious feelings).
(9.) *Politico-mania* (morbid state of political feeling).

§ 186. (1.) *Homicidal monomania*(*a*) is not to be confounded, according to Marc, with the sudden murderous impulse with which madmen are occasionally seized under the influence of revenge, or of some other passion which controls them; and it is, in like manner, important to distinguish it from delirium. Esquirol understands the term to mean a partial insanity, distinguished by more or less violent cravings of a murderous nature; and subdivides it into—

(*a.*) Cases in which the murder is caused by a firm but insane conviction—the monomaniac being carried away by an avowed but irrational motive, and always manifesting conclusive signs of a partial insanity of the understanding or the feelings.

(*b.*) Cases in which the monomaniac displays no perceptible disturbance of the understanding or the feelings, but is carried away by a blind instinct, by an *inexplicable something*, which impels him to the commission of murder. As, however, is very pertinently remarked by Schürmayer, the distinctions and definitions of Marc and Esquirol do not advance us in the field of forensic psychology a single step beyond what we had already reached by means of the physiology of insanity in general; while their assumed homicidal monomania

(*k*) 1 Beck's Med. Jur., ed. of 1860, p. 732.
(*l*) See § 61.
(*a*) Siebold's Gericht. Med. § 219; Hoffbauer's Psychologie, § 122; Conradi's Commentatio der mania sine delirio, Gott. 1827, 4; Conradi's Beitrag zur Geschichte der Manie sine delirio, Gott. 1835; Artikel Mania sine delirio, in Jesse's Encyclop. Wörterb. der Med. Wissench. Bd. 22. Berlin, 1840, p. 410.

falls, on the one hand, into the well-known rank of mania, and is easily recognized and considered as one of its accidental manifestations, or, on the other hand, draws into the circle of its definition *every* murder of which the author is in a condition to assert, that he was compelled to commit it by an impulse which he found to actuate him.

§ 187. But whether we assign to homicidal mania a distinct place as a peculiar morbid impulse, or whether it is to be treated as a mere occasional and eccentric development of ordinary mania, the result is the same in practice.(*b*) When it involves or implies mental disturbance, it must be recognized, under the checks already mentioned,(*bb*) as a species of derangement which is a legitimate defence in a criminal court.(*c*)

§ 188. The inquiry arises, if juries are to acquit for homicidal mania, what provision is to be made to protect society? Is not, after all, capital punishment, or imprisonment for life, the best remedy for a class of men whose very essence it is, as declared by judicial sentence, to destroy their fellow creatures? To this, as will be more fully seen hereafter, the answer is, that as the law stands now, with homicidal mania recognized by verdicts of juries rather than the public policy of the land, the consequences are certainly very mischievous. But this arises from the very reluctance of legislatures, and of those recently engaged in codifying the criminal code, to provide against a doctrine which, after all, whenever the case arrives, will be sustained on trial. Two eminent French authorities, Brierre de Boismont and Aubanel, have proposed the proper remedy, which, in fact, has been partially adopted by several of our legislatures, *e. g.*, Massachusetts and Pennsylvania. When the defendant is to be acquitted on this ground, let the jury certify this fact, and the defendant be remanded into confinement. But let that confinement be neither with the insane nor the criminal, but in distinct apartments adapted for the purpose of confining this entire class of monomaniacs or insane convicts.(*cc*)

§ 189. Dr. Ray, among all Anglo-American authorities, gives this species of mania the widest sweep. "It was first distinctly described by Pinel," he says, "and though its existence as a distinct form of monomania was for a long time after doubted, it has subsequently been admitted by the principal writers on insanity—by Gall and Spurzheim, Esquirol, Georget, Marc, Andral, Orfila, and Broussais, in France; by Connelly, Combe, and Prichard, in England; by Hoffbauer, Platner, Ettmuller, Henke, and Friedreich, in Germany; by Otto, of Copenhagen; and by Rush, in this country. It has received the various appellations of *monomanie homicide, monomanie meurtrière, melancholie homicide, homicidal insanity, instinctive monomania.* Esquirol, in

(*b*) See the remarks, on this point, of Dr. Forbes Winslow, Journ. Psych. Med. vol. iii. p. 290.

(*bb*) *Ante*, §§ 61, 184.

(*c*) See *ante*, §§ 53, 54, 55. See an interesting treatise by Dr. Woodward, 1 Am. Journ. of Ins. 322. See also People *v.* Kleim, reported 2 Am. Journ. of Insan. 245; Abner Baker's Case Reviewed, 3 Ibid. 26; Trial of Rabello, reported, Ibid. 41; an Essay, by Dr. Aubanel, on the same point, Ibid. 107; Report of Trial of People *v.* Griffin, Ibid. 227; People *v.* Sprague, 6 Ibid. 254; Com. *v.* Furbush, 9 Ibid. 151. For an interesting though desultory sketch of the law, see Mr. Warren's Remarks on Oxford's and M'Naughten's cases, 7 Am. Journ. of Ins. 318; Black. Mag. for Nov. 50.

(*cc*) See *post*, §§ 259, 276.

his valuable memoir, first published in the shape of a note in the French translation of Hoffbauer's work, observes, that homicidal insanity, or *monomanie homicide*, as he terms it, presents two distinct forms, in one of which the monomaniac is always influenced by avowed motives more or less irrational, and is generally regarded as mad; in the other, there are no motives acknowledged, nor to be discerned, the individual being impelled by a blind, irresistible impulse. It is with the latter only we are concerned, for the other is clearly a form of partial intellectual mania; but as this division has not been strictly made by nature, cases often occurring that do not clearly come under either category, the subject will be better elucidated by noticing all the forms of this affection, and seeing how intimately they are connected together."

§ 190. The same distinguished authority suggests the following tests:—

I. In nearly all, the criminal act has been preceded, either by some well-marked disturbance of the health, originating in the head, digestive system, or uterus, or by an irritable, gloomy, dejected, or melancholy state; in short, by many of the symptoms of the incubation of mania. The absence of particulars in some of the cases we find recorded, leaves us in doubt how general this change really is; but a careful examination would, no doubt, often, if not always, show its existence where, *apparently*, it has never taken place.

II. The impulse to destroy is powerfully excited by the sight of murderous weapons, by favorable opportunities of accomplishing the act, by contradiction, disgust, or some other equally trivial and even imaginary circumstance.

III. The victims of the homicidal monomaniac are mostly either entirely unknown or indifferent to him, or they are among his most loved and cherished objects; and it is remarkable how often they are children, and, especially so, his own offspring.

IV. While the greater number deplore the terrible propensity by which they are controlled, and beg to be subjected to restraint, a few diligently conceal it, or if they avow it, declare their murderous designs, and form divers schemes for putting them in execution, testifying no sentiment of remorse or grief.

V. The most of them having gratified their propensity to kill, voluntarily confess the act, and quietly give themselves up to the proper authorities, a very few, only—and these, to an intelligent observer, show the strongest indications of insanity—fly, and persist in denying the act.

VI. While the criminal act itself is, in some instances, the only indication of insanity—the individual appearing rational, as far as can be learned, both before and after the act—in others, it is followed or preceded, or both, by strange behavior, if not open and decided insanity.

VII. Some plead insanity in defence of their conduct, or an entire ignorance of what they did; others deny that they labor under any such condition, and, at most, acknowledge only a perturbation of mind.

§ 191. The following are the indicia given by Taylor:—

1. The acts of homicide have generally been preceded by other striking *peculiarities of conduct* in the individual, often by a total change of character.

2. They have in many instances, previously or subsequently, attempted *suicide*—they have expressed a wish to die or to be executed as criminals.

The following case, which is one of general insanity, of which homicidal mania was the predominant type, is given by Mr. David Paul Brown: "The prisoner, John Windsor, was a man of about seventy years of age, of small and delicate person, and bore the appearance of having been respectably associated in life, and proportionably well educated. Through honest industry and attention to business he had succeeded in laying up a pretty considerable amount of property. About six years before the time of his trial, he lost his first wife, and some two years after that event married the unfortunate woman who came to her untimely death by his hands. She was quite young; some twenty-three years of age, and described to have been interesting, faithful, affectionate, and, in a word, all that her husband conceived she was not. By this wife, Windsor had two children; but so far from their births affording to their paternal parent the pride and satisfaction that it would be supposed his advancing age would receive from such events, they were the innocent cause of that unfounded suspicion which finally developed itself in decided monomania, and terminated in the murder of this unoffending and innocent woman.

"Windsor conceived the idea that these children were not his own—the notion originating, no doubt, from his reflection upon his advanced age, and the great disparity of years between himself and wife. There was, however, no proof of this, though it is a fair surmise, to explain how the demon of jealousy and suspicion first crept into his bosom. He had been married before, and from all that appeared to the contrary, had lived peaceably enough with his first wife, who, we believe, never brought him any children. He had always been a strange man, and by ordinary people, would have been considered an insane man, as far back as could be traced; but by the extraordinary people of the county where he lived, it appears he was regarded without remark or suspicion. His beliefs and superstitions on many subjects were kindred to those of others, and in proportion as he exceeded them in his disordered flights, they venerated him rather as a superior being. He believed in ghosts, in fortune-tellers, charms, and witches—so did they. Their folly was from ignorance—his from a diseased physical organization and perverted mind. But this distinction they could not see; and the fact has only been adverted to here for the purpose of showing how difficult it would be to convince such a set of people that any man could be insane, whatever might be his doctrine or conduct.

"The doubt of the legitimacy of the children having once entered his mind, it naturally sought for objects to connect with it and strengthen it. It seems that there was one Joseph Osborne, who was acquainted with Windsor's wife, and frequently visited the defendant's store and house—upon this man his suspicions fell, though without the slightest foundation.

"For some considerable time previous to the murder, Windsor watched every action of his wife and this Osborne, closely. Their most innocent and ordinary actions were construed by him into evidences of the strongest guilt. He made memoranda on pieces of paper, and the backs of old almanacs, etc., of

everything they did and said, every expression of their countenance, their slightest gesture, both when they were apart, and together. Some of his entries were such as these: '14th April.—Found them fastened up together—wife confused, etc. Quarrelled with wife about it. Wife abused me about Osborne. She would delay milking till dark to meet O.; traced their tracks; showed them to Ann and John Rollins; caught them together afterwards. She went home 5th January, 1848, to her father's; before she went, she took a saunter in the garden to the grape-house, touched the strainer as she passed, and O. met her there; saw the track plain; saw him in the cooper shop beckoning for her.

"'January, 1847.—Saw wife and O. winking; he patted her on the shoulder. February 14th.—She went to see O. March 14th.—Wife angry because she can't see O., which she says is heaven; says she didn't like me. May 2d.—They meet out—so every opportunity while I was sick. He poisoned my dog. July 9th.—Wife abused me—said I was a fit associate for Billy Briam. August 20th.—She was with O. last night. I looked sulky in the morning, and she took the hint and denied it. Oct. 11th.—She was with him in the stable. I now found out that rattling the strainer was a sign for him. April 1st.—Said she was not satisfied with me; said I need not accuse poor O. June 7th and 9th.—They were together; also 28th, and 29th. She erased the tracks with a hoop; she made sport of my accusations. She found out she was pregnant, and tried to make me believe it was mine. I walked with her, and going by where the strainer was hung, she touched it; knowing it was a sign for O., I accused her of it, and she 'blowed me,' which came near killing me, etc. etc.'

"These notes contained almost a diary of his suspicions—his wife's conduct, etc.; a note of every one who came to the house, and showed suspicions of almost every one. They stated many instances of abuse of himself by his wife, by words and blows; most aggravating and tantalizing language, &c. The above extracts, from the original papers kept by the prisoner, and produced at his trial, will serve to give a fair idea of his condition of mind at the time to which we refer.

"Day by day, this delusion strengthened upon him. And there was still another cause more extraordinary, added to it. He supposed (obviously, from his reliance on witchcraft) that his wife and Osborne had acquired the power of blowing 'a hot, poisonous stuff' upon him, and that they were constantly exercising this power, for the promotion of their criminal intercourse. Nor was this suspicion confined entirely to these two, but he thought that several of his neighbors, whom he believed to be confederates with and abettors of his wife and Osborne, possessed a similar power of doing him injury. He said that they all could blow this hot stuff upon him from a considerable distance, and that his nose, face, head, and whole body, were continually burning with it. It was to this power he referred, when he speaks in his memorandum of his wife's having 'blowed him.'

"In a short time from the commencement of these two severe delusions, they became combined together—inseparably—and finally took entire possession of his mental faculties. His entire hallucination had reference to his wife's infi-

delity, and the conspiracy to poison him. He would sometimes get up from his bed in the middle of the night, and take his clothes and shirts several miles off, to a woman, to have the 'poisonous stuff' washed out of them.

"On one occasion, while driving out with his wife and children, he said that they had got along very comfortably for some distance, when all at once the horse became frightened so that he could hardly hold him; shortly, the horse became frightened again. The first time he said nothing to his wife; the second time he spoke to her and said: 'Nancy, child, if you do not quit blowing this poison on me, the horse will run away and kill us and the children; the horse has got the scent of this poison you are blowing on me, and is frightened.' She answered, of course, that she had blown no poison on him, but it was impossible to turn his mind from the diseased bent it had taken.

"He would bore holes all over his house, through which to watch the motions of his wife. One day he suddenly took his departure from home and went to Wilmington, for the purpose of consulting a fortune-teller as to the fidelity of his wife, and legitimacy of the children. While there he called upon an eminent lawyer to draw up his will, disinheriting his children as bastards, &c. It would be impossible, in this brief sketch, to follow him amid all the crooked, erratic paths of his disordered intellect. Each day his monomania took a deeper, deadlier hold upon him, until finally he frequently and publicly threatened to destroy the lives of his wife, Osborne, and some three or four others, to whom his suspicions had attached.

"About this time, Mrs. W. was cautioned by her friends to beware of her husband, but, as he had frequently threatened, without doing her any injury, she expressed herself not to be afraid of him. His conduct to her was very changeable; at one time he would say, 'Nancy, I have told you, that you would some day tremble in my presence, and I intend to kill you;' again, he would tell her, 'I never shall hurt you, unless in self-defence.' A few days before the homicide he was found shut up in his store, lying on the counter, with new muslins sewed together for a covering. His own clothes and bed linen, he said, were all sprinkled with poison. Being asked whether he had taken any nourishment, he replied, that he was afraid to take anything, but hot water and crackers. A day or two after this, he wrote out a long account of his suspicions of his wife's infidelity, and referred fully to the contemplated crime. The next day after he had written the letter, he loaded his gun and left the house, saying to a person he met, 'If you should hear of anything serious happening at my place, don't disturb me.' In a short time after this he returned home, went to the garret, where his wife was weaving, told her that he had often said to her that the time would come when she would tremble in his presence; bid her prepare, as her time was short, and then, drawing out a pistol, shot her mortally. He then went down stairs, and taking his gun in his hand, took his position at his door, and levelled the weapon at a man who was passing by. At this moment an acquaintance coming up, said, 'Captain, what's the matter?' He replied, 'Where is the d—d son of a b—h? I have shot my wife—go up stairs and see her, if you choose.' At this moment it would appear that Windsor was in a state of high excitement. The man ac-

cordingly went up stairs, and found Mrs. Windsor lying upon the floor, very pale, with a child of eighteen months sitting by her, crying. She at once requested to be carried down stairs; said that her husband had shot her, and that she should die in a few minutes. Immediately before her death she sent for her husband, who at once went to her. She desired to be lifted in her bed, and said to him, 'Take care of your children; I have but a few moments to live; before God, and on my dying bed, they are yours, and I want you to do a father's part by them.' She then requested him to look at her wound; he began to cry, and said he would not have done it for a thousand worlds, and then hurried out of the room.

"Mrs. Windsor died about three o'clock that afternoon. In her dying moments she expressed no anger or reproach towards her husband, but begged that he should not be hurt or removed from the house. On his part he exhibited deep grief for the act he had committed; exclaimed that he had done a very wicked deed, and, as for his children, he hoped God would bless them, and declared that he would not hurt them for the world. Soon after the murder he took a half gill of laudanum, and then locked himself up in his store. When found there, he was lying on the counter with a pistol in his hand, which, being requested to deliver up, he did so in the most passive manner. He then rolled up his sleeve, exhibited his bare arm, and remarked that, yesterday it was full and fleshy, but now most strangely shrunk; mentioning, at the same time, something about that 'cursed stuff.' In a short time after the murder he seemed to forget all about it, and rarely, if ever, referred to his wife again; but his delusion concerning the poisonous stuff that was thrown upon him still remained. He imagined, now, that every one who approached him was blowing this poison upon him, and when visited in his cell by the physician, who asked him how he had slept during the night, replied in a low whisper, 'They put it in the water, and I could not close my eyes.' He seemed particularly to suspect the sheriff and the keepers of the jail, and said that they were constantly 'blowing on him.'

"On his trial, which took place some two months after the commission of the murder, he was defended by Messrs. Robinson, Houston, James A. Bazard, and David Paul Brown. In its progress he appeared to take little or no interest, and as to the case and all its circumstances and consequences, seemed to be the most unconcerned in the room. Not so, however with regard to the subject of his hallucination; from the first moment he entered the court until he left it, he sat with a newspaper covering his head, to shield it from the 'poison;' watching every man who approached him with an insane quickness of eye, crouching under the fear of injury, and presenting really the most painful spectacle of a wrecked and ruined mind, that could possibly be imagined.

"Notwithstanding all the facts that have been related, and which so clearly proved his insanity, and that there was no evidence of any kind offered by the prosecution to oppose this proof, the jury in the case, after a long and tedious trial, returned a verdict against the prisoner, of 'Guilty of murder in the first degree!' The court speedily proceeded to pronounce the sentence of the law, and the poor old man was condemned to be executed on the 17th day of September, 1851, showing, that while a plea of insanity supported by such facts

as this case presented, would, in enlightened communities, have assured an acquittal of the prisoner, yet, in this particular section, where the minds of the people were so much imbued with the grossest doubts and superstitions, it seemed to have been the weakest of all defences. The old man was, however, pardoned by the Governor, but still lives in confinement, a monument of the wisdom, intelligence, mercy and justice of a Sussex County jury."(*g*)

(2.) *Kleptomania*(*h*)—(Morbid propensity to steal.)

§ 192. *Kleptomania* occurs not unfrequently as a symptom in mania, and the mental confusion incidental to it, and in depression and delirium, in which its consideration will involve less difficulty. But where it occurs in cases of concealed insanity, its discovery is not easy. Ellinger(*i*) gives the following practical directions :—

1. In the earlier developments of mania, kleptomania is an important symptom ; it will, however, be found accompanied, more or less, by other symptoms of incipient derangement, such as a general alteration in the accustomed mode of feeling, thinking, occupation, and life of the individual, a disposition to scold, dispute, and quarrel, to drink, and to wander about busily doing nothing, and the bodily signs of excitement (restlessness, want of sleep, rapid pulse, &c.).

2. Kleptomania continues after the disease, to all external appearance, has ceased. Here the disease also has not yet terminated, which can only be indicated by a return of the original state of thought and feeling. (This calls for a continued course of observation by the examining physician.)

3. There are distinct but occult hallucinations at work. These are to be assumed the more readily, the more bizarre and exclusive is the desire to steal, and the more the objects to which it is confined are out of proportion to the property of the thief; and particular attention should be paid to the existence, present or past, of other symptoms of insanity.

4. Automatic impulses, such as the cravings of pregnant women, actuate the perpetrators, which become the more probable the more strongly reason revolts at and abhors the deed, the more inconsiderable and grotesque the peculations, the more promptly the stolen articles are returned, and the more other morbid symptoms are apparent in the body and the mind when the deed is committed.

"There are persons," says Dr. Rush, "who are moral to the highest degree as to certain duties, but who, nevertheless, live under the influence of some one vice. In one instance, a woman was exemplary in her obedience to every command of the moral law, except one—she could not refrain from stealing. What made this vice more remarkable was, that she was in easy circumstances, and not addicted to extravagance in anything. Such was the propensity to

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(*g*) 2 Brown's Forum, pp. 464 to 474.

(*h*) See Méd. Lég. M. Orfila, tome i. p. 364, Paris, 1848 ; Etudes Cliniques des Maladies Mentales, M. Morel, tome i. p. 319, Paris, 1854. See *ante*, § 106, as to hereditary tendency to steal.

(*i*) I. a. W. P. 159.

this vice, that when she could lay her hands on nothing more valuable, she would often at the table of a friend fill her pockets secretly with bread. She both confessed and lamented her crime." "Cases like this," says Dr. Ray, "are so common, that they must have come within the personal knowledge of every reader who has seen much of the world, so that it will be unnecessary to mention them more particularly. It would be difficult to prove directly that this propensity, continuing as it does throughout a whole life, and in a state of apparently perfect health, is, notwithstanding, a consequence of diseased or abnormal action in the brain, but the presumptive evidence in favor of this explanation is certainly strong. First, it is very often observed in abnormal conformations of the head, and accompanied by an imbecile condition of the understanding. Gall and Spurzheim saw in the prison of Berne a boy twelve years old, who could never refrain from stealing. He is described as 'ill-organized and rickety.' At Hainau they were shown an obstinate robber, whom no corporal punishment could correct. He appeared about sixteen years of age, though he was in fact twenty-six; his head was round, and about the size of a child's one year old. He was also deaf and dumb, a common accompaniment of mental imbecility. An instructive case has been lately recorded, in which this propensity seemed to be the result of a rickety and scrofulous constitution. Secondly, this propensity to steal is not unfrequently observed in undoubted mania. Pinel says it is a matter of common observation that some maniacs, who, in their lucid intervals, are justly considered models of probity, cannot refrain from stealing and cheating during the paroxysm. Gall mentions the case of two citizens of Vienna, who, on becoming insane, were distinguished in the hospital for an extraordinary propensity to steal, though previously they had lived irreproachable lives. They wandered over the house from morning to night, picking up whatever they could lay their hands upon—straw, rags, clothes, wood, etc.—which they carefully concealed in their room."(*j*)

§ 193. The individuality of Kleptomania (Stehltrieb) is demonstrated by the remarkable degree to which it prevails among epileptics of all classes and conditions. Dr. Erhardt(*k*) enumerates many cases where these unhappy sufferers have been possessed with irrepressible desires to appropriate to themselves whatever they could secretly lay their hands on, valuable or not. And generally with regard to the moral responsibility of epileptics, it is important to observe, says the same judicious author, that even after attacks have been for months suspended, the mind is in a condition of disorganization which should properly divert from it the application of those severe rules which apply to minds perfectly sound.(*l*)

§ 194. Gall, says Dr. Ray, met with four examples of women who, when pregnant, were violently impelled to steal, though perfectly upright at other times. Friedreich gives the case of a pregnant woman who, otherwise perfectly

(*j*) Ray on Insanity, 189, 190, 191; see *ante*, § 106.
(*k*) Ueber Zurechungsfähigkeit der Epileptischen.
(*l*) See also Boileau de Castelnau De l'epilepsie dans ses rapports avec l'aliénation mentale, considérés au point de vue médico-judiciare. Annales d'Hygiène publ. et de Médecine Lég., Avril, 1852, No. 94.

honest and respectable, suddenly conceived a violent longing for some apples from a particular orchard, two or three miles distant. Notwithstanding the entreaties of her parents and husband not to risk her character and health, and their promises to procure the apples for her in the morning, she started off in company with her husband, at nine o'clock of a cold September night, and was detected by the owner in the act of stealing apples. She was tried and convicted of theft, but subsequently a medical commission was appointed by the Supreme Court to examine and report upon her case. Their inquiries resulted in the opinion that she was not morally free, and consequently not legally responsible while under the influence of those desires peculiar to pregnancy; adding, that if Eve had been in the condition of the accused when she plucked the forbidden fruit from the tree, the curse of original sin would never have fallen on the race.(*m*)

Fodéré tells us that he has often witnessed an irresistible propensity to steal even in persons well educated, and who, during infancy, have often been chastised for this vice. They had conceived, in consequence, the greatest horror for it, yet, in riper age, could not prevent themselves, when opportunity occurred, of indulging it.(*n*) "I had a female servant," he adds, "who was a very good Christian, very wise, and very modest, but who could not prevent herself from stealing in secret, from myself and others, even the most trifling things, though aware of the turpitude of the action. I sent her to the hospital as mad. After a long time, appearing to be reclaimed, she was restored to her place among the other servants; by little and little, in spite of herself, the instinct returned; and being distracted on the one hand by the evil propensity, and on the other by the horror which she felt of it, she fell into an access of mania, and suddenly died in the violence of a paroxysm."

"The propensity to steal in magpies, and other domesticated birds," says Dr. Millingen,(*o*) "is daily observed, and we have numerous examples to prove that acquired instincts become hereditary in many animals. This fact is illustrated in various races of dogs. Roulin relates that the dogs employed for hunting deer in some parts of Mexico seize the animal by the belly, and overturn it by a sudden effort, taking advantage of the moment when the body of the deer rests only upon the fore legs; the weight of the animal thus thrown over being often six times that of its antagonist. The dog of pure breed inherits this disposition, and never attacks the deer from before while running; even should the deer, not perceiving him, come directly upon him, the dog slips aside, and makes his assault on the flank; when as other hunting dogs, though of superior strength and general sagacity, which are brought from Europe, are destitute of this instinct."(*p*)

Very recently (April, 1855) a trial, involving the defence of kleptomania, has been the cause of much discussion by the London press. Mrs. R., the

(*m*) Ray on Insanity, pp. 192-3.

(*n*) For other cases, *vide* Münchmeyer, in Henke's Zeitschrift, vol. xlix. p. 350; Dict. des Sciences Médicales, tome xiv. art. Femme, p. 624, and art. Grossesse; Prager Vierteljahrschrift, V. 30, Bd. 2, p. 121.

(*o*) Mind and Matter, pp. 22, 23.

(*p*) Roulin, Annales des Sciences Naturelles, tome xvi. p. 16, 1829. See as to hereditary kleptomania, § 106.

wife of a physician of rank and affluence, was detected in secreting some French cambric handkerchiefs in the shop of a respectable haberdasher. The jury were unable to agree, and the *Times*, in discussing the case, made the following statement:—

"It is an instance of that not very uncommon monomania which leads persons otherwise estimable and well conducted to pilfer articles of a trifling value, in obedience to the impulses of a diseased imagination. The fact is notorious that many persons of high rank and ample means have been affected with this strange disorder. Every one who is acquainted with London society could at once furnish a dozen names of ladies who have been notorious for abstracting articles of trifling value from the shops where they habitually dealt. Their *modus operandi* was so well known, that on their return from their drives their relatives took care to ascertain the nature of their paltry peculations, inquired from the coachman the houses at which he had been ordered to stop, and, as a matter of course, reimbursed the tradesmen to the full value of the pilfered goods. In other cases a hint was given to the various shopkeepers at whose houses these monomaniacs made their purchases, and they were simply forewarned to notice what was taken away, and to furnish the bill, which was paid as soon as furnished, and, as a matter of course, by the pilferer herself, without any feeling of shame, or emotion of any kind."

The *value* of the thing stolen, as is pertinently remarked by Dr. Kieser,(*pp*) does not generally enter into the motive. Old bits of iron, wood, or thread, are stuck furtively into the pocket. The disease often comes on by paroxysms, and, after the attack, the thing stolen is returned.

(3.) *Pyromania*—(Morbid incendiary propensity.)

§ 195. An independent symptom of this kind may have as little substantive existence as homicidal monomania, but it will remain, nevertheless, observable as a symptom of the disease in cases of insanity. In investigating such cases, the following points should be kept in view:—

(*a.*) In persons *who have passed the age of puberty*, whether there is not depression or partial insanity at bottom, whether the individual was not overcome and impelled to the deed by a nameless dread which he could not dispel, or by some crazy notion before concealed.

(*b.*) In persons *just arrived at the age of puberty*. Here the state of development in general, and in particular that of the mind, of the whole body, and of the sexual organs, must be accurately weighed and estimated, with special reference to age and sex, education and mode of life, as experience teaches that the irregularities of every kind which here occur (such as accelerated and impeded growth, unusual prostration and fatigue of the limbs, with painful sensations not produced by adequate visible causes, swellings of the glands, anomalies in menstruation, cramps and other nervous attacks, and particularly irritations of mind), exert the most important influence on the growth and increase of certain desires and inclinations, and easily impair the

(*pp*) Elemente der Psychiatrik, Bonn, 1855, p. 195.

power of self-control. These transition states acquire a particular significance when accompanied by home-sickness, which, without necessarily attaining the height of complete melancholy, and when only beyond the ordinary degree of development, is sufficient to mislead the poor, tortured, half-grown child to the last extremes of action, not to arson alone, but to murder, particularly the poisoning of children.

(*c.*) *Where the individual is yet in infancy.* Here, in the absence of reason, reflection, and religious and moral culture, a childish curiosity generally furnishes the motive, more rarely, a grudge, anger, or revenge; but physical and mental or moral causes may also be at work independently or as auxiliaries.(*q*) Tender years are sufficient, in such cases, to exclude the idea of criminal responsibility.(*r*)

§ 196. "A morbid propensity to incendiarism, or *pyromania*, as it has been termed, where the person, though otherwise rational," says Ray, "is borne on by an irresistible power to the commission of this crime, has received the attention of medical jurists in Europe, by most of whom it has been regarded as a distinct form of insanity, annulling responsibility for the acts to which it leads. Numerous cases have been related, and their medico-legal relations amply discussed by Platner, Vogel, Masius, Henke, Gall, Marc, Friedreich, and others. In a few of these cases the morbid propensity is excited by the ordinary causes of insanity; in a larger class it is excited by that constitutional disturbance which often accompanies the menstrual periods; but in the larger class of all, it occurs at the age of puberty, and seems to be connected with retarded evolution of the sexual organs. The case of Maria Franc, quoted by Gall from a German journal, who was executed for house-burning, may be referred to the first class. She was a peasant of little education, and in consequence of an unhappy marriage, had abandoned herself to habits of intemperate drinking. In this state a fire occurred in which she had no share. From the moment she witnessed this fearful sight, she felt a desire to fire houses, which, whenever she had drunk a few coppers' worth of spirits, was converted into an irresistible impulse. She could give no other reason nor show any other motive for firing so many houses, than this impulse which drove her to it. Notwithstanding the fear, the terror, and the repentance she felt in every instance, she went and did it afresh. In other respects her mind was sound. Within five years she fired twelve houses, and was arrested on the thirteenth attempt."(*s*)

The extent to which this mischievous propensity exists can only be determined by a very careful examination of local statistics.

"There is another class of incendiary fires," says a late number of the London Quarterly Review, "which arise from a species of monomania in boys and girls. Not many years ago the men of the Fire Brigade were occupied for hours in putting out no less than half a dozen fires which broke out, one after another, in a house in West Smithfield: and it was at last discovered

(*q*) Ellinger, ib. 158.

(*r*) Compare on the subject of Pyromania, Casper, Denkwürdigkeiten der medicinischen Statistik und Staatsarzneikunde. Berlin, 1846, p. 251.

(*s*) Ray on Insanity, pp. 197, 198.

that they were occasioned by a youth who went about with lucifer matches, and slyly ignited everything that would burn. He was caught in the act of firing a curtain in the very room in which a fireman was occupied in putting out a blaze. A still more extraordinary case took place in the year 1848, at Torluck House, in the Isle of Mull. On Sunday, the 11th of November, the curtains of a bed were ignited, as it was supposed, by lightning; a window-blind followed; and immediately afterwards the curtains of five rooms broke out, one after another, into a flame; even the towels hanging up in the kitchen were burnt. The next day a bed took fire, and it being thought advisable to carry the bed-linen into the coach-house for safety, it caught fire three or four times during the process of removal. In a few days the phenomenon was renewed. The furniture, books, and everything else of an inflammable nature were, with much labor, taken from the mansion, and again some body-linen burst into a flame on the way. Even after these precautions had been taken, and persons had been set to watch in every part of the house, the mysterious fires continued to haunt it until the 22d of February, 1849. It was suspected from the first that they were the act of an incendiary, and upon a rigid examination of the household before the Fiscal General and the Sheriff, the mischief was traced to the daughter of the housekeeper, a young girl on a visit to her mother. She had effected her purpose, which was perfectly motiveless, by concealing combustibles in different parts of the house."(*t*)

§ 197. "This plea," we are told by Taylor, "has been already admitted in English Law,(*u*) but chiefly in those instances in which there was strong reason to suspect intellectual aberration. In one recent case,(*v*) the prisoner was convicted on the principle that although of weak intellect, she knew right from wrong."(*w*) Among several important trials in which this plea has been urged in defence, the one most interesting to the medical jurist is that of *James Gibson*, tried before the High Court of Justiciary, Edinburgh,(*x*) of which a very full report will be found in Cormack's Edinburgh Journal, February, 1845, p. 141. The prisoner was charged with setting fire to certain premises, and the defence chiefly rested upon the allegation that he was in a state of mind which rendered him irresponsible for the act. The medical evidence was generally in favor of the insanity. The Lord Justice Clerk (Hope), in a very elaborate charge to the jury, laid down for their guidance most of the legal propositions which have been already discussed under homicidal mania. He remarked that they were "not to consider insanity according to the definitions of medical men, especially such fantastic and showy definitions as are found in Ray, whose work was quoted by the counsel for the panel, and in many other medical works on the subject. He adopted Mr. Alison's view that the consciousness of right and wrong must be applied to the *particular act*, and not to crime in the abstract. The duty of deciding on this question is with the jury; it is not to be delegated to medical men, and by relying upon their own judgment, their decisions would be nearer the truth

(*t*) London Quarterly Review, January, 1855, p. 11.
(*u*) See cases, Med. Gaz. xii. p. 80.
(*v*) Reg. *v.* White, Wilts Summer Ass. 1846.
(*w*) See Ann. d'Hyg. 1833, ii. 357; 1834, ii. 94. (*x*) Dec. 23, 1844.

than that of any body of medical witnesses." The jury negatived the plea, and the prisoner was sentenced to transportation for fourteen years.(*y*)

An extraordinary instance of pyromania may be found in the case of *Jonathan Martin*, who fancied himself to be deputed from God to burn down the Cathedral of York, in order to do away with the heresies which he supposed to exist in the church.(*z*)

§ 198. The following considerations, laid down by Hencke, and adopted by Marc, are recommended to us by the additional authority of Dr. Ray:—

1. To prove the existence of pyromania, produced by the sexual evolution, the age should correspond with that of puberty, which is between twelve and fifteen. Sometimes, however, it may occur, especially in females, as early as the seventh or tenth year, and, therefore, if the symptoms are well marked, we have a right to attribute them to this cause.

2. There should be present symptoms of irregular development; of marked critical movements, by means of which nature seeks to complete the evolution. These general signs are, either a rapid increase of stature, or a less growth and sexual development than is common for the age of the individual; an unusual lassitude and sense of weight and pain in the limbs, glandular swellings, cutaneous eruptions, &c.

3. If, within a short time of the incendiary act, there are symptoms of development in the sexual organs, such as efforts of menstruation in girls, they deserve the greatest attention. They will strongly confirm the conclusions that might be drawn from the other symptoms, that the work of evolution disturbed the functions of the brain. Any irregularity whatever of the menstrual discharge, is a fact of the greatest importance in determining the mental condition of incendiary girls.

4. Symptoms of disturbance in the circulating system, such as irregularity of the pulse, determination of blood to the head, pains in the head, vertigo, stupor, a sense of oppression and distress in the chest, are indicative in young subjects of an arrest or disturbance of the development of the sexual functions, and therefore require attention.

5. For the same reason symptoms of disturbance in the nervous system, such as trembling, involuntary motion of the muscles, spasms and convulsions of every kind, even to epilepsy, are no less worthy of attention.

6. Even in the absence of all other symptoms, derangement of the intellectual or moral powers would be strong proof, in these cases, of the existence of pyromania. Of the two, the latter is far the more common, and is indicated by a change in the moral character. The patient is sometimes irascible, quarrelsome, at others, sad, silent, and weeping, without the slightest motive. He seems to be buried in a profound revery, and suddenly starts up in a fright, cries out in his sleep, &c. These symptoms may have disappeared and reappeared, or degenerated at last into intellectual mania.

7. The absence of positive symptoms of mental disorder, as well as the presence of those which appear to show that the reason is sound, is not incompatible with the loss of moral liberty. The remarks of Marc on this point

(*y*) Taylor's Med. Jur. 595.

(*z*) Ibid. p. 595.

deserve to be quoted in full: "Even when, previously to the incendiary act, they have shown no evident trace of mental alienation, and been capable of attending to their customary duties; when, on their examinations, they have answered pertinently to questions addressed to them; when they have avowed that they were influenced by a desire of revenge; we cannot conclude with certainty, that they were in possession of all their moral liberty, and that, consequently, they should incur the full penalty of the crime. These unfortunates may be governed by a single fixed idea, not discovered till after the execution of the criminal act. Pyromania, resulting from a pathological cause, may increase in severity, as this cause itself is aggravated, and suddenly be converted into an irresistible propensity, immediately followed by its gratification."(*a*)

The theory that pyromania (Brandstiftungstrieb) is often a concomitant of the first development of puberty, has led to a series of very interesting disquisitions by Landsberg.(*b*)

In the case of William Spear, who was tried for arson, in 1858, at Utica, before Judge Allen, of the Supreme Court, pyromania was interposed as a defence. The weight of medical testimony, however, was against the defence, and the jury were so charged by the court. In the course of the charge, Judge Allen said: "The existence of the impulsive mania could only be proved by the commission of the acts which it was sought to excuse, which would be no evidence at all; and the jury could never know, even should it be conceded that such a 'moral mania' might and did exist, whether, in a particular case, the acts were the result of this impulse, or the fruits of a wicked and depraved mind. Courts and juries, in the attempt to determine the existence of moral mania, or irresistible impulse, apart from mental disturbance and derangement, as evidenced by the well-known symptoms of mental diseases, as an excuse for crime, would become bewildered and lost in the labyrinth of scientific niceties and fanciful theories. But when called upon to consider the subject of insanity, regarded as a derangement of the intellect, a mental disease, or the manifestations of disease affecting the mind, whether the moral powers were or were not impaired or perverted, they were not entirely without the means of arriving at a satisfactory conclusion, with the aid of intelligent and experienced medical men, and in the exercise of their good judgment.

"The judge then commented upon the evidence bearing upon the question of the insanity of the prisoner in detail, and suggested that the medical witnesses, who favored the idea of the insanity and consequent irresponsibility of the accused, appeared to think that the particular form of the disease resembled that called *Pyromania*, which was evidenced by a morbid propensity to incendiarism, and which it was claimed existed when a person otherwise rational was impelled irresistibly to the commission of this crime: that this case was open to remark in this particular, that in every instance in which the

(*a*) Ray on Insanity, pp. 201–203.

(*b*) Ueber die Feuerschausucht, Hermann, Vezin (Aerztliches Obergutachten über den Gemüthszustand der sich wegen Brandstiftung in Untersuchung befindenen); Höfling (Die Lehre vom krankhaften Brandstiftungstriebe); and Meding (Ein Nachtrag zu dem Gespenst des Brandstiftungstriebes). See an interesting case of pyromania in State *v.* Greenwood, reported in 5 Am. Journ. of Insan. 237.

prisoner had fired a building, the act was traceable to motives of hatred, and a desire for revenge upon some individual for an act really committed by that individual, offensive to the prisoner. When every act of incendiarism could be traced directly to a *motive* which would be influential with a *bad man*, and such as not unfrequently, if not ordinarily, influenced men in the commission of like crimes, and when, in no instance, the torch had been applied from mere love of burning, it would not be safe to excuse the party, simply because the motive might, to the jury, seem inadequate. So long as there was no delusion, no loss of memory and judgment, and the party sought the very usual method of wicked men to gratify revenge, and resorted to the same means to conceal the evidences of his crime, he should not be excused upon any theory of moral insanity, or by reason of any sympathy, which would be entirely misplaced." The judge then submitted the case to the jury, with the remark that it was their peculiar province to determine whether or not the "prisoner was, within the rules thus imperfectly laid down, responsible for the act, and therefore guilty of arson."(*bb*)

(4.) *Aidoiomania*(*c*)—(Morbid sexual propensity.)

§ 199. Marc gives the name of aidoiomania to the excess of the sexual impulse, which is called *satyriasis* when it occurs in the male, and *nymphomania*, or *uteromania*, in the female. This abnormal propensity occurs as a symptom of mania, lunacy, and depression, as well as of imbecility with maniacal excitements, but is also found coupled with freedom of reason and of self-control; in which case, of course, the responsibility of the agent is not suspended. How far the court, in admeasuring the punishment, is to allow for the circumstance that the individual was carried away in an extraordinary manner by the physical impulse and the external incitement, is a matter which will be considered in future sections.(*d*)

§ 200. "Morbid activity of the sexual propensity," says Dr. Ray, "is unfortunately of such common occurrence, that it has been generally noticed by medical writers, though its medico-legal importance has never been so strongly felt as it deserves. This affection, in a state of the most unbridled excitement, filling the mind with a crowd of voluptuous images, and ever hurrying its victims to acts of the grossest licentiousness, though without any lesion of the intellectual powers, is now known and described by the name of *aidoiomania*. We cannot convey a better notion of the phenomena of this disorder, than by quoting a few examples from Gall, by whom it was first extensively observed and its true nature discovered. Its milder forms and early stages, when not beyond the control of medical and moral treatment, are illustrated in the following cases:—

(*bb*) Am. Journ. of Insan. 1858, p. 200.

(*c*) Siebold's Gericht. Med. § 210. An interesting case of Uterine Furor will be found in El. v. Siebold's Journ. vol. vi. p. 943. See also a case in Henke's Zeitschr. 41, p. 393. A very able essay on Nymphomania will be found in Dict. des Sciences Méd. von Louyer, Villermay, tome xxxvi. p. 561.

(*d*) *Post*, §§ 259–276. On the subject of monomania and its species, compare Friedreich, Handbuch der gerichtlichen Psychologie, where the literature bearing on the subject is to be found at large.

"A robust and plethoric young man came to reside in Vienna. Having no *liaisons*, he was unusually continent, and was soon attacked with erotic mania. Gall, pursuing the treatment indicated by his peculiar views of the origin of the disease, succeeded in restoring him in a few days to perfect health.

"A well educated, clever young man, who, from his infancy almost, had felt strong erotic impulses, succeeded in controlling them to a certain extent by means of equally strong devotional feelings. After his situation permitted him to indulge without constraint in the pleasures of love, he soon made the fearful discovery, that it was often difficult for him to withdraw his mind from the voluptuous images that haunted it, and fix it on the important and even urgent concerns of his business. His whole being was absorbed in sensuality. He obtained relief by an assiduous pursuit of scientific objects, and by finding out new occupations."(*e*)

Pinel has related a very similar case: "A man had creditably filled his place in society till his fiftieth year. He was then smitten with an immoderate passion for venereal pleasures; he frequented places of debauchery, where he gave himself up to the utmost excesses, and then returned to the society of his friends, to paint the charms of pure and spotless love. His disorder gradually increased; his seclusion became necessary; and he soon became a victim of furious mania."

§ 201. "Many more cases like these might be quoted," continues Dr. Ray, in commenting on the above, "particularly from the writings of Esquirol, Georget, and Marc, but the above are sufficient to illustrate a truth, as generally recognized as any other in pathology, and to convince the most sceptical mind, that if insanity—or, in more explicit terms, morbid action in the brain inducing a deprivation of moral liberty—ever exists, it does in what is called aidoiomania."(*f*)

Under this head may be considered those cases of morbid erotic impulses which spend themselves on unnatural objects. The more common of these are those which the domestic history of classic antiquity makes familiar to us, and which St. Paul adverts to so forcibly in the first chapter of the Epistle to the Romans. To what extent these unnatural passions were carried is illustrated by the paintings in at least one of the exhumed chambers of Pompeii. And recent trials have shown, that if the same morbid developments are less numerous at the present day, they are at least equally eccentric.

Some years since the town of Leipsic was startled by the fact that a number of young girls had been assaulted in the streets, by a man wrapped in a cloak, who struck a lancet in their arms, just above the elbow, and then vanished. It was a long time before the perpetrator was discovered. When he was at last detected and put on trial, it turned out that he had been impelled to these outrages by a morbid sexual impulse—that the incision of the lancet had been accompanied with seminal emission—and that his whole existence had become absorbed in the alternate excitement and depression which preceded and succeeded the act.(*g*)

(*e*) Ray on Insanity, p. 195.
(*f*) Ray on Insanity, pp. 196, 197.
(*g*) Wharton's Cr. Law, § 824.

The same state of facts was developed in the trial, in London, of a man named Williams, for a similar species of assault.(*h*)

Similar is the case of Sprague, already cited.(*hh*)

Still more startling were the exposures attending the trial of a sergeant in the French army, in 1848. For some time previous, dead bodies had been exhumed and had been torn to pieces at or near the graves. On closer inspection the horrible fact was disclosed that sexual connection had been attempted with the female corpses. The guilty party turned out to have been a young man scarcely twenty-five, of prepossessing manner and appearance, and otherwise respectable character. The psychological features were the same as in the preceding cases. The act was preceded by uncontrollable excitement, and followed by great exhaustion.(*i*)

Foderé tells us that a young monk who, in travelling, happened to lodge in a house where a young girl, who was thought dead, had just been laid out, and offered to pass the night in the chamber where the coffin was, and to watch the dead. During the night, having uncovered it for the purpose of examination, and still finding in her countenance some traces of beauty, he determined to satisfy his lust, although the object was not in a condition for exciting desire. Nevertheless he satisfied himself, and departed early in the morning. The dead person came to life, however, the next day, and nine months afterwards had a child, to the great astonishment of herself and parents. The monk about this time arrived in the same place, and avowed himself the parent of the child, and married the mother after throwing off the vows, which he proved he had been forced to pronounce.

The following fact, taken from Briérre de Boismont, shows a more permanent perversion, and reveals a settled pathologic condition. A man was arrested in a small town for a crime which no one believed, but which, however, was proved at the trial. A young girl, sixteen years old, belonging to one of the first families of the town, had just died. A part of the night had passed, when the noise of a piece of furniture falling in the room where the dead person lay was heard. The mother, whose chamber was next to it, immediately ran there, and, in entering, saw a man escaping in his shirt from the bed of her daughter. Her fright caused her to utter loud cries, which brought around her all the persons of the household. They seized the intruder, who appeared almost insensible to everything passing around him, and who answered but confusedly to the questions addressed him. The first idea was that it was a robber; but his dress and certain signs directed suspicion in another direction, and it was soon perceived that the young girl had been deflowered and polluted several times. It was proved that the guard had been bribed; and soon other revelations showed that this was not the first time the patient, who had received a good education, was in easy circumstances, and belonged to a good family, had performed the act. The trial proved that he had frequently before gained access to the bed of young dead women, and there given himself up to his detestable passion.(*j*)

(*h*) Lawyer's Magazine, London, 1792, vol. ii. p. 351. (*hh*) *Ante*, § 184.
(*i*) Journal of Psychological Med. vol. ii. p. 577.
(*j*) See Renaudin sur les Maladies Mentales, p. 764, Paris, 1854.

(5.) *Pseudonomania*—(Morbid lying propensity.)

§ 202. "There are many instances of persons of sound understandings, and some of uncommon talents," says Dr. Rush, "who are affected with this lying disease in the will. It differs from exculpative, fraudulent, and malicious lying, in being influenced by none of the motives of any of them. Persons thus diseased cannot speak the truth upon any subject, nor tell the same story twice in the same way, nor describe anything as it has happened to other people. Their falsehoods are seldom calculated to injure anybody but themselves, being for the most part of a hyperbolical or boasting nature; but now and then they are of a mischievous nature, and injurious to the characters and property of others. That it is a corporal disease I infer from its sometimes appearing in mad people who are remarkable for veracity in the healthy states of their minds, several instances of which I have known in the Pennsylvania Hospital. Persons affected with this disease are often amiable in their tempers and manners, and sometimes benevolent and charitable in their dispositions. Lying as a vice is said to be incurable. The same thing may be said of it as a disease, when it appears in adult life. It is generally the result of defective education. It is voluntary in childhood, and becomes involuntary, like certain muscular actions, from habit. Its only remedy is bodily pain inflicted by the rod, or confinement, or abstinence from food; for children are incapable of being permanently influenced by appeals to reason, natural affection, gratitude, or even a sense of shame."(*k*)

§ 203. "An inordinate propensity to lying," Dr. Ray tells us, "is also of no common occurrence in society; and most of the readers of this work have probably met with instances of it in people whose morals in other respects were irreproachable, and whose education had not been neglected. The maxim of Jeremy Bentham, that it is easier for men to speak the truth, and therefore they are more inclined to do so than to utter falsehood, seems, in them, to be completely reversed, for they find nothing more difficult than to tell the truth. In repeating a story which they have heard from others, they are sure to embellish it with exaggerations and additions, till it can scarcely be recognized, and are never known to tell the same story twice alike. Not even is the slightest groundwork of truth necessary, in order to call forth the inventions of perverted minds; for they as often flow spontaneously, in the greatest profusion, as when based on some little foundation in fact. This propensity seems to result from an inability to tell the truth, rather than from any other cause; as it can be traced to no adequate motive, and is often indulged when truth would serve the interests of the individual better. Like that last mentioned, it is liable to degenerate into unequivocal mania, of which it is sometimes a preliminary symptom, and is also quite a common feature in this disease—a circumstance which Rush considers as proof of its physical origin."(*l*)

(*k*) Rush on the Mind, pp. 262–264.
(*l*) Ray on Insanity, p. 193.

(6.) *Oikeiomania*—(Morbid state of domestic affections.)

§ 204. Of this, in its general shape, Prichard thus speaks: "There are many individuals living at large, and not entirely separated from society, who are affected in a certain degree by this modification of insanity. They are reputed persons of singular, wayward, and eccentric character. An attentive observer may often recognize something which leads him to entertain doubts of their entire sanity; and circumstances are sometimes discovered, on inquiry, which assist in determining his opinion. In many instances it is found that there is an hereditary tendency to madness in the family, or that several relatives of the person affected have labored under disease of the brain. The individual himself is discovered, in a former period of life, to have sustained an attack of madness of a decided character. His temper and disposition are found, on inquiry, to have undergone a change, to be not what they were previously to a certain time; he has become an altered man; and this difference has perhaps been noted from the period when he sustained some reverse of fortune, which deeply affected him, or since the loss of some beloved relative. In other instances, the alteration in his character has ensued immediately on some severe shock which his bodily constitution has undergone. This has either been a disorder affecting the head, a slight attack of paralysis, a fit of epilepsy, or some fever or inflammatory disorder, which has produced a perceptible change in the habitual state of the constitution. In some cases the alteration in temper and habits has been gradual and imperceptible, and it seems only to have consisted in an exaltation or increase of peculiarities which were always more or less natural and habitual."(*m*)

Very often this domestic perversity is associated with the most complacent benignity out of doors. Zimmerman, whilst he was inculcating and professing the most serene benevolence, was, by his tyranny, driving his son into madness, and making his daughter an outcast from home. Goethe—no inapt observer of human nature—says, "Zimmerman's harshness towards his children was the effect of hypochondria—a sort of madness or moral assassination to which he himself fell a victim after sacrificing his offspring."(*n*)

(*m*) Cited, Ray on Insanity, pp. 168–9.

See Feuchtersleben's views on this point. Principles of Medical Psychology, being the outlines of a Course of Lectures by Baron von Feuchtersleben, M. D., Vienna, 1845. Translated from the German by the late H. Evans Lloyd, Esq. Revised and edited by G. B. Babington, M. D., F. R. S., &c. London: printed for the Sydenham Society, 1847, p. 204.

(*n*) Dean Swift's life furnishes a striking illustration of this species of derangement of the domestic affections. By the indulgence of this very morbid tendency to torture the object of his most cherished love, he first succeeded in crushing under the weight of despair a woman whom he really loved, and then, by the recoil, in subjecting himself to that most miserable of all fates, that of an insane old age. Take, as a scene in the first awful drama, the following narrative by Mr. Sheridan: "A short time before Stella died," says he, "a scene passed between the Dean and her, an account of which I had from my father, and which I shall relate with reluctance, as it seems to bear more hard on Swift's humanity than any other point of his conduct in life. As she found her final dissolution approaching, a few days before it happened, in the presence of Dr. Sheridan, she addressed Swift in the most earnest and pathetic terms to grant her dying request, 'that, as the ceremony of marriage had passed between them, in order to put it out of the power of slander to be busy with her fame after

§ 205. Illustrations of this phase will be found in the following sections. At present it is sufficient to call attention to one feature, which is thus ad-

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death, she adjured him, by their friendship, to let her have the satisfaction of dying, at least—though she had not lived—his acknowledged wife.' Swift made no reply, but, turning on his heel, walked silently out of the room, nor ever saw her afterwards during the few days she lived. This behavior threw her into unspeakable agonies, and for a time she sunk under the weight of so cruel a disappointment."

No wonder was it that, when under the influence of the remorse which was too late awakened, his powerful sensibilities were aroused to the full consciousness of his guilt, he would beat his forehead for night after night, and stride to and fro in his deserted apartment, until at last the only change became that from delirium to melancholy, and from melancholy to delirium. Dr. Winslow gives us the following glimpses of the closing scenes:—

"The most minute account of this melancholy period, founded upon the evidence given by Mrs. Whiteaway, as well as upon the testimony of Mr. Dean Swift and others who witnessed his bad condition, is given by Dr. Delany:—

"'In the beginning of the year 1741 his understanding was so much impaired, and his passions so greatly increased, that he was utterly incapable of conversation. Strangers were not permitted to approach him, and his friends found it necessary to have guardians appointed of his person and estate. Early in the year 1742 his reason was wholly subverted, and his rage became absolute madness. The last person whom he knew was Mrs. Whiteaway, and the sight of her, when he knew her no longer, threw him into fits of rage so violent and dreadful, that she was forced to leave him; and the only act of kindness that remained in her power was to call once or twice at the deanery to inquire after his health, and see that proper care was taken of him. Sometimes she would steal a look at him when his back was towards her, but did not venture into his sight. He would neither eat nor drink when the servants were in the room. His meat, which was served up ready cut, he would sometimes suffer to stand an hour upon the table before he would touch it, and at last he would eat it walking; for during this miserable state of mind it was his constant custom to walk ten hours a day.

"'In October, 1742, after his frenzy had continued several months, his left eye swelled to the size of an egg, and the lid appeared to be so much inflamed and discolored, that the surgeon expected it would mortify; several large boils also broke out on his arms and body. The extreme pain of this tumor kept him waking near a month; and during one week it was with difficulty that five persons could prevent him from tearing out his eyes. Just before the tumor perfectly subsided and the pain left him, he knew Mrs. Whiteaway, took her by the hand, and spoke to her with his former kindness; that day and the following he knew his physician and surgeon, and all his family, and appeared to have so far recovered his understanding and temper, and the surgeon was not without hopes that he might once more enjoy society and be amused with the company of his old friends. This hope, however, was but of short duration; for a few days afterwards he sank into a state of total insensibility, slept much, and could not, without great difficulty, be prevailed on to walk across the room. In this state of hopeless imbecility he is said to have remained silent a whole year. In 1774 he spoke once or twice to his servant, after which he remained perfectly silent until the latter end of October, 1775, when he expired, in the 78th year of his age.'"

Lessons enough, indeed, are taught by scenes such as these. The madman howling in anguish at one moment, and at another sinking into the lethargy of unrelievable despair—the mute but surpassing wretchedness of those broken hearts who were to receive soon such terrible retribution in the fate of him to whom their own misery was due—have a very solemn moral. It is precisely such a moral that in these days we need. We are accustomed to look only at the grosser results with a frown, and to tolerate, with something like complacency, that dalliance with the affections merely which may by any construction be included within the limits of mere intellectual association. *Sentimentalism* has a great deal to answer for in this respect; for it utterly reverses the teachings of nature, treating real affections as if they were shams, and shams as if they were real. On the one hand, as Bulwer admirably illustrates it in Pelham, a China monster is treated as if it were a child; on the other, a child as if it were a China monster. Lady Pelham, in eloping from her husband and child, turns back a moment to pick up from the mantel a favorite and very ugly Chinese figure which she had forgotten, and on her way back is arrested. But, in point of fact, this power of destroying the natural affections is as impossible in many cases as it is unnatural in all. The affections will, after all, often return as tyrants, to lay havoc that domain from which they were driven as exiles. There is a mysterious

mirably sketched by Dr. Mayo: "Marital unkindness is subversive of soundness of mind in the person on whom it is exercised; and exercised it is in a thousand ways in this country, without violence being had recourse to. The state of the law, as Mr. Dickens well observes, and terrifically proves, is unprotective of wives. But the mischief is not unavenged; and here the case of the husband retributively commences. Many men are living in a state of continuous and exhausting remorse, under the consciousness that this system of torture is being carried on by them. For when once the habit is formed, they can neither shake it off, nor bear their self-consciousness under it.

'Culpam pœna premit comes.'

I need not speak of their retrospects, if they should outlive the object of their tyranny."(*o*)

"A very common feature of moral mania," says Dr. Winslow, "is a deep perversion of the social affections, whereby the feelings of kindness and attachment that flow from the relations of father, husband, and child, are replaced

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influence which spirit exerts upon spirit, which, in its moral aspects, is as infinite as in its merely sentimental relations it is ephemeral and unsubstantial. What Dr. Mayo tells us in the passage quoted in the beginning of this article is, alas! a fact but now too well established. There is no insanity so permanent, so wretched, and so incurable, as that which arises from a perversion of the home affections. It is not the victim alone whose mind is destroyed. The perpetrator of the act himself, though it may be he was led into it by mere want of self-control, feels its recoil. When he sees what he has done, he sinks under the revulsion, if not into insanity, which, after all, is the mark of more conscience than the mere trifler can be supposed to possess, if not into remorse, which darkens the rest of his days, at least into a state of chronic frivolity which leads him through a contemptible old age, in which there is not enough of the man left to make the Christian, to a certain and awful judgment.

It is true that these sombre results do not always follow. All temperaments are not equally susceptible. With many, impressions of any kind are so light that they are almost immediately effaced. Alas! however, for those the soil of whose heart is either thus superficial or thus stony; and alas for the system that makes it so! Little prospect, indeed, is there that when the earth has thus been desolated by fire and storm—when its face has been baked and hardened—it will bring forth the fruits of the coming harvest. And little chance is there that in the heart that has been made thin and superficial, by this very system of treating the affections as things that do *not* exist, there will be mould enough to produce either the delicate foliage or the true fruit of refined home affections. Burns' lines, whatever he may have meant, certainly reach to this:—

"I waive the quantum of the sin,
The hazard of concealing,
But oh! it hardens all within,
And petrifies the feeling."

But, in point of fact, the world sometimes fails in its own work. The heart cannot in every case be sublimated into inanition or ossified into insensibility. It is to be recollected that agents which God, in his all-wise purposes, has created for the object of sustaining and keeping in healthy activity the entire social system, which he has made robust enough to supply all the relations of society, and energetic enough to supply its impulses, cannot always be volatilized in the crucible of conventionality in such a way as entirely to evaporate. *Sometimes* the elements so much misunderstood will assert their power. They may in many cases, it is true, be destroyed—alas! for the heart when such is the case—but there will remain instances when they will rise and gather a storm which human art cannot dispel. The perturbed spirit, if not sinking to the grave in very weariness of life—broken-hearted, as the world calls it—will be driven to its account under the Avenger's whip, amid the battle-shouts of passions which might once have been made ANGELS, but have now become FIENDS. Such, indeed, are the sanctions by which JEHOVAH THE JUST vindicates the honor and protects the integrity of His own great purposes for the moral and social government of His people.

(*o*) Mayo on Medical Testimony in Lunacy, pp. 137, 138.

by a perpetual inclination to tease, worry, and embitter the existence of others. The ordinary scene of its manifestations is the patient's own domestic circle, the peace and happiness of which are effectually destroyed by the outbreakings of his ungovernable temper, and even by acts of brutal ferocity. Frederick William of Prussia, father of Frederick the Great, undoubtedly labored under this form of moral mania; and it furnishes a satisfactory explanation of his brutal treatment of his son, and his utter disregard for the feelings or comfort of any other member of his family. About a dozen years before his death, his health gave way under his constant debauches in drunkenness; he became hypochondriacal, and redoubled his usual religious austerities. He forbade his family to talk of any subject but religion, read them daily sermons, and compelled them to sing, punishing with the utmost severity any inattention to these exercises. The prince and his elder sister soon began to attract a proportionate share of his hostility. He obliged them to eat and drink unwholesome or nauseous articles, and even spit in their dishes, addressing them only in the language of invective, and at times endeavoring to strike them with his crutch. About this time he attempted to strangle himself, and would have accomplished his design had not the queen come to his rescue. His brutality towards the prince arrived to such a pitch, that he one morning seized him by the collar as he entered his bed-chamber, and began to beat him with a cane in the most cruel manner, till obliged to desist from pure exhaustion. On another occasion shortly after, he seized his son by the hair, and threw him on the ground, beating him till he was tired, when he dragged him to a window, apparently for the purpose of throwing him out. A servant hearing the cries of the prince, came to his assistance, and delivered him from his hands. Not satisfied with treating him in the most barbarous manner, he connived at the prince's attempts to escape from his tyranny, in order that he might procure from a court-martial a sentence of death; and this even he was anxious to anticipate by endeavoring to run him through the body with a sword. Not succeeding in procuring his death by judicial proceedings, he kept him in confinement, and turned all his thoughts towards converting him to Christianity. At this time, we first find mention of any delusion connected with his son, though it probably existed before. In his correspondence with the chaplain to whom he had intrusted the charge of converting the prince, he speaks of him as one who had committed the most heinous sins against God and the king, as having a hardened heart, and being in the fangs of Satan. Even after he became satisfied with the repentance of the prince, he showed no disposition to relax the severities of his confinement. He was kept in a miserable room, deprived of all the comforts and many of the necessaries of life, denied the use of pens, ink, and paper, and allowed scarcely food enough to prevent starvation. His treatment of the princess was no less barbarous. She was also confined, and every effort used to make her situation thoroughly wretched; and though, after a few years, he relaxed his persecution of his children, the general tenor of his conduct towards his family and others, evinced little improvement in his disorder, till the day of his death."(*p*)

(*p*) Vide Lord Dover's Life of Frederick; Winslow's Anatomy of Suicide, pp. 233, 234, 235.

This species of monomania will invalidate a will made under its immediate influence.(*a*) Unless, however, it be accompanied by some degree of mental disturbance, it will not, in the opinion of the present writer, be a defence to a criminal charge. It is otherwise, however, when accompanied by delusion.(*c*)

The wife of John Wesley was afflicted with this disease. "The worst part of Mrs. Wesley's conduct," says Watson, in his life of Wesley, "and which only the supposition of a degree of insanity, excited by jealousy, can palliate, was that she interpolated several letters, which she had intercepted, so as to make them bear a bad construction; and as Mr. Wesley had always maintained a large correspondence with all classes of persons, and among others with pious females, in some of whose letters there were strong expressions of Christian affection, she availed herself of this means of defaming him. Some of these she read to different persons in private, and especially to Mr. Wesley's opponents and enemies, adding extempore passages in the same tone of voice, but taking care not allow the letters themselves to be read by the auditors; and in one or two instances she published interpolated or forged letters in the public prints. How he conducted himself amidst these vexations, the following passage in a letter from Miss Wesley to a friend, written a little before her death, will show. They are at once important, and explanatory of the kind of annoyance to which this unhappy marriage subjected her uncle, and as containing an anecdote strongly illustrative of his character:—

"I think it was in the year 1775 my uncle promised to take me with him to Canterbury and Dover. About this time Mrs. Wesley had obtained some letters which she used to the most injurious purposes, misinterpreting spiritual expressions, and interpolating words. These she read to some Calvinists, and they were to be sent to the Morning Post. A Calvinist gentleman, who esteemed my father and uncle, came to the former, and told him that for the sake of religion, the publication should be stopped, and Mr. Wesley be allowed to answer for himself. As Mrs. Wesley had read, but did not show the letters to him, he had some doubts of their authenticity; and though they were addressed to Mr. John Wesley, they might be forgeries; at any rate he ought not to leave town at such a juncture, but clear the matter satisfactorily.

"My dear father, to whom the reputation of my uncle was far dearer than his own, immediately saw the importance of refutation, and set off to the Foundery to induce him to postpone his journey, while I, in my own mind, was lamenting such a disappointment, having anticipated it with all the impatience natural to my years. Never shall I forget the manner in which my father accosted my mother on his return home. 'My brother,' says he, 'is indeed an extraordinary man. I placed before him the importance of the character of a minister; the evil consequences which might result from his indifference to it; the cause of religion; stumbling-blocks cast in the way of the weak; and urged him by every relative and public motive to answer for himself, and stop the publication. His reply was, Brother, when I devoted to God my ease, my time, my life, did I except my reputation? No. Tell Sally I will take her to Canterbury to-morrow.'"

(*a*) *Ante*, § 14.

(*c*) *Ante*, § 51.

"I ought to add, that the letters in question were satisfactorily proven to be mutilated, and no scandal resulted from his trust in God.

"Some of these letters, mutilated, interpolated, or forged by this unhappy woman, have got into different hands and are still preserved. In the papers of the Wesley family, recently collected, there are, however, sufficient materials for full explanation of the whole case in detail; but as Mr. Wesley himself spared it, no one will, I presume, ever farther disturb this unpleasant affair, unless some publication on the part of an enemy, for the sake of gain, or to gratify a party feeling, should render it necessary to defend the character of this holy and unsuspecting man."(*d*)

(*d*) The following is the inscription on a monument erected in Horsley Down church, in Cumberland, England:—

Here lie the bodies of
Thomas Bond and Mary his wife.
She was temperate, chaste, and charitable.
But
She was proud, peevish, and passionate.
She was an affectionate wife, and a tender mother.
But
Her husband and child whom she loved, seldom saw her countenance without a disgusting frown,
Whilst she received visitors whom she despised, with an endearing smile.
Her behavior was discreet towards strangers,
But
Imprudent in her family.
Abroad her conduct was influenced by good breeding,
But
At home by ill temper.
She was a professed enemy to flattery, and was seldom known to praise or commend;
But
The talents in which she principally excelled
Were difference of opinion, and discovering flaws and
Imperfections.
She was an admirable economist,
And, without prodigality,
Dispensed plenty to every person in her family,
But
Would sacrifice their eyes to a farthing candle.
She sometimes made her husband
Happy with her good qualities,
But
Much more frequently miserable with her
Many failings.
Insomuch that in thirty years' cohabitation,
He often lamented that,
Maugre all her virtues,
He had not on the whole enjoyed two years
Of matrimonial comfort.
At length
Finding she had lost the affection of her husband, as well as the regard of her neighbors, family disputes having been divulged by servants,
She died of vexation, July 20, 1768,
Aged 48 years.
Her wornout husband survived her four months and two days, and departed this life
November 28, 1768,
In the 54 year of his age.
William Bond, brother to the deceased,
Erected this stone as a
Weekly monitor to the wives of this parish,
That they may avoid the infamy of having
Their memories handed down to posterity
With a patchwork character.

(7.) *Suicidal Mania*—(Morbid propensity to self-destruction.)

§ 206. "The most striking peculiarity of melancholia," says Abercrombie, "is the prevailing propensity to suicide; and there are facts connected with this subject which remarkably illustrate what may be called the philosophy of insanity. When the melancholic hallucination has fully taken possession of the mind, it becomes the sole object of attention, without the power of varying the impression, or of directing the thoughts to any facts or considerations calculated to remove or palliate it. The evil seems overwhelming and irremediable; admitting neither of palliation, consolation, or hope. For the process of mind calculated to diminish such an impression, or even to produce the hope of a palliation of the evil, is precisely that exercise of mind which, in this singular condition, is lost or suspended, namely, a power of changing the subject of thought, of transferring the attention to other facts and considerations, and of comparing the mental impression with these, and with the actual state of external things. Under such a conviction of overwhelming and hopeless misery, the feeling naturally rises, of life being a burden, and this is succeeded by a determination to quit it. When such an association has once been formed, it also fixes itself upon the mind, and fails to be corrected by those considerations which ought to remove it. That it is in this manner the impression arises, and not from any process analogous to the determination of a sound mind, appears, among other circumstances, from the singular manner in which it is often dissipated; namely, by the accidental production of some new impression, not calculated, in any degree, to influence the subject of thought, but simply to give a momentary direction of the mind to some other feeling. Thus a man, mentioned by Pinel, had left his house in the night, with the determined resolution of drowning himself, when he was attacked by robbers. He did his best to escape from them, and having done so, returned home, the resolution of suicide being entirely dissipated. A woman, mentioned, I believe, by Dr. Burrows, had her resolution changed in the same manner, by something falling on her head after she had gone out for a similar purpose."

§ 207. "A very singular modification occurs in some of these cases. With the earnest desire of death, there is combined an impression of the criminality of suicide; but this, instead of correcting the hallucination, only leads to another and most extraordinary mode of effecting the purpose; namely, by committing murder, and so dying by the hand of justice. Several instances are on record in which this remarkable mental process was distinctly traced and avowed; and in which there was no mixture of malice against the individuals who were murdered. On the contrary, they were generally children; and in one of the cases, the maniac distinctly avowed his resolution to commit murder, with the view of dying by a sentence of the law, and at the same time, his determination that his victim should be a child, as he should thus avoid the additional guilt of sending a person out of the world in a state of unrepented sin. The mental process in such a case presents a most interesting subject of reflection. It appears to be purely a process of association, without the power of reasoning. I should suppose that there had been at a former

period, during a comparatively healthy state of the mental faculties, a repeated contemplation of suicide, which had always been checked by an immediate conviction of its dreadful criminality. In this manner, a strong connection had been formed, which, when the idea of suicide afterward came into the mind during a state of insanity, led to the impression of its heinousness, not by a process of reasoning, but by simple association. The subsequent steps are the distorted reasonings of insanity, mixed with some previous impression of the safe condition of children dying in infancy. This explanation, I think, is strongly countenanced by the consideration, that had the idea of the criminality of suicide been in any degree a process of reasoning, a corresponding conviction of the guilt of murder must have followed it. I find, however, one case which is at variance with this hypothesis. The reasoning of that unfortunate individual was, that if he committed murder and died by the hand of justice, there would be time for making his peace with the Almighty, between the crime and his execution, which would not be the case if he should die by suicide. This was a species of reasoning—but it was purely the reasoning of insanity."(*q*)

(*q*) Dr. Winslow, in his interesting work on Suicide, gives us the following remarkable cases: "The case now about to be recorded, presents some peculiarly interesting features. An English lady, moving in the first circles of society, went in company with her friends to the opera at Paris. In the next box sat a gentleman who appeared, from the notice he took of the lady, to be enamored of her. The lady expressed herself annoyed at the observation which she had attracted, and moved to another part of the box. The gentleman followed the carriage home, and insisted upon addressing the lady, declaring that he had had the pleasure of meeting her elsewhere, and that one minute's conversation would convince her of the fact, and do away with the unfavorable impression which his apparent rudeness might have made upon her mind. As his request did not appear at the moment unreasonable, she consented to see him a minute by himself. In that short space of time he made a fervent declaration of his affection; acknowledged that desperation had compelled him to have recourse to a *ruse* to obtain an interview, and that, unless she looked favorably on his pretensions, he would kill her, and then himself. The lady expressed her indignation at the deceit he had practised, and said, with considerable firmness, that he must quit the house. He did so, retired to his home, and with a lancet opened a vein in his arm. He collected a portion of blood in a cup, and with it wrote a note to the lady, telling her that his blood was flowing fast from his body, and it should continue to flow until she consented to listen to his proposals. The lady, on receipt of the note, sent her servant to see the gentleman, and found him, as he represented, actually bleeding to death. On the entreaty of the lady, the arm was bound up and his life saved. On writing to the lady, under the impression that she would now accept his addresses, he was amazed on receiving a cool refusal, and a request that he would not trouble her with any more letters. Again driven to desperation, he resolved effectually to kill himself. He accordingly loaded a pistol, and directed his steps towards the residence of his fair amorosa, when, knocking at the door, he gained admission, and immediately blew out his brains. The intelligence was communicated to the lady, she became dreadfully excited, and a severe attack of nervous fever followed. When the acute symptoms subsided, her mind was completely deranged. Her insanity took a peculiar turn. She fancied she heard a voice commanding her to commit suicide, and yet she appeared to be possessed of sufficient reason to know that she was desirous of doing what she ought to be restrained from accomplishing. Every now and then she would exclaim, 'Take away the pistol! I won't hang myself! I won't take poison!' Under the impression that she would kill herself, she was carefully watched; but notwithstanding the vigilance which was exercised, she had sufficient cunning to conceal a knife, with which, during the temporary absence of the attendant, she stabbed herself in the abdomen, and died in a few hours. It appears that the idea that she had caused the death of another, and that she had it in her power to save his life by complying with his wishes, produced the derangement of mind under which she was laboring at the time of her death; and yet she did not manifest, and it was evident to everybody that she had not, the slightest affection for

§ 208. As to whether the representatives of a suicide can recover against life insurers, on policies containing the usual provisos against *felo de se*, there has been great vacillation of judicial authority. The first English case in which the question was mooted was one decided in 1843, in the C. B., and was an action brought by the executor of the insured, upon a policy containing a proviso, that in case the assured should die by his own hands, the policy should be void. The jury found that the deceased "*voluntarily* threw himself into the water, *knowing* at the time that he should thereby destroy his life, and intending to do so; but at the time of committing the act he was not capable of judging between right and wrong." A majority of the court (Tindal, C. J., dissenting) held that under the finding there could be no recovery.(*qq*)

Shortly after this came an action on a policy which contained a proviso avoiding it if the assured should "commit suicide." The evidence was that the deceased died from the effects of sulphuric acid, taken when he was of unsound mind. Creswell, J., at Nisi Prius, told the jury that to bring the case within the exception, it must appear that the deceased, at the time he "committed suicide," was a "responsible being," capable of doing any act voluntarily. The jury found for the plaintiff.(*r*) Subsequently, however, the Court of Exchequer, by a vote of four to two, ordered a new trial, on the ground that the plaintiff was not, in law, entitled to recover.(*rr*)

In 1853, however, on an action on a policy which was to be void if the assured should "die by his own hand," the New York Court of Appeals held that where the pleadings exhibited the mere facts that the deceased died from "suicide by drowning himself, and so died by his own hand," but that at the time "he was of unsound mind, and wholly unconscious of the act," the

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the gentleman who professed so much to admire her. Possessing, naturally, a sensitive mind, it was easily excited. The peculiar circumstances connected with her mental derangement were sufficient to account for the delusions under which she labored." (Winslow's Anatomy of Suicide, pp. 59, 60, 61.)

"A young lady of considerable beauty was accosted in the street by a strange gentleman. She took no notice at first of the unwarrantable liberty; but on finding that he persisted in following her, she attempted, by quickening her pace, to escape. Being extremely timid, and having naturally a nervous temperament, she was much excited. The person in the garb of a gentleman followed her for nearly a mile, and when he saw that she was home, he suddenly turned down a street and disappeared. The young lady expressed herself extremely ill soon after she entered the house. A physician was sent for, who declared his astonishment at her severe illness, from a cause so trifling. During the following night she manifested indications of mental derangement, with a disposition to commit suicide. A strait-waistcoat was procured, and all apprehension of her succeeding in gratifying the propensity of self-destruction was removed. Some weeks elapsed before she recovered. To all appearance she was perfectly well. She had no recollection of what had transpired, and expressed herself amazed when she was told that she wished to kill herself. Two months after she left her bed, she was missed. Search was made in every direction, but in vain. After a lapse of two days, she was discovered floating in a pond of water several miles from her home. In her pocket was discovered a piece of paper, on which were written the following lines: 'Oh, the misery and wretchedness I have experienced for the last month, no one but myself can tell. A demon haunts me—life is insupportable. A voice tells me that I am destined to fall by my own hands. I leave this world for another, where I hope to enjoy more happiness. Adieu.'" (Winslow's Anatomy of Suicide, pp. 75, 76. See a very interesting essay on the last sentiments of suicides, by Dr. A. Brierre de Boismont, translated in the Journal of Psychological Medicine, vol. iv. p. 243.)

(*qq*) Borradale *v.* Hunter, 5 Man. & Gr. 639.

(*r*) Schwabt *v.* Clift, 2 Car. & Kir. 134.

(*rr*) Clift *v.* Schwabt, 3 Man. & Gr. 437.

insurers were responsible.(*s*) It was very justly said by Willard, J., that "it must occur to every prudent man, seeking to make provision for his family by an insurance on his life, that insanity is one of the diseases which may terminate his being. It is said the defendants did not insure the continuance of the intestate's reason. Nor did they, in terms, insure him against smallpox or scarlet fever; but had he died of either disease, no doubt that the defendants would have been liable. They insured the continuance of his life. What difference can it make to them, or to him, whether it is terminated by the ordinary course of the disease in his bed, or whether, in a fit of delirium, he ends it himself? In each case the death is occasioned by a means within the meaning of the policy, if the exception contemplates, as I think it does, the destruction of life by the intestate while a rational agent, responsible for his act. It is competent, no doubt, for the insurer so to frame his policy as to exclude him from liability for a death occasioned in a fit of insanity. The parties have not done so in the present case." It is worthy of observation, however, that the force of this authority, like that of its predecessor, is broken by its having been decided by a divided court.(*ss*)

(8.) *Fanatico-Mania.*

(*a.*) Supernatural or pseudo-supernatural demoniacal possession.
- a^1. *A priori* improbability of such possession. § 209.
- b^1. Solvability of the instances of such possession by natural tests.
  - a^2. Disease. § 210.
  - b^2. Morbid imitative sympathy. § 211.
  - c^2. Legerdemain and fraud. § 212.
  - d^2. Mistake of senses. § 213.
  - e^2. Guesswork. § 214.
  - f^2. Natural phenomena at present inexplicable. § 215.
- c^1. Historical evidence of such possession. § 216.

(*b.*) Religious insanity.
- a^1. Christianity, taken in its practical sense, has no tendency to produce insanity. § 217.
- b^1. What is called religious insanity is produced—
  - a^2. By a departure from practical Christianity.
    - a^3. Reliance on frames and emotions. § 218.
    - b^3. Appeal to unscriptural supernaturalism. § 219.
    - c^3. Appeal to the selfish element. § 219, (*a*).
  - b^2. By constitutional idiosyncrasies. § 219, (*b*).

(*c.*) Fanatico-mania as a defence. § 219, (*c*).

§ 209. a^1. *A priori improbability of supernatural possession.*—There are periods in the development of society when we may naturally expect supernatural and miraculous communications. When a new economy is to be

(*s*) Breasted *v.* Farmers' Loan Co., 2 Am. Law Reg. 358.

(*ss*) See Law Times, July 18, 1846, p. 342; Taylor's Med. Jurisprudence, pp. 592, 593. On the subject of verdicts of *felo de se*, see a very interesting article in the Journ. of Psychol. Med. vol. iii. p. 19.

announced, it is by miracles that we may look to see it authenticated. When that economy is inaugurated, we may look for a government by law. This position may be illustrated as follows:—

There stands in the hall of an old-fashioned country-seat an eight-day clock. When the proper day has come, the master of the house opens the clock-door, and the creaking of the reluctant wheels is heard as the machinery takes a new start. The children of the family collect around him, and, careless of its intermediate movements, connect each future tick with the impulse received from their father's hand. On the other hand, innumerable ephemeral insects crowd the mahogany case. Their life runs not over sunset, and the memory of none with whom they converse goes back further than a day. "You say that this motion had a beginning," we may imagine a sceptic among them to say; "why, the clock is self-moving, and governed by fixed, immutable laws." On the other hand, those whose observation goes only to the epochs when the master-hand intervened, see in each beat only the original impulse. Both are in the right. The clock moves intermediately under second causes, but the machinery of which these causes consist is, from time to time, put in motion by an extrinsic power. And so it is in the world. The rocks unite with the scriptural record in bearing witness to certain grand windings up of the cosmical machinery. Human observation, however, is confined to a mere parenthesis between two of these interpositions. And in this parenthesis we have, to the outer eye, in things objective, nothing before us but the regular march of second causes.

Now, there is, *a priori*, a reason for all this. Were the world to be governed by direct miraculous interpositions alone, there would be no room for probation. Were it to be governed by second causes alone—in other words, were we to lose now the proof we have from geology and Scriptures of prior miraculous interventions—there would be no authentication of a revelation. For miracles are the sign-manual of the Omnipotent himself, by which, in the sight of creation, He attests His presence. What we object to in the naturalists, therefore, is, that by rejecting miracles they destroy the authentication of revelation. What we object to in the supernaturalists is, that by treating modern supernaturalism as miraculous they destroy faith in any revelation at all.

With Christianity authoritative miraculous communications ceased. Holy Scriptures were given as containing all things necessary to salvation, and a woe was denounced on any one who should add to the volume of the book. The existence of a constant economy of progressive miraculous revelation, developing itself from moment to moment by new formulas and doctrines, is inconsistent not only with the analogy of God's dealing in other respects, but is in opposition to the written word.

Then as to the alleged supernatural powers of Satan.(*a*) Now the existence of Satan as a *tempter* is not denied; all that we deny is his absolute power as a *coercer*. The law of the land unites with Scripture in affirming the existence of such a tempter. "Moved and seduced by the instigation of the

(*a*) On this point, see Whately's Good and Evil Angels, Lecture IV.

devil," is the allegation which the prosecution makes in every indictment for a heinous crime. "I was coerced to do so by supernatural agency," is a defence, which, unless there be proof of insanity *aliunde*, is never tolerated. This is one of the points in which the common law has adopted the divine word as part of itself. Scripture tells us of a spiritual enemy who goes about seeking whom he may devour, but it appeals to us as moral agents, capable of repelling him—it tells us that if we resist him, he will flee—and it points us as a model to ONE from whom the tempter shrank away. "The Creator has endowed him (the evil spirit) with no active power over us; he cannot operate upon us except through the medium of our own will; but persons are often better pleased to throw the blame of that which is evil in their hearts upon the influence of Satan, than upon their own indulgence of sinful compassion, and corrupt propensity; as if the facility with which they fall into the snare of the devil, and were taken captive by him, did not equally prove that permanent tendency to wrong which showed that the heart was deceitful and desperately wicked. What is commonly called (and very frequently is) temptation, is often ascribed to this especial agency, when it really consisted in the aptitude of the mind for certain evil modes of action, which are embraced when presented to it, because there exists a corresponding feeling, a principle from within, harmoniously continuing with every outward action of a similar character."(*b*)

§ 210. b^1. *Solvability of this evidence by natural tests.*

a^2. *Disease.*—The brain, independently of its positive functions, is the centre of nervous sympathy, and "is intimately connected with many other viscera, whose functions cannot be carried on without the assistance derived from this organ, and whose infinitely varied disturbances are all propagated by a reflex action to this common centre." Among the organs by which the brain is thus influenced, the stomach may be particularly mentioned. Observe, as an illustration of this, the way in which tea, coffee, alcohol, and opium, act on the brain. Headaches, hypochondriasis, melancholy, here find their origin.(*c*) Take the ordinary case of hallucination, in which a ghost is seen, or a prophecy heard. Here a morbid state of the stomach, induced, perhaps, by stimulants, perhaps by indigestion, is the direct cause of the phantasm of cases such as these. Dr. Ferrier thus speaks: "It is well known that in certain diseases of the brain, such as delirium and insanity, spectral illusions take place even during the space of many days. But it has not been generally observed that a partial affection of the brain may exist, which renders the patient liable to such imaginary impressions, either of sight or sound, without disordering his judgment or memory. From this peculiar condition of the sensorium, I conceive that the best-supported stories of apparitions may be completely accounted for."

"When the brain is partially irritated, the patient fancies that he sees spiders crawling over his bedclothes or person, or beholds them covering the walls of his room. If the disease increases, he imagines that persons who are dead or absent, flit around his bed; that animals crowd into his apartment,

(*b*) See a series of very interesting and judicious articles on Superstition in vol. 29 of London Christian Observer.

(*c*) See *ante*, §§ 81–83.

and that all these apparitions speak to him. These impressions take place even while he is convinced of their fallacy. All this occurs sometimes without any degree of delirium."

This topic, in its psychological relations, has been more fully considered under a previous head.(*d*)

§ 211. *b*³. *Morbid imitative sympathy.*—Emotions which would not affect us when alone, become overpowering when striking us in connection with others. Hysterical symptoms, when not promptly repressed in times of general religious interest, may in this way become epidemic. Dr. Davidson, in his history of the Presbyterian Church in Kentucky, gives us instances of this. Speaking of a period of wild excitement in East Tennessee, in which these manifestations were very injudiciously encouraged, he tells us that "the subject was instantaneously seized with spasms or convulsions in every muscle, nerve, and tendon. His head was jerked or thrown from side to side with such rapidity that it was impossible to distinguish his visage, and the most lively fears were entertained lest he should dislocate his neck, or dash out his brains. His body partook of the same impulse, and was hurried on by like jerks over every obstacle—fallen trunks of trees, or, in a church, over pews and benches, apparently to the most imminent danger of being bruised and mangled. It was useless to attempt to hold or restrain him, and the paroxysm was permitted gradually to exhaust itself. An additional motive for leaving him to himself was the superstitious notion that all attempt at restraint was resisting the Spirit of God."

Most of the supposed cases of supernatural possession fall under this head. Take, in addition to the above, the following, which occurred in Kentucky in the movements of 1810–15. A man who was undoubtedly deranged, and who had in early life been a bold and enthusiastic hunter in the wilderness of which Western Kentucky was composed, became deeply impressed with a religious enthusiasm which exhibited itself in the same way that all his other impulses exhibited themselves—through the mechanism of the hunting mania. He became a sort of fanatical Der Freyschutz. In order to resist the devil and make him flee, he contended that it was necessary to tree him, and to give him chase, just as we would a wolf whom we found prowling among our sheep. As the meetings he convoked were held in a grove, one of the congregation suddenly started in pursuit of the devil, an exercise in which a number of others equally excitable, immediately joined. This was called the "*running exercise*," and became the first stage in the series of movements by which the meetings were afterwards made memorable. Climbing a tree after the devil was the next movement, which was called the "*climbing exercise.*" In the ecstasy of the moment, one individual was seized with a propensity to bark, a movement to which the rest were irresistibly impelled, though they used every effort to check the propensity. This exercise, which was called "*treeing the devil*," was accompanied with such a scene of barking and jumping as to destroy any former little appearance of reason. The epidemic spread to other fields than that of demon-hunting. On one occasion one individual was seized with an insane

(*d*) *Ante*, § 83.

propensity to play marbles during divine service, when others involuntarily joined him. And so far did the mania extend, that a series of other juvenile games were introduced and followed with the same irresistible vehemence by the congregation. Absurd as this may appear, the epidemic lasted for some months, and its history has now passed into the records of our Western States as part of the materials on which the annals of Western immigration will rest.

We, therefore, are not speaking without support from analogy and from direct observation, when we say that while the theory of Satanic or supernatural compulsion is without warrant, either in fact or principle, the facts on which the authenticated cases of spiritualism rest, so far as they can be reduced to a system, may be reconciled with the ordinary phenomena which regulate the influence of man upon man, as well as with that feature in the Divine policy which places on the faculties of perception the barriers of time, space, and sense.

In connection with this, let us observe the recognized effect of a mania of the *imitative* powers, as exhibited in the *tarantula* of Apulia, and the exercises of the Jumpers of Cornwall and the *convulsionnaires* of the Parisian miracles.

"In 1556," says Dr. Kellogg, "a number of children, brought up in the city of Amsterdam—girls as well as boys—to the number of sixty or seventy, were attacked with an extraordinary disease. They climbed like cats on the walls and roofs. Their aspect was alarming, they spoke foreign languages, said wonderful things, and even gave an account of all that was passing in the municipal council. They ran in groups of ten or twelve through the public squares, went to the rector, and reproached him with his most secret actions. It is also asserted that they discovered several plots against the Protestants; and the faculty of prophesying, foretelling the future, and speaking in foreign languages, appeared really to exist in this epidemic."

"With our present amount of knowledge," says Dr. Winslow, speaking of imitative or epidemic suicide, "of the subtle principle of contagion, it is difficult to say whether an effluvium may not be generated in such cases, which, under certain conditions of the system, may communicate disease. We cannot possibly say that such is not the case," says he, "though we are by no means willing to admit that the disposition to suicide may be propagated by contagion—using the term in its usual acceptation."

"A man once hung himself, on one of the doors of the corridor at the *Hôtel des Invalides*. For two years previous no suicide had occurred, but in the succeeding fortnight *five* invalids hung themselves on the same cross-bar, and the passage had to be closed. In one of the Berlin hospitals, some fifty years since, a young woman, of robust frame, visited one of the patients. On entering the ward, she fell down in strong convulsions. Six female patients who saw her, became at once convulsed in the same way, and, by degrees, *eight* others passed into the same condition for four months, during which time four nurses followed their example. They were all between sixteen and twenty-five years of age. Some years since, in one of our popular boarding-schools for young ladies, a pupil became affected by chorea. Her contortions being per-

ceived by the school, this case was soon followed by another, and still another, until the disease became regularly epidemic. A judicious physician being called in, proposed that cauterization by a red-hot iron should be applied to the next case which occurred: this prescription becoming generally known through the school, no more cases occurred. In the olden time, the ladies of Miletus, in a fit of melancholy for the absence of their husbands and lovers, resolved to hang themselves, and, as in all fashionable amusements, vied with each other in the alacrity with which they carried on their work of self-destruction. Sydenham informs us that at Mansfield, in the month of June, suicide prevailed to an alarming degree, from causes wholly unknown. The same thing happened at Rouen, in 1806, at Stuttgart, in 1811, and at a village of St. Pierre Montjean, in the year 1813. One of the most marked suicidal epidemics was that which prevailed at Versailles, in the year 1793: in one year the number of suicides was thirteen hundred—a number entirely out of proportion to the population."

A suicidal epidemic prevailed at the New York State Lunatic Asylum, in July, 1851, and is alluded to by Dr. Benedict in his report for that year. "Out of four hundred and sixteen patients, at that time in the institution, the suicidal propensity existed in sixty-six. The first successful attempt was made on the 12th of July, by a female of the most intelligent class. Her melancholy end became known to her companions, with whom she was a favorite, and on the following day two others in the same hall were overheard devising a plan for their own death. The large number of forty-four patients were admitted during the month of July, nineteen of whom were suicidal. Two patients, who had long been in the house, and never manifested suicidal propensities, attempted it during this month, *though they had no knowledge of what had occurred in another part of the building.*"(e)

§ 212. c^2. *Legerdemain and fraud.*—Dr. Monsey, who was the medical adviser of Garrick, was called upon to pay a professional visit to that great actor. "Garrick," as his biographer, Taylor, tells us, "was announced for King Lear on that night, and when Monsey saw him in bed he expressed his surprise, and asked him if the play was to be changed. Garrick was dressed, but had his nightcap on, and the quilt was drawn over him to give him the appearance of being too ill to rise. Dr. M. expressed his surprise, as it was time for Garrick to be at the theatre to dress for King Lear. Garrick, in a languid and whining tone, told him that he was too much indisposed to perform himself, but that there was an actor named Marr, so like him in figure, face, and voice, and so admirable a mimic, that he had ventured to trust the part to him, and was sure that the audience would not perceive the difference. Pretending that he began to feel worse, he requested Monsey to leave the room in order that he might get a little sleep, but desired him to attend the theatre and let him know the result. As soon as the doctor quitted the room, Garrick jumped out of bed and hastened to the theatre. Monsey attended the performance. Having left Garrick in bed, he was bewildered by the scene before him, sometimes doubting, and sometimes being astonished at the resem-

(e) Kellogg on Reciprocal Influence of Mind and Body.

blance between Garrick and Marr. At length finding that the audience were convinced of Garrick's identity, Monsey began to suspect a trick had been practised upon him, and instantly hurried to Garrick's house at the end of the play; but Garrick was too quick for him, and was found by Monsey in the same state of illness."

A writer in the *London Christian Observer*, for 1812, tells us that in the middle of the last century, a small club of convivial personages was assembled at supper in Manchester. A chair at the bottom of the table was left empty by the absence of a member, who was known to be at the time confined upon a dying-bed. The waiters had quitted the room, and the members were speaking of their dying friend, when on a sudden the door opened, and his apparition, as was supposed, entered, shrouded in white, and pale and ghastly as an inhabitant of the tomb. It stalked to the unoccupied chair, sat down, looked around upon the company, rose again, and with slow and solemn step quitted the room. Overcome with awe, ill-prepared by their habits of life to resist the terrors of superstition, no one followed him. When all was over, however, they sent to the house of the sick man, and learned from the nurse that he had died a few minutes *before* they had seen his apparition. Could a ghost-story be more strongly authenticated; and could it be wondered at that this club should be dissolved, and that each member should thenceforward remain a firm believer in spectral appearances? Thus matters continued for nearly ten years; when the nurse, on her dying-bed, confessed to the clergyman of the parish, that her fear of discredit for an act of negligence had led to this misapprehension of the facts of the case. She confessed that while the dying man was in a paroxysm of fever, she had quitted his chamber; that on her return, a few minutes after, she found that, with the strength not unusually attendant upon the last moments of life, he had fled; but that after a few minutes he returned with his sheet wrapped around him, lay down in his bed and died. The fact seems to have been, that, by force of custom, he had thought of his club at the appointed day and hour, had crossed the street to the club-door, which joined the street, and thus terrified the society.

Take also the following, given in the same journal. It was the object, some fifty odd years ago, of a certain party in the kingdom of Prussia, to separate the successor of Frederick the Great of Prussia from the interests of that wary and ambitious prince. Weary of the wars in which he engaged the country, these persons were desirous of robbing him not merely of his throne, but of his life. It chanced, however, that the young prince was not to be seduced, except by a peculiar process, to any such nefarious attempt. He was neither ambitious nor sanguinary; and, unless when stimulated by peculiar feelings, was of a cold and phlegmatic temperament. When once, however, those feelings were roused, his ardor became very great. He was superstitious, credulous, and sensual. On these yielding points of his nature, then, the conspirators resolved to practise. Accordingly, jugglers of all sorts were set to work, and among others, an infamous fellow of the name of Gustfragog. The "Ghost Seer" of Schiller gives a pretty accurate picture of one of the scenes exhibited to the prince, and by which even a firmer mind than his might have been deeply affected. It is unnecessary to state the political

result of the plan. It is more to our present purpose to add, that the success of this man assisted to diffuse a taste for necromancy over the nation. "Tricks," is the summary of this by the writer in the *Christian Observer*, "were devised and executed, which serve to illustrate and confirm the opinion, that in all ages, much of what has been referred to spectral appearances has far more connection with the living than the dead. Gustfragog, in the presence of the narrator above mentioned, produced the shades of the dead, invisible music, called out voices from the dead walls, in short, made matter loquacious, music philosophical, at his pleasure."

So also of a well-known and painful narration told by the late Washington Allston. A student at Cambridge dressed himself up in white as a ghost to frighten his companion, having first drawn the bullets from pistols which he kept at the head of his bed. As the apparition glided by his bed, the youth laughed and cried out; "Vanish, I fear you not." The ghost did not obey him, and at length he reached a pistol and fired it, when, seeing the ghost immovable, and invulnerable as he supposed, a belief in a spirit instantly came over his mind, and convulsions succeeding, his extreme terror was soon followed by death.

Predictions, accompanied by ghostly horrors such as this, often bring about their own fulfilment. Dr. Rush told a story of a farmer, near Philadelphia, who took the yellow fever upon hearing from a party of medical students, who wanted to play a practical joke upon him, that he displayed the premonitory symptoms of that disease. Suppose the communications had been made to him under the mask of a simulated apparition, and suppose the imposition had remained undetected, would we not have had a ghost story equal in authentication to the strongest which modern supernaturalism can present?

§ 213. d^2. *Mistake of Senses.*—Mr. Dendy, in his Philosophy of Mystery, tells us that a few days after the death of Marshal Ney, a servant, ushering the Mareschal Ainé into a Parisian soirée, announced by mistake Mons. Le Mareschal Ney. Instantaneously, says the narrator, the form of the Prince of Moskeva was before his eye.

Now here was an apparition produced by mental association. No one accustomed to the examination of testimony in courts of justice, but will recollect many similar cases.(*f*)

Visual mistakes find their place here. Thus Lord Nelson's sailors conjured up the bloated corpse of the murdered Prince Caraccioli, as it floated erect towards their ship, as a ghost fraught with supernatural warning.

A lady was some years back attending a sick husband in a little town on the Hudson River. The windows of the room they occupied looked directly down on the graveyard. Towards midnight, on Saturday, the disease of the sick man approached a crisis, and his wife was earnestly praying for his recovery. Suddenly she saw in the graveyard a spectral figure in white robes, apparently waving its arms to her as if with a gesture of assent. She called to it the attention of the nurse, who fainted. It seemed as if the sick man at once began to recover, but the wife was too much overawed to be

(*f*) See *ante*, §§ 14–15; *post*, § 245.

willing to remain in a neighborhood open to such apparitions. She was about to remove, when the difficulty was solved by the following account given to her by her washerwoman: "I am obliged to move also, for I have no place to dry my clothes. Last week we were forced to hang them in the churchyard, and then I forgot them, and had to run in towards midnight to catch them up in my arms, so as to keep them from being seen on Sunday morning."

Mr. Dendy tells us of a farmer of Teviotdale, who in the gloom of evening saw on the wall of a cemetery a pale form throwing about her arms and moving and chattering to the moon. With not a little terror, he spurred his horse, but as he passed the phantom it dropped from its perch, and fixing itself on the croup, clasped him tightly round the waist. He arrived at home; with a thrill of horror exclaimed, "Tak aff the ghaist!" and was carried shivering to bed. And what was the phantom? A maniac widow on her distracted pilgrimage to the grave of her husband, for whom she had mistaken the ill-fated farmer.

The supernatural scenery which once surrounded Lake Superior, may fall under this head. Spectre ships, propelled by giant sailors, were seen on its shores. Bluffs, almost mountain high, lifted their brows covered with trees of mammoth height. But the ships were Indian canoes, and the bluffs low ridges of sand covered with scrubby pines. The exaggerated size was produced by a peculiar refractive power of the atmosphere.

Observe, also, the solution of the Giant of the Brocken, as given by M. Haue.

"After having been here for the thirtieth time, and, besides other objects of my attention, having procured information respecting the above-mentioned atmospheric phenomenon, I was at length so fortunate as to have the pleasure of seeing it; and perhaps my description may afford satisfaction to others who visit Broken through curiosity. The sun rose about four o'clock, and the atmosphere being quite serene towards the east, his rays could pass without any obstruction over the Heinrichshöhe. In the southwest, however, towards the Achtermannshöhe, a brisk west wind carried before it their transparent vapors, which were not yet condensed into thick, heavy clouds. About a quarter past four I went towards the inn, and looked around to see if the atmosphere would permit me to have a free prospect to the southwest; when I observed, at a very great distance towards the Achtermannshöhe, a human figure of a monstrous size. A violent gust of wind having almost carried away my hat, I clapped my hand to it, by moving my arm towards my head, and the colossal figure did the same. The pleasure I felt on this discovery can hardly be described; for I had already walked many a weary step in the hope of seeing this shadowy image, without being able to satisfy my curiosity. I immediately made another movement by bending my body, and the colossal figure before me repeated it. I was desirous of doing the same thing once more, but my colossus had vanished. I remained in the same position, waiting to see whether it would return, and in a few minutes it again made its appearance in the Achtermannshöhe. I paid my respects to it a second time, and it did the same to me. I then called the landlord of the Brocken; and having both taken the same position which I had taken alone, we looked towards the

Achtermannshöhe, but saw nothing. We had not, however, stood long when two such colossal figures were formed over the above eminence, which repeated our compliments by bending their bodies as we did; after which they vanished. We retained our position, kept our eyes fixed upon the same spot, and in a little while the two figures again stood before us. Every movement that we made by bending our bodies these figures imitated, but with this difference, that the phenomenon was sometimes weak and faint, sometimes strong and well defined. Having thus had an opportunity of discovering the whole secret of this phenomenon, I can give the following information to such of my readers as may be desirous of seeing it themselves. When the rising sun throws his rays over the Brocken upon the body of a man standing opposite to fine light clouds floating around or hovering past him, he needs only fix his eye steadfastly upon them, and in all probability he will see the singular spectacle of his own shadow extending to the length of five or six hundred feet, at the distance of about two miles from him. This is one of the most agreeable phenomena I ever had an opportunity of remarking on the great observations of Germany."

A throng of persons collecting at a given spot, and gazing intently at any specific object, will readily be affected by a delusion concerning it. Mr. Dendy tells us that some time since a very large assemblage was watching with intense interest the stone lion of the Percies at Northumberland House. They were unanimous in the conviction that he was swinging his tail to and fro; a false impression, of course, which had gradually accumulated from this solitary exclamation of a passenger: "By heaven, he wags his tail!" Of this sort of illusion we are given the following additional instance. Beneath the western portico of St. Paul's a crowd of gazers were some time since bending their eyes on the image of a saint, who was nodding at them with a very gracious affability. Curiosity had risen to the pitch of wonder at a miracle, when suddenly a sparrow-hawk flew from the ringlets of the saint, and the illusion vanished.

§ 214. *e*[2]. *Guesswork.*—First, as to dreams. Now, in the millions of dreams that each night brings to pass, it is much more likely that *some* should come true, than that *none* should. But there are other considerations tending to verify such predictions.

"If you do so and so, you will rue it." So speaks superior sagacity or superior caution; but does the fulfilment prove the foreknowledge? Columbus predicted to the Indians an eclipse. In this case the prediction was the result of a higher degree of knowledge on his part. An Earl of Caithness, we are told, was desirous of ascertaining the distance of a vessel laden with wine for his cellars. He went to a seer, and received the answer, "At the distance of four hours' sail." The prophet, to prove the truth of his statement, laid before the earl the cap of a seaman in the ship. Soon the ship turned the point, and a seaman claimed the cap, saying that shortly before it had been blown from his head in a gale.

Sometimes, however, the prediction is one of a series of mere fishing adventures. It is a conjecture, more or less sagacious, of one of a number of probabilities. So it was when Napoleon, when marching to Acre, had a Nile

boat named *L'Italie* destroyed. "Italy is lost to France," he declared; and the remark, when the result was found to have taken place, was treasured up, though it turned out to be only parenthetically true. So it was with the warning given by Lord Falkland and Archbishop Williams of the fate of Charles I. So it was with the famous prophecies of Cazotte, of the decapitation of himself and his friends. In each case the prophecy was a conjecture, and the event at the time probable.

Then come the mere dodging oracles, which are so framed as to read both ways.

"The power is here which Cæsar will overcome;" leaving the question whether it is Cæsar or the power which is to be triumphant to be determined by the result.

Then take the following given to Pyrrhus on his way to attack Rome:—

"Aio te Æacida Romanos te vincere posse;" meaning either that Rome was to conquer him, or he conquer Rome.

Alexander the Great, in the first gush of his youthful vigor, visited the Delphic pythoness in order to obtain a favorable omen for his eastern campaign. The priestess shrank from an interview with a prince at once so capricious and so powerful. Alexander, however, would take no refusal, and, seizing her, forced her down upon the tripod from which her prophetic strains usually emanated. An operation like this, when we keep in mind the age of the prophetess, and the sharp, jutting points of the tripod on which she was thus trussed, was anything but agreeable to her, and she cried out testily, "O son! who can withstand thee?" Alexander inquired no further, for this pettish cry was seized by him as a divine announcement of his future invincibility.

To this may be added those instances in which an apparently supernatural presentiment is produced by the resuscitation of a dead recollection. Let us take the following, from Moreton's *Essay on Apparitions:* "The Reverend Dr. Scott, of Broad street, was sitting alone in his study. On a sudden, the phantom of an old gentleman, dressed in a black velvet gown, and full-bottom wig, entered, and sat himself down in a chair opposite to the Doctor. The visitor informed him of a dilemma in which his grandson, who lived in the west country, was placed, by the suit of his nephew for the recovery of an estate. This suit would be successful, unless a deed of conveyance was found, which had been hidden in an old chest in the loft of the house. On his arrival at this house, he learned that his grandson had dreamed of this visit, and that his grandfather was coming to aid him in the search. The deed was found in the false bottom of the old chest, as the vision had promised."

Now, the solution no doubt is, that the dreamer heard of the place of deposit when a boy, and had the circumstances recalled to him by the fact of the pending trial.

The same explanation applies to the following cases:—

After the death of Dante, as we are told by the same author, it was discovered that the thirteenth canto of the *Paradise* was missing. Great search was made for it, but in vain; and to the regret of every body concerned, it was at length concluded that it had either never been written, or had been destroyed.

The quest was therefore given up, and some months had elapsed, when Pietro Allighierif his son, dreamed that his father had appeared to him and told him that if he removed a certain panel near the window of the room in which he had been accustomed to write, the thirteenth canto would be found. Pietro told his dream, and was laughed at, of course. However, as the canto did not turn up, it was thought as well to examine the spot indicated in the dream. The panel was removed, and there lay the missing canto behind it, much mildewed, but fortunately still legible.

A gentleman in this country received a promissory note to a large amount, which he placed in a book. After the note became due, he was unable to recollect where he had placed it, and the debt was in danger of being lost, and his character seriously injured, as one who was ready to press a claim for which he had no evidence. The fact caused him great anxiety, but his efforts to recollect the place of deposit were fruitless. Some time afterwards he was almost drowned, and became apparently insensible. When in this state, all the circumstances of the deposit flashed upon his mind, and the spot where he had placed the note was recalled. When he was able to speak, he sent for the book, and there the note was found.

Sir Evan Nepean, being at the time Secretary of the Admiralty, found himself one night unable to sleep, and was urged by an indefinable feeling that he must rise, though it was then only two o'clock. He accordingly did so, and went into the park, and from that to the Home Office, which he entered by a private door, of which he had the key. He had no object in doing this; and to pass the time, he took up a newspaper that was lying on the table, and there read a paragraph to the effect that a reprieve had been dispatched to York, for the men condemned for coining. The question occurred to him, was it indeed dispatched? He examined the books and found it was not; and it was only by the most energetic proceedings that the thing was carried through, and reached York in time to save the men.

Mrs. Crowe, in her *Night Side of Nature*, tells us of a case that occurred not many years since, where a murder having been committed, a man came forward, saying that he had dreamed that the pack of the murdered peddler was hidden in a certain spot; where, on a search being made, it was actually found. They at first concluded he was himself the assassin, but the real criminal was afterwards discovered; and it being asserted that the two men had passed some time together since the murder, in a state of intoxication, the conclusion was generally reached that the crime and the place of concealment had been communicated to the pretended dreamer in such a way, in consequence of his then drunkenness, as to leave a vague impression on his mind, without enabling him to understand how that impression came.

Now here we have in each case a solution perfectly in accordance with well-known psychological laws. The soul, of which memory is an attribute, is independent of corporeal conditions, and is unshackled by those bonds which confine even the will. It is this, we may remark incidentally, which invests the memory with such tremendous future retributive powers.

§ 215. *f*[2]. *Natural Phenomena at present inexplicable.*—Under this head we may place the alleged "odylic force" of the animal magnetists and spirit

rappers. The phenomena of spiritualism may be thus explained in accordance with well-known natural analogies. They differ in no respect from a series of other phenomena equally inexplicable, but for which it has never been thought necessary to suppose direct Satanic or spiritual coercion. The strongest way of stating the magnetic theory is, that one human being is able, under certain circumstances, to so impress his idiosyncrasies upon another as to produce in that other their counterparts. Suppose, instead of this, it should be stated that a *dog* is able to so act upon a human being as after a certain period of time to impress *his* idiosyncrasies upon the man, to cause him to bark like a dog, to believe himself a dog, in fact, to respond to the dog's nature. And yet this horrible and mysterious transformation we witness in the phenomenon of hydrophobia, and what is more, we rest satisfied with the fact without attempting to explain it supernaturally, though the process by which this extraordinary infusion of one nature into another is effected, is utterly inexplicable. And again, we see that the sun, itself an unintelligent agent, is able so to act upon a silver plate as to stamp in a flash the portrait of an intermediate object—say a human face—upon the inanimate metal. Is this more strange than that the passionate and flexible spirit of man, impregnated as it is with so many wonderful energies which we have never been able to test, should project on the soul of its fellow at least some sort of portrait of itself? Do we not see this constantly in social life, at least to some modified extent? Have we been able as yet to systematize and define the transforming influences of human affection or fear? Observe, also, that the most cautious psychologists maintain that phenomena such as these, or similar to these, are explicable on natural grounds. Thus, in Sir William Hamilton's edition of Reid, we find the following passage:—

"No man can show it to be impossible to the Supreme Being to have given us the power of perceiving external objects, without any such organs;" that is, our organs of sense. "We have reason to believe that when we put off these bodies, and all the organs belonging to them, our perceptive powers shall rather be improved than destroyed or impaired. We have reason to believe that the Supreme Being perceives everything in a more perfect manner than we do, without bodily organs. We have reason to believe that there are other created beings endowed with powers of perception more perfect and more extensive than ours, without any such organs as we find necessary."

To this Sir William Hamilton adds the following note: "However astonishing, it is now proved beyond all rational doubt, that in certain abnormal states of the nervous organism, perceptions are possible through other than the ordinary channels of the sense."

But let us go further and see whether phenomena apparently equally inexplicable are not susceptible of a satisfactory solution. Take, in this view, the following passage from Mrs. Crowe's Night Side of Nature:—

"It is the opinion of these psychologists, however, that in the normal and healthy condition of man, the union of body, soul, and spirit is most complete, and that all the degrees of disunion in the waking state are degrees of morbid derangement. Hence it is, that somnambulists and clairvoyants are chiefly to

be found among sickly women. There have been persons who have appeared to possess a power which they could exert at will, whereby they withdrew from their bodies, these remaining during the absence of the spirit in a state of catalepsy, scarcely if at all to be distinguished from death.

"I say, *withdraw from their bodies*, assuming that to be the explanation of the mystery; for, of course, it is but an assumption. Epimenides is recorded to have possessed this faculty; and Hermotinus, of Clazomeres, is said to have wandered, in spirit, over the world, while his body lay apparently dead. At length his wife taking advantage of this absence of his soul, burned his body, and thus intercepted its return; so say Lucien and Pliny the elder; and Varro relates, that the eldest of two brothers, named Corfidius, being supposed to die, his will was opened, and preparations were made for his funeral by the other brother, who was declared his heir. In the mean time, however, Corfidus revived, and told the astonished attendants, whom he summoned by clapping his hands, that he had just come from his younger brother, who had committed his daughter to his care, and informed him where he had buried some gold, requesting that the funeral preparations he had made might be converted to his own use. Immediately afterwards, the news arrived that the younger brother was unexpectedly deceased, and the gold was found at the place indicated. The last appears to have been a case of natural trance; but the two most remarkable instances of voluntary trance I have met with in modern times, are those of Colonel Townshend, and the dervish who allowed himself to be buried. With regard to the former, he could, to all appearance, die whenever he pleased; his heart ceased to beat; there was no perceptible respiration; and his whole frame became cold and rigid as death itself; the features being shrunk and colorless, and the eyes glazed and ghastly. He would continue in this state for several hours, and then gradually revive; but the revival does not appear to have been an effort of will—or rather, we are not informed whether it was or not. Neither are we told whether he brought any recollections back with him, nor how this strange faculty was first developed or discovered—all very important points, and well worthy of investigation.

"With respect to the dervish, or fakeer, an account of his singular faculty was, I believe, first presented to the public in the Calcutta papers, about nine or ten years ago. He had then frequently exhibited it for the satisfaction of the natives; but subsequently he was put to the proof by some of the European officers and residents. Captain Wade, Political Agent at Loodiana, was present when he was disinterred, ten months after he had been buried by General Ventura, in presence of the Maharajah and many of his principal Sirdars.

"It appears that the man previously prepared himself by some processes which, he says, temporally annihilate the powers of digestion, so that milk received into the stomach undergoes no change. He next forces all the breath in his body into his brain, which becomes very hot, upon which the lungs collapse, and the heart ceases to beat. He then stops up, with wax, every aperture of the body through which the air could enter, except the mouth, but the tongue is so turned back as to close the gullet, upon which a state of insensi-

bility ensues. He is then stripped and put into a linen bag; and, on the occasion in question, this bag was sealed with Runjeet Sing's own seal. It was then placed in a deal box, which was also locked and sealed, and the box being buried in a vault, the earth was thrown over it and trod down, after which a crop of barley was sown on the spot, and sentinels placed to watch it. The Maharajah, however, was so skeptical, that, in spite of all these precautions, he had him, twice in the course of ten months, dug up and examined, and each time he was found to be exactly in the same state as when they had shut him up.

"When he is disinterred, the first step towards his recovery is to turn back his tongue, which is found quite stiff, and requires for some time to be retained in its proper position by the finger; warm water is poured upon him, and his lips and eyes moistened with ghee or oil. His recovery is much more rapid than might be expected, and he is soon able to recognize the by-standers, and converse. He says that, during his state of trance, his dreams are ravishing, and that it is very painful to be awakened; but I do not know that he has ever disclosed any of his experiences. His only apprehension seems to be, lest he should be attacked by insects, to avoid which accident the box is slung to the ceiling. The interval seems to be passed in a complete state of hibernation; and when he is taken up no pulse is perceptible, and his eyes are glazed like those of a corpse."

So with regard to the alleged supernatural celestial appearances. The Parhelia, or mock suns, we are told by the authority last quoted, are produced by the reflection of the sun's light on a frozen cloud. How readily these phenomena are magnified, we may learn from the ancient and modern records. In 1223, four suns were seen, of crimson, inclosed in a wide circle of crystal color. In the same year two giant dragons were seen in the air, flapping their monstrous wings and engaging in single combat, until they both fell into the sea and were drowned! Then, in 1104, there were seen four white circles rolled round the sun; and in 1688, two suns and a reversed rainbow appeared at Bishop's Lavington, in Wiltshire; and in February, 1647, there is an account and sketch of three suns and an inverted rainbow, which Baxter terms, "Binorum Pareliorum φαινομενον." And because there were two lunar and one solar eclipses in 1652, it was called, as Lilly records, "Annus tenebrarum," or the dark year.

Among the wonders seen by the great traveller, Pietro della Valla, we are reminded by Mr. Dendy, was the bleeding cypress tree, which shadows the tomb of Cyrus, in Italy. Under the hollow of its boughs, in his day, it was lighted with lamps, and consecrated as an oratory. To this shrine resorted many a devout pilgrim, impressed with a holy belief in the *miracle*. And what was this but a glutinous crimson fluid exuding from the diseased alburnum of a tree, which the woodmen, indeed, term *bleeding*, but which the ancient Turks affirmed or believed to be converted on every Friday into drops of real blood?

The red snow, which is not uncommon in the Arctic regions, is thus tinted by very minute cryptogamic plants, and the fairy ring is but a circle of herbage poisoned by a fungus.

§ 216. *c*[1]. *Historical Evidence of such Possession.*—We come next to the question whether we have evidence from history that there has ever been such a systematic deviation from the Divine policy as is implied by the entrance of specific evil spirits into specific human bodies, followed by a supernatural subjection of the will if not by a merging of the individuality of the latter in the former. There is little doubt that this was taught by the ancient philosophers. Plato begins by expressly asserting the existence of demons, who, on his theory, are the sole supernatural agencies by which the Divine will operates on the human heart. Πᾶν τὸ δαιμόνιον μεταξύ ἐστι θεοῦ τε καὶ θνητοῦ. And again Ἑρμηνεῦον καὶ διαπορθμεῦον θεοῖς τὰ παρ' ἀνθρώπων,, καὶ ἀνθρώποις τὰ παρὰ θεῶν, τῶν μὲν τὰς δεήσεις καὶ θυσίας, τῶν δὲ τὰς ἐπιτάξεις τε καὶ ἀμοιβὰς τῶν θυσιῶν.(*t*) He tells us that demoniacs do not use their own dialect or tongue, but that of the demons who have entered into them.(*u*) Lucian declares "the *patient* is silent: the demon returns the answer to the question asked." And yet at the same time it would seem that the possibility of the cure of the demoniacs by medicine was recognized, which would scarcely be the case if the malady was regarded as exclusively supernatural. Thus we are told, "Helleboro quoque purgatur *lymphaticus* error."(*v*) And Josephus and the Jewish physicians speak of medicines composed of stones, roots, and herbs, being useful to demoniacs.(*w*)

With regard to the New Testament history, two views have been taken, each of which has the sanction of authorities distinguished both for learning and for loyalty to the Christian cause. On the one hand, it is urged that the language of the Gospel writers is express to the very point; on the other, it is maintained that the accounts given by them may all be understood as exhibiting no more than the phenomena of certain diseases, particularly hypochondria, mania, and epilepsy; that the *popular* terms were used to describe these diseases, just in the same way that "Possession" (Besessenheit) is now used by some of the most technical German psychologists to describe the same thing; and that the sacred penman meant to convey no more than that the patients were affected with the complaints which those phrases described.(*x*)

It may not be considered out of place, however, to observe that the excessive theological liberality which, in order to accommodate the sacred text to the supposed requirements of science, resolves statements of facts into meta-

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(*t*) Plato, Sympos. p. 202, 203. Lipsiæ, 1829, p. 252. See also Plutarch, De Defect. Orac. Farmer's Essay on the Demoniacs.

(*u*) Plato, *apud* Clem. Alex. Strom. I. 405, Oxon.

(*v*) Seren. Sammon, c. 27, v. 507. (*w*) Gittei, f. 67.

(*x*) The student is referred to a very comprehensive article on this point, by the Rev. J. F. Denham, of St. John's College, Cambridge, in Kitto's Bib. Cyc., tit. Demoniacs, in which the arguments on both sides are very fairly exhibited; to Farmer's Essay on the Demoniacs; to Jahn's Biblisches Archäologie; to Archbishop Whateley's Lectures on Good and Evil Angels; to Winer's Biblisches Real Wörtenbuch, art "Besessene;" to Moses Stuart's sketches of Angelogy, in Bibliotheca Sacra, 1843; to Bishop Burgess' sermon on Demonology, in the Phil. course of Lectures on Evidences, Phil. 1854; to President Appleton's discourse on the same; and to a very brilliant though eccentric treatise, recently published, under the title of "the Apocatastasis Progress Backwards." Burlington, 1854. See also, the Rev. Chas. Beecher's "Review of the Spiritual Manifestations," N. Y., 1853.

phors and narratives into parables, is in this, as in most other respects, insufficient to reconcile the captious, and is unnecessary for the purpose of relieving the sincere inquirer. Those who have gone such great lengths in thus adapting the statements of our Lord's treatment of the demoniacs to the supposed standard of modern medical experience, would do well to observe how unnecessary their labors appear to one of the most eminent and experienced of modern physicians. "Those who admit the authority of Scripture," says Dr. Cheyne, "are not permitted to doubt that when our Lord cured the demoniacs, he actually dispossessed them. It could not have been, as some have alleged, that he merely removed epilepsy or insanity. Without entering into all the particulars of the discussion, any Christian who will read with attention the fourth and eighth chapters of St. Matthew's Gospel, must reject the hypothesis of Mede, that the demoniacs mentioned in the gospels labored under natural diseases. In the fourth chapter it is expressly specified that our Lord 'healed all sick people that were taken with divers diseases and torments,' including epilepsy, we may fairly infer, 'and those which were possessed with devils,' a separate class, 'and those which were lunatic,' or of unsound mind. In the eighth chapter, the same distinction is observable between casting out devils and curing diseases: sixteenth verse, 'and he cast out the spirits with his word, and healed all that were sick.' But the relation which decides the question is that of the miracle performed in the country of the Gergesenes.(*y*) Before we can believe that the two men who came out of the tombs were maniacs or epileptics, it must be proved that disease is not merely a mode of animal life, but something substantive and transferable from one class of beings to another—from man to the lower animals."(*z*)

Without, therefore, any further attempt to determine the question whether demoniac possession is taught as a fact by history, either sacred or profane, we revert to the inquiry as to whether it exists at the present day. And the analysis we have just given of the phenomena on which such possession now rests, justifies us in saying, that in a lego-psychological view, we have no evidence of any such present existence. All modern phenomena can be satisfied by the recognition of the independent existence of that species of mania which causes an insane belief in the patient that he is possessed with a demon.(*a*)

(*y*) Matt. viii. 28.

(*z*) Essays on Derangement in connection with Religion, by John Cheyne, M. D., F. R. S. E., M. R. I. A., Physician General to His Majesty's Forces in Ireland. Dublin, 1843, p. 68, &c. On the subject of demoniacs generally, Whateley's Good and Evil Angels, Lecture VI.

(*a*) Schürmayer, Gericht. Med. § 550. For a case of supposed Demoniacal Possession, see Journal of Psychological Medicine, vol. iii. p. 262; Metzger's verm. Schrift. Bd. 3, s. 217; Ces. Ruggieri's history of the self-crucifixion of M. Lovati at Venice, translated by Schlegel, Rudolst, 1807. (In the latter case, the patient first cut off his own private members, and then crucified himself.) Henke's Zeitsch. E-H., 11 s. 291—(Two Swiss girls, who immolated themselves.) Henke's Zeitschr. Bd. 47, p. 447. Pyl's essay, 6 Samml. p. 214. (Infanticide by a demoniac.) Henke's Zeitschr. 27 Bd. p. 330—(Periodical Demonio-mania.) Demoniacal possession, as Siebold (Gericht. Med. § 210) very justly remarks, was much more common in former days than the present, and of this to say nothing of the New Testament period, illustrations may be found in the many cases of witches, seers and soothsayers, of the middle ages.—The Convulsions, &c., of St Medard fall under this head. See Hecker on the Dancing Mania, Berl. 1832. Published also by the Sydenham Society. See also case, *ante*, §

§ 217. *b. Religious Insanity.*

a[1]. *Christianity, taken in its practical sense, has no tendency to produce insanity.*—"To tell a man he cannot save himself, but that if he trust in God, God will save him"—we paraphrase a passage from Coleridge—"is the lamb in wolf's clothing; to tell him that he can save himself without help, is the wolf in lamb's clothing." The first is mercy in a dress of severity; the second cruelty in a dress of mercy. "Only try," says the philosopher, "trust in yourself, and you will conquer this evil habit." "But I *have* tried—I have trusted in myself—I have failed, and I know that if I am to be judged by my works, I will be condemned." "Only try," says Christianity, "throw yourself for mercy on Christ—He will supply all your wants, will make up all your deficiencies, and will save you in the end, if you but give a childlike faith to Him." Now, which of these two doctrines is the least likely to agitate the mind—that which thus offers immediate pardon and future peace on the sole condition of present repentance, and trust, or that which makes salvation dependent on a calculation of the sins and the good deeds of the past—which makes it necessary, before a sure conclusion be reached, that the most secret recesses of memory be searched—and which after all leaves the inquirer with a crushing consciousness of an evil nature which infuses sin into his very thoughts, and for which there is neither atonement nor cure?

The first is, in fact, the practical working of the doctrine of justification by faith, a doctrine which in its moral relations is thus admirably stated by Sir James Macintosh. "The enormities of Tetzel found Luther busied in the contemplation of the principle which is the basis of all ethical judgment, and by the power of which he struck a mortal blow at superstition. Men are not made righteous by performing certain actions which are externally good; but men must have righteous principles in the first place, and then they will not fail to perform virtuous actions." "The general terms he used, enunciate a proposition equally certain and sublime, the basis of all pure ethics; the cement of the eternal alliance between morality and religion, and the badge of the independence of both on the low notions and dim insight of human laws."(*a*)

584, note (*z*). And also a series of very curious and valuable articles on Pythonic and Demoniac Possession in Dublin Univ. Mag. for Sept. and Oct., 1848, for March and Dec., 1849, and for January, 1850.

(*a*) I particularly call attention to the following remarks of Dr. Chalmers, as sustaining the position in the text:—

"And perhaps the most plain and direct vindication of the evangelical system, as being altogether on the side of morality, is that morality forms the very atmosphere both of the happiness which it offers here, and of the heaven to which it points hereafter. In the service of an earthly superior, the reward is distinct from the work that is done for it. In the service of God, the main reward lies in the very pleasure of the service itself. The work and the wages are the same. It is not after the keeping of the commandments, but in the keeping of the commandments, that there is great reward. Even from the little that is made known to us of the upper paradise, it is evident that its essential blessedness lies not in its splendor, and not in its melody, and not in the ravishment of any sensible delights or glories, but simply in the possession and pay of a moral nature in unison with all that is right, and in the rejoicing contemplation of that Being from whose countenance there beams and is impressed upon all the individuals of His surrounding family the moral excellence which belongs to Him. The gate of reconciliation through the blood of Christ is not merely the gate of escape from a region of wrath, it is the gate of introduction to a field of progressive and aspiring virtue; and it is the growth of this virtue upon earth that constitutes its full and its finished beatitude. The land to which every honest believer is bending his foot-

"But Predestination?" There is no doubt that if the doctrine of predestination be unduly dwelt upon, it may injuriously affect the brain; but this is

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steps is a land of uprightness, where the happiness simply consists in a well-attempered soul rescued from the tyranny of evil, and restored to the proper balance of principles and affections which had gone into derangement. It is the happiness of a living being doing as he ought, and living as he ought. It were a contradiction of terms to aver of such a system that it is unfavorable to the interests of virtue. The doctrine of justification by faith is not the absorbent of all human activity, but the primary stimulant of that busy and prosperous career in which the soul, emancipated alike from fear and earthly affection, rejoices in the acquirement of a kindred character to God, and finds the work of obedience to be its congenial and best-loved employment. This is the real process of effort and mental discipline that is undergone by every honest believer, though hidden from the general eye under the guise of a phraseology that is derided and unknown by the world. He is diligent, that he may be found without spot and blameless on the great day of examination. It is the business of his whole life to perfect holiness in the fear of God.

"And for effecting this moral transformation on the character of its disciples does this system of truth provide the most abundant guarantees. It holds forth the most express announcement that without such a transformation there will be no admittance into the kingdom of God. And it reveals an influence for achieving it which is ever in readiness to descend on the prayers of those who aspire after the affections and the habits of righteousness. And, along with the call of faith, does it lift the contemporaneous call of repentance. And it marks out a path of obedience, by the urgency and guidance of precepts innumerable. And, so far from lulling into inaction by its free offer of forgiveness, does it only thereby release its disciples from the inactivity of paralyzing terror, and furnish them with the most generous excitements to the service of God, in the love, and the gratitude, and the joy of their confident reconciliation. And, finally, as if to shut out all possibility of escape from the toils and the employments of virtue, does it make known a day of judgment, wherein man shall be reckoned with, not for his dogmata, but for his doings; and when there will be no other estimate of his principles than the impulse which they gave to his practical history in the world—they who have done good being called forth to the resurrection of the just, and they who have done evil to the resurrection of damnation.

"Now, all this truth has full recognition and occupancy among the articles of the evangelical creed; and the doctrine of justification by faith alone, so far from laying any arrest on the practical influence of it, is felt by every genuine believer to give all its spirit and all its scope to the new obedience of the Gospel. Without this doctrine, in fact, there can be no agreement between God and man, but by a degrading compromise between the purity of the one and the imperfection of the other; and the point at which this compromise should be struck is left undetermined, and at the discretion of each individual, who will, of course, accommodate the matter to the standard of his own performances; and thus, under all the varieties of moral turpitude, as well as moral accomplishment, will there be a fatal tranquillity of conscience, in a world where each may live as he lists; and heaven's law, once brought down to suit the convenience of our fallen nature, may at length offer no disturbance to any degree either of ungodliness or unrighteousness in our species. But with the doctrine of justification by faith there is no such compromise.

"The rewards of the divine government are still granted in consideration of a righteousness that is altogether worthy of them. The claims of the Godhead to the perfect reverence, as well as the perfect love, of His creatures are kept unbroken; and when He proclaims His will to be our sanctification, the disciple, as he feels himself released from the vengeance of an unbending law, also feels himself to be placed in a career of exertion that is quite indefinite; where he will stop short at no degree of moral excellence—where he can be satisfied with no assignable fulfilment whatever—where his whole desire and delight, in fact, will be in progress; and he will never cease aspiring and pressing forward till he has reached his prize, and stands upon the summit of perfection. It is only under the impulse of such principles as these that the mighty host of a country's population can be trained either to the virtues of society or to the virtues of the sanctuary. The former may, to a certain extent, flourish in themselves among the children of this world's prosperity. But, saving in conjunction with, and as emanating from the latter, they never can be upheld amid the workshops and the habitations of industry. It is a frequent delusion that the evangelical system bears no regard to the social virtues, because in the mind of an evangelical Christian they are of no religious estimation whatever, but as they stand connected with the authority of God. But he cannot miss to observe that the sanctions of this authority are brought, in every page of the Bible, most directly and abundantly to bear upon

not a *religious* difficulty. Predestination operates as effectively on things temporal as on things spiritual. The loss of a friend, the purchase of a house, my going on a journey to-morrow, my taking a book this next moment from the library by my side, are as much the matters of foreordination as are the great conditions of the future. If religion be abandoned because it involves such speculations, so must all human thought whatever. These questions are as much matters of philosophy as of religion.

Reducing the controversy within its proper limits, the contending views may be thus stated: Philosophical necessity consists of the divine sovereignty, incorporating within itself, and recognizing as an independent power, free agency; libertarianism, of free agency, capable, within its own range of action, of voluntary choice, but dependent for self-renovation on divine grace. In other words, each system consists of the same two great truths, apparently hostile, yet ever consistent in human consciousness. GOD IS SOVEREIGN; THE WILL IS FREE. If, in respect to the question of the primacy of these truths, there should be great diversity of opinion—if by one class of thinkers the one is placed first, and gazed at with peculiar reverence, if by another the other—this is no more than we find in civil society, where the two parallel elements of individual liberty and governmental authority are subject to the same treatment. The question is one of temperament. In sociology we find, on the one side, those who look up with peculiar reverence to the conservative power of government, who distrust the capacity of bodies of men for self-government, who turn fondly to the past and sadly to the future; on the other side, those who, holding that true conservatism requires constant change in order to withstand the dilapidations of time, have an *a priori* tendency to reforms, and look upon the past mainly as a platform on which to raise the achievements of the future. To the struggles of these two classes of opinion—the conservative and the reforming—we owe a great part of the healthy action of society. No man would now affirm that either class possesses the right solely, or that the apparently hostile truths of human independence and of human subordination are not concurrently recognized in political economy. Among those engaged in marshalling the two cardinal propositions of metaphysical theology we may call for the same charity.(*b*)

As is remarked by Dr. Rush, in *Christian* countries departures from the *Christian* faith (*e. g.* infidelity and atheism) are "frequent causes" of insanity.(*c*) And the same is equally true of departures in the direction of

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them; and thus, in his eyes, do they instantly reappear, strengthened by all the obligations, and invested with a full character of deepest sacredness. The integrity of such a creed as he professes is the best guarantee for the integrity of his relative and social conduct. And it is only in proportion to the presence of this derided orthodoxy that the honesties and sobrieties of life will spread in healthful diffusion over the face of the country."—*Chalmers's Christian and Economic Polity*, vol. i. p. 204.

(*b*) Wharton on Theism, § 128.

(*c*) Dr. Winslow, in his late interesting work on suicide, gives us the following instances of this: "It may be mentioned, as a fact corroborating the opinion, that productions of an infidel character have a tendency to originate a disposition to suicide, by weakening the moral principles; that when the celebrated and notorious Tom Paine's Age of Reason was first published, the papers of the day recorded many cases of self-murder, committed by persons who avowed that the idea never entered their heads until they had become familiar with the above-mentioned writer. An indivi-

ignorant and fanatical superstition. The *former* position is readily explained. The soul, as well as the body, to enable it to stand steadily, requires that the eye shall be fixed upon some distant and external point. No man, for instance, can succeed in standing on one foot if he fixes his eye on his own person; and he succeeds in maintaining his upright position precisely to the extent he is able to fix his eye firmly on a point in the distance. And in a psychological view this is readily explicable. It is only by the recognition of a *future* state that the soul can be effectually steadied in *this*. And it is precisely such a system as the Christian religion describes—one which affords a positive assurance of immortal peace to those who seize upon it for their portion—which, while it recognizes that innate depravity, which the heart is but too ready to testify to from its own experience, promises divine aid in the struggle—which announces the pardon of past sin by a vicarious atonement, while it affords to the creature the aid and succour in all his troubles, of a divine friend and yet of a human example.

"I envy no qualities of the mind or intellect in others, nor genius, nor power,

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dual, zealous in the diffusion of Paine's principles, purchased several hundred copies of his work, which he most industriously circulated, gratuitously, in quarters where he knew the doctrines of Christianity had already obtained a footing. A copy of the Age of Reason, elegantly bound, was received by a young lady who was acting in the capacity of governess in the family of a gentleman of great respectability. The lady had no conception from whom the present came, and having heard of the book she felt a curiosity to become acquainted with the doctrines which it inculcated. The circumstance of her having received the book was not mentioned to any member of the family with whom she resided, and in the evening when she retired to her own room, she read it with great attention. The family noticed, in a few weeks, a perceptible alteration in the appearance of the young lady. She became exceedingly thoughtful and contemplative. Her health also appeared sensibly affected. The mother of the children whom she was instructing took advantage of the first opportunity of speaking to her on the subject. She expressed herself very unhappy in her mind, but refused to disclose the cause of her mental uneasiness. It was thought she had formed an attachment, and was suffering from the effects of disappointed affection. She was questioned on these points, but persisted in concealing the circumstances which had been operating so injuriously on her mind. The mental dejection increased, and the result was an alarming attack of nervous fever, of which she was cured by an able physician with much difficulty. When convalescent she was noticed one day busily employed in writing, and when interrupted showed great anxiety to secrete the piece of paper on which she had been transcribing her thoughts. In the course of the evening of the same day, a deep groan was heard to issue from her room. The servant immediately entered, when, to her great horror, she saw the governess on the floor with a terrible gash in her throat. Assistance was directly obtained; but, alas! not in time to save the life of the poor unfortunate girl. On searching her desk, a sheet of paper was discovered, on which she had disclosed her reasons for the rash act. She said, that from the moment she read the Age of Reason, her mind became unsettled. Her previous religious impressions were undermined; in proportion as she was induced to imbibe the doctrines of Tom Paine, so she became miserable and wretched. From one error she fell into another, until she actually believed that death was annihilation; and although she appeared firmly rooted in this belief, she expressed herself horrified beyond all expression at the bare idea of dissolution. For some time prior to her illness, she had felt an impulse to sacrifice her life, but had not the courage to perform the act. After her recovery, she felt the impulse renewed with increased strength, until, with a hope of escaping from an accumulation of misery which was weighing her to the earth, she determined to commit suicide. She also, in the document referred to, asked her friends to forgive her, and to take warning from her fate." —*Winslow's Anatomy of Suicide*, pp. 87–89. It has been asserted, and remains uncontradicted, that Mr. Hume lent his Essay on Suicide to a friend, who, on returning it, told him it was a most excellent performance, and pleased him better than anything he had read for a long time. In order to give Hume a practical exhibition of the effect of his defence of suicide, his friend shot himself the day after returning him the essay.—*Winslow's Anatomy of Suicide*, pp. 31, 32.

wit or fancy," says Sir H. Davy: "but if I could choose what would be most delightful, and, I believe, most useful to me, I should prefer a *firm religious belief to every other blessing:* for it makes life a discipline of goodness; creates new hopes when all earthly hopes vanish; and throws over the decay, the destruction of existence, the most gorgeous of all lights; awakens life in death, and calls out from corruption and decay, beauty and everlasting glory."

The habitual practical recognition and adoption of such a system as this must necessarily generate a sobriety of temper, which will of all others be the most distant from derangement. That the reception of Christianity, whether real or nominal, should *cure* insanity, is no more to be expected than that it should cure the smallpox. If it did—if a special miracle was wrought for the purpose of destroying the original characteristics of each individual, it would not only destroy moral agency and hence break up probation, but would produce an almost entire derangement of human affairs by obliterating the marks of individuality, to say nothing of identity.

To the same effect are the following just observations of Dr. Copland: "It must not be supposed, from what I have advanced, that the Christian religion is truly chargeable with causing insanity; it actually has an opposite tendency. Mistaken views, excessive fervor, unfounded fears, and various feelings arising from these sources, are the only causes of insanity in connection with religion. Among those who entertain just and sober opinions on religious topics—who make Christian doctrines the basis of their morals, the governors of their passions, the soothers of their cares and their hopes of futurity—insanity rarely occurs. The moral causes of derangement which would not fail of producing injurious effects on others, prove innocuous in them, for these causes would be met by controlling and calming considerations and sentiments, such as would deprive them of intensity or neutralize their effects. Truly religious sentiments and obligations soothe the more turbulent emotions, furnish consolations in affliction, heal the wounded feelings, administer hopes to the desponding, and arrest the hands of violence and despair."(*d*)

And the testimony of Dr. Cheyne, who stood for many years at the head of the medical profession in Ireland, occupying the responsible post in that kingdom of physician-general to the forces, is equally emphatic: "Our experience of, and inquiries into the nature of insanity, during a period of forty years," he says, "enable us to say that such cases as that which we have just related" (those of insanity from morbidity of the religious affections), "are not in the proportion of one in a thousand to the instances of insanity which arise from wounded pride or disappointed ambition."(*e*) "True religion," he tells us in another place,(*f*) "is a preservative, although not a complete preservative against derangement of the mind. We have no intention of concealing that we have known many instances of insanity among believers, but it was not caused by their creed. We have also known instances in which all sense of religion has been permanently destroyed by insanity. Of such cases we would remark, that the believer has no right to expect for his believing friend exemp-

(*d*) Copland, Med. Dict., art. "Insanity."
(*e*) Cheyne on Derangement in connection with Religion, pp. 178, 179.
(*f*) Ibid. p. 146.

tion from evils arising from the state of the body, on which insanity always depends. Let him moreover recollect, that as total insanity puts an end to moral accountability, nothing which may take place during a paroxysm of the disorder, can affect the future happiness of his friend."

"When fairly examined," says Dr. Combe, "the danger is seen to arise solely from an *abuse* of religion, and the best safeguard is found to consist in a right understanding of its principles and submission to its precepts. For if the best Christian be he, who in meekness, humility, and sincerity, places his trust in God, and seeks to fulfil all his commandments, then he who exhausts his soul in devotion, and at the same time finds no leisure or no inclination for attending to the common duties of his station, and who so far from arriving at happiness or peace of mind, becomes every day the more estranged from them, and finds himself at last involved in disease and despair, cannot be held as a follower of Christ, but must rather be held as a follower of a phantom assuming the aspect of religion. When insanity attacks the latter, it is obviously not religion that is its cause; it is only the absence of certain feelings, the regulated activity of which is necessary to the right exercise of religion; and against such abuse a sense of religion would, in fact, have been the most powerful protection. And the great benefit of knowing this is, that whenever we shall meet with such a blind and misdirected excess of our best feelings in a constitutionally—nervous or hereditarily—predisposed subject, instead of encouraging its exuberance, we should use every effort to temper the excess, to inculcate sounder views, and to point out the inseparable connection which the Creator has established between the true dictates of religion and the practical duties of life, which it is a part of his purpose in sending us here to fulfil."

These views are not uncorroborated by practical observation. It is not necessary to record the cases where mania, particularly that of the suicidal cast, has been generated by an undue estimate of the importance of this life's incidents as compared with those of the next.(*g*) On the other hand we may find a pregnant illustration of the converse process in the fact mentioned in the thirteenth report of the Hartford Retreat, that two hundred and eight farmers, fifty-eight merchants, and thirty-four day-laborers have been admitted into that institution to four clergymen.(*h*) So in the latest report we now

(*g*) Dr. Rush, after noticing the fact that 150 suicides having taken place in Paris in the year 1782, and but 32 in London, says, "It is probable the greater portion of infidels in the former than in the latter city, at that time, may have occasioned a difference in the number of deaths in the two places, for suicide will naturally follow small degrees of insanity, where there are no habits of moral order from religion, and no belief in a future state."—*Rush on the Mind*, p. 69.

(*h*) The chaplain in the same report states: "The usual week-day services in the chapel of the institution, singing, reading the Scriptures, and prayer, have been performed during the year. On the afternoon of the Sabbath, there have been religious exercises similar to those in other Christian congregations. The singing is still conducted by a choir composed of the attendants and patients, and adds much to the interest and value of the services. In these various exercises the patients have engaged with gratifying decorum, and solemnity. Strangers who for the first time are present at our worship in the chapel, often express surprise at their apparent devotion, and the stillness and steady attention with which they listen to divine truth. Indeed, it is believed that few congregations of the sane, in an ordinary state of feeling, exceed them in these respects,

"A sense of need opens a way for the gospel to the hearts of these sufferers. The service checks, for a few months, at least, the dark current of sorrow, calls the wan-

have before us, that of the New York State Lunatic Asylum. This report, which was transmitted to the legislature on February 7, 1860, and which therefore covers a period of uncommon religious interest, out of 312 cases gives only six which are attributed to "religious excitement." The cases attributable to causes religion could have corrected, are ten times that number.

Dr. Ray, in a late report of the Butler Hospital for the insane, says: "I believe—and it is in some measure the result of considerable observation of various psychological states—that in this age of fast living nothing can be relied upon more surely for preserving the healthy balance of the mental faculties, than an earnest practical conviction of the great truths of Christianity."

§ 218. *b*[1]. *What is called religious insanity is produced: a*[2]. *By a departure from practical Christianity; a*[3]. *Reliance on frames and emotions.*—Mr. Brownlow North, one of the most eminent evangelists of the present day, and one who may be fairly taken as the representative of the most active phase of home religious activity, thus speaks on this point: "Many imagine, unless they are at all times in a glow of fervor, an ecstatic frame of

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dering mind away from its delusions, and aids in forming a healthful self-control. A sense of propriety, the strong associations connected with such scenes in happier days, and the quiet of fellow worshippers, combine to restrain outbursts of feeling which they are often unable to resist in their own rooms. And aside from these influences of religious worship, who shall set limits to the great Physician of both soul and body, in making the gospel a means of moral renovation to the deranged mind.

"Increasing experience strengthens my conviction that the distinguishing principles of the gospel are no less adapted to the mind when disordered, than when in its normal state. In the former case, indeed, more care and a different mode of exhibition are demanded; but these principles unfolded calmly and clearly, in the sober manner of the Bible, will find as ready and intelligent and cordial a response in a congregation of the insane as in most others.

"The full value of the gospel in relation to mental derangement, both as a preventive and a remedy, is not, it is believed, fully appreciated. Official reports show that cases of insanity, in great numbers, result from causes against which the controlling daily influence of religious principle would guard the mind. By checking vices which prey on the body and mental feelings, such as envy, jealousy, inordinate grief, which wastes its energies, the gospel prevents diseases that result in insanity."

The fact that sound religious discipline exercises a salutary influence in assuaging the malady, does not, of course, go to refute the position that *unsound* religious excitement may not have produced it; but it *does* show that a judicious presentation of the sanctions of religion—even involving their most solemn features—is a conservative and not a distracting influence. The reports of Dr. Kirkbride and Dr. Woodward are strong to this point; and we cannot refrain from adding to them the following testimony from Miss Dix:—

"That among the hundreds of crazy people with whom her sacred missions have brought her into companionship, she has not found one individual, however fierce and turbulent, that could not be calmed by Scripture and prayer, uttered in low and gentle tones. The power of religious sentiments over those shattered souls seems miraculous. The worship of a quiet, loving heart, affects them like a voice from heaven. Tearing and rending, yelling and stamping, singing and groaning, gradually subside into silence, and they fall on their knees, or gaze upwards with clasped hands, as if they saw through the opening darkness a golden gleam from their Father's throne of love."

Armed with this gentle influence, we are told by an observer, she does not fear the violence of the madman. Well do we remember an instance that we heard from her own lips, in which she entered the cell of a maniac, against the remonstrances of the terrified keeper. As she persisted in entering, the door was instantly closed behind her to prevent escape. Alone she stood face to face with that wild man. He raised himself in a threatening attitude, and glared upon her with his fierce eye. She opened the Bible, and read the words of a Psalm. After a few lines, he bent his head to listen. The look of rage and terror passed from his countenance. His eye grew less wild, and sent forth sweet, blessed tears, until the madman sank down at that helpless woman's feet. And as she finished, he said, "Will you read those words again?"

feeling, all must be wrong with them. But there is nothing more dangerous or deceptive than a life of mere feeling; and its *most* dangerous phase is a life of religious emotional excitement. It is, in the last degree, erroneous to consider all this glowing ecstasy of frame a necessary condition of healthful spiritual life."

John Newton was the religious adviser of Cowper, and has been charged by Hayley, if not by Southey, with having aggravated by his emotional theology, Cowper's insanity. By both parties in this, as well as in the other theological controversies in which John Newton was engaged, he was regarded as a fair and square exponent of the evangelical theology of the day, a theology which has been peculiarly charged with this reliance on frames and feelings. Yet how unjust this is, Newton's earnest and repeated appeals show. "He who wants to tell experiences," said he at one time, "will soon be creating experiences to tell." "A humble, dependent frame of spirit, perseverance in the appointed means, care to avoid all occasions of sin, a sincere endeavor to glorify God, an eye to Jesus Christ as our all in all, are sure indications that the soul is thriving, whether sensible consolation abound or not. Neither high or low frames will do for a standard of faith; *self* may be strong in both."(*i*) Could there be wiser advice than this for the purpose of steadying the mind? And is not the certain faith on an extrinsic Providence far more likely to conduce to mental peace and rest, than that flurried and fluctuating introspection which makes salvation depend upon one's present impression of self?

§ 219. *b*[3]. *Appeal to unscriptural supernaturalism.*—Two cases of alleged fanatico-mania have recently (1858) occurred, one in Germany and one in New Haven, which, from their striking similarity, as well as from the peculiar religious-psychological phenomena by which they have been attended, should receive the thoughtful attention of all in anywise concerned in the care of the mind. In both instances, the scene was the bosom of a religious society, whose leaders pretended to have received special internal revelations from God. In each case, the "prophets," as those who claimed such revelations called themselves, asserted the right to suspend human laws and even divine precepts in obedience to the mandates which they maintained were revealed in the chambers of their own souls. It is difficult to deny that they were in one sense sincere. However much the delirium in which these visions were heard, was originally of their own creation, it had become, as *delirium tremens* is to the man who at first made himself voluntarily drunk, so wrought into their system as to be convulsive, if not irresistible. In the New Haven case, though the investigation was not conducted by men of the highest skill or most mature experience, this opinion was sanctioned by the verdict of a jury. In the German case, the most experienced psychological physicians united in the position that the delusion, whatever might have been its origin, had finally become involuntary. In the latter case, the parties had joined a sect called the "Apostolic Baptismal Community," which is a sort of composition be-

(*i*) Cited in "Man, Moral and Physical," by Rev. J. H. Jones, a work of great interest in reference to religious insanity and melancholy.

tween the German Anabaptists (Wiedertaufen) and the Irvingites. Their ministry is divided into apostles, prophets, evangelists, shepherds (Hirten), and deacons; all distinguished by a special costume. They pretend to special and miraculous communication of the Divine will, which communications are attended on the part of the recipient by convulsions, which, however they may have been originally feigned, have in many cases assumed the indisputable type of cataleptic ecstasies. In these the patients speak with what are called unknown tongues and prophesy. It so happened that at one of their meetings two of the ministers received, as they declared, a direct supernatural command to kill one of their associates and then to bring him to life again. The first injunction they executed, but failed in the second. The question of their responsibility being submitted to medical examination, Dr. Franz, a very distinguished psychologist, came to the conclusion that their moral sense had become so utterly corroded, as to make perpetual confinement in a madhouse the only discipline to which they could properly be subjected.

Now, to what are these phenomena to be traced? To Christianity, as one class of thinkers is but too ready to say. We apprehend not, for Christianity is emphatically a religion with a *written* and *positive*, as distinguished from an *emotional* and *flexible*, creed. Is it not rather in the departure from the scriptural rule that we may find the origin of these melancholy excesses? Let us trace them, for instance, to their source by those stepping-stones which so often enable us to follow the progress of an error from its inception to its close. Take, for instance, such a case as that of the Rev. David Austen, whose sad history is so touchingly told by Dr. Sprague in his history of the American pulpit. Mr. Austen began as a Presbyterian clergyman, and was marked, not only by his purity of life and his talents, but by his great efficiency as a pastor and influence as a preacher. Gradually, however, the objective side of revelation began to sink in his estimation, and the subjective to become exaggerated. He had visions which overrode the written word. The Lord has been pleased, he said, to deposit in his breast the secret of His coming. This and other revelations Mr. Austen began soon to proclaim with serene confidence and with startling effect. He fixed an actual day, in which he said the event was to take place. Crowds attended, and an excitement followed, which, if it did not cost others their reason, at least cost him his. The fact that the sun set calmly on the predicted day, did not shake his confidence. "The hour on the dial-plate," he said, "may have been mistaken;" but it was none the less true that the sun of the Divine Omniscience poured its infallible light on the disk of his soul, opening to it those mysteries which the sublime imagery of the Apocalypse conceals. The Jews were to form an important element in the approaching catastrophe. They were to collect, he was assured, at New Haven preparatory to their migration to the Holy Land. He proceeded there to buy wharves as a depot for their embarkation. Being a man of considerable property, he obtained credit and bought four times as much land as he could pay for. Then came a crash, which ended with his arrest and imprisonment. When he at last emerged, it was only as a broken-hearted, as well as a deranged, man, whose melancholy office it was to hover,

during the remainder of his sad and long life, as a ghost over the grave of his dead usefulness.

Now, is it saying too much for us to attribute these and similar cases of supposed supernatural inspiration to that introversion of the spiritual and intellectual powers which makes personal emotions and experience the subject first of tender nursing and then of fatuous idolatry? "Come, let us look at this sensibility of mine!" cries the enthusiast, as he lifts it up in the air and ponders over it admiringly. The consequence is, that his perception of his emotions, as all introverted perceptions are, becomes exaggerated and confused. We all have familiar illustrations of this in the way in which when we turn the perceptive powers inward on a lost memory—*e. g.*, the spelling of a forgotten word—the more we think about it, the further off we get. The very fact of introversion seems to paralyze our powers. Suppose, for instance, the public speaker, while in the flow of earnest thought, finds his consciousness suddenly turned in upon himself. The moment he thinks of *himself*, he loses his balance. This is very forcibly expressed by the Rev. C. H. Townsend, late of Trinity Hall, Cambridge, in his very curious work on Mesmerism.(*j*)

"Any admixture of the introspective consciousness detracts from the perfection of one's acquired and habitual motions as much as it spoils the freedom and bold expansion of our thoughts. Of this we may soon convince ourselves. Though generally insensible of the act of breathing, we may, by attention, become aware of the process. What follows? An immediate sense of uneasiness and interruption of that regular motion which seems to go on so well of itself. Again, that winking of the eye, whereby the organ is healthily preserved, becomes a torment if we think about it. Again, too, every musician must have felt that when he has learned to play a piece of music by heart, if he *thinks* upon the direction of his fingers, he plays false. Let him trust to the simple memorial consciousness of his physical being, and he does not err."

It is here that the supernaturalist differs from the Christian. The latter subjects the internal emotion to Scripture; the former subjects Scripture to the internal emotion. The heart is, at best, a dangerous prison-house, whose inmates the former visits to worship, the latter to scourge. The supernaturalist's religion is the product of a morbid self-inspection, which in its turn generates a fanaticism, of which, as a kind of psychical hic-cups, he cannot be cured until he loses his self-consciousness. It is not then in Christianity, which is the religion of a written code, but in a scheme which postpones the written code to theories of human invention, that we are to find the origin of such excesses.

The true test, we apprehend, is to be found in the nature of the consciousness on which the claim to a Divine influence rests. If this consciousness be of the action of God's spirit in producing specific graces, it is in harmony with God's word. If, on the other hand, it amount merely to a vague but arbitrary idea of the presence of God's Spirit without such signs, it is open to grave question. Coleridge strikes at this when he tells us that one of the pheno-

(*j*) London, 1844, p. 20.

mena attending the possessors of fanatical delusions is, "that it is not enough that you grant them a consciousness of the gifts and graces infused, or an assurance of the spiritual origin of the same, grounded on their correspondence with the Scripture promises, and their conformity with the idea of the Divine Giver. No! they all alike, it will be found, lay claim, or at least look forward to, an inward perception of the Spirit itself and of its operating."

Let us reduce this test to practice. Take, for instance, the inspiration of Brigham Young. "It is the Spirit working within me" to do, not this or that specific work of grace, but whatever work, no matter what may be its nature, in which I may happen to be engaged. So it was with the Anabaptist fanatics at Munster. The human will is not subjected to the Divine Spirit, but the Divine Spirit to the human will. The man is not judged by his conformity to the Spirit, but the Spirit by its utterance through the man. What Brigham Young claims is not to act in the Spirit, for if so, his claims could be tested by the written Word, and by the natural law of conscience. But he claims to be the Spirit's organ, and thus to clothe with divine power his human utterances. So it is with the maniac who murders his wife and children under an alleged religious impulse. He bases his claims to the inspiration of the Spirit, not on the gracious affections wrought in his soul, but in the arbitrary pretence of a Divine presence incorporating itself in, and manifesting itself through his own will. Such claims are not in accordance with the Divine word. Spiritual pretensions of this kind, so far from being recognized by Christianity, are a departure from it.

An additional illustration of the truth of these positions is to be found in the late developments of Spirit-Rapping. Precisely to the degree in which the alleged Spiritual developments depart from the dogmas of Christian Revelation, are they associated with mental derangement. As long as the "media" profess to be orthodox, so long do they keep within the bounds of right reason. With them, however, as with the Mormons, deviations from the *moral* law keep pace with deviations from the divine. Thus the cases of "spiritual marriages," of which we have lately heard, have been preceded by alleged supernatural communications, vacating the Scriptural precepts. And a careful examination of the cases of insanity produced by Spiritualism shows that in each instance, *infidelity* became a concomitant.(*k*)

The history of religious insanity in this country goes a great way to fortify the position that it is to a *departure* from the gospel system that most cases of what may be called Dæmonio-mania may be traced. On this point a late writer, whose attention has been particularly given to this topic, thus speaks:—(*kk*)

"Passing over the many instances of such erratic and fanatical extravagances which history records, and to some of which the review before us alludes, we will glance at two recent and notable ones, occurring among ourselves, that we may the better judge whether religion makes men insane, or whether it

(*k*) See on this topic a most able but, in some respects, eccentric volume, under the title, "The Apocatastasis, or progress backwards, a 'new tract for the times,' Burlington, Chauncey Goodrich, 1854," to which the reader is referred for a very effective exhibition of the absurdity of the whole spirit-rapping system.

(*kk*) Relations of Religion to Diseases of the Mind. Phila.: J. W. Moore, 1850.

merely fails, in many cases, to bring them to their right mind; so that it may be said that they continue insane in spite of all that religion can do for them.

"A clergyman, in infirm health, sought to amuse his listless hours by framing a puerile romance, after the manner of eastern fabulists, with names, dates, and localities, bearing no relation to sober history. These writings, in some way, without the author's privity, came into the hands of strangers. In 1826, one Joseph Smith professed to have found, in the town of Palmyra, N. Y., some brass plates inclosed in a box, such as is used for packing window-glass. Of these plates he pretended to be the interpreter. With a stone in his hat, and his hat over his eyes, he dictated what a man, named Harris, wrote. In consequence of some dispute, Harris departed before the interpretation was ended, and one Cowdrey took his place, and completed the 'Book of Mormon.' Smith then avowed himself a prophet, and the founder of a new dispensation, and gathered many disciples, who accompanied him to the State of Missouri, where they established a city and built a temple. We need not pursue their adventures.

"The contents of the Book of Mormon, or the Mormon Bible, were neither more nor less than the selfsame tales of romance which the invalid clergyman amused himself with writing. A large number of persons, however, embraced the delusion; many abandoned a profitable business, some sacrificed large property, and not a few were ruined in soul, body, and estate, by putting their trust in this barefaced imposture.

"It is perfectly obvious, we think, that a mind well informed and established in the received doctrines of the Christian faith, and endued with but very ordinary discernment, would be proof against so bold an imposture. If any intelligent and respectable persons joined the Mormon ranks, that, of itself, shows either a predisposition to insanity, which this fanciful revelation was fitted to develop, but with which religion has no connection whatever; or that there is a deficiency of discernment, or a neglect or abuse of the reasoning powers, or a morbid love of distinction and notoriety, to gratify which they are willing to sacrifice all other interests. If a judicious, faithful parent or Sunday-school teacher had given direction to their inquiries, and furnished their minds with just and systematic, though exceedingly simple, views of the doctrines of revelation, they would have had balances wherewith to weigh the pretensions of the new prophet, and by means of these vanity and falsehood would have been made manifest.

"At a somewhat later period, a man named Miller (a Baptist minister, as it is said) professed to have had a revelation of the precise day on which the second advent of Christ would occur, and when his people would be called to rise and meet him in the air! He and his deluded apostles, or agents, went from town to town and from house to house, 'leading captive silly women,' and imposing upon the credulity of the ignorant. So settled was the conviction of many minds of the truth of his predictions, that they arranged their worldly affairs in reference to it, as an ascertained event, and made no contracts extending beyond the designated day. Prosperous citizens sold their estates, and declined the ordinary avocations of life, that they might give themselves wholly to the business of preparation; and, as the eventful period drew nigh,

many evinced the sincerity of their convictions by providing what they regarded as suitable apparel for an aerial flight, and some actually assembled in groups upon summits which might be supposed most favorable to an early and easy ascension! The dupes of the false prophet were counted by thousands. Scores were committed to insane asylums, who were crazed with excitement, or with disappointment; and many within and without the charmed circle were doubtless left to believe that all revelations are as idle and delusive as Millerism.(*l*)

"We need not say how the plainest Scriptures must have been wrested from their true intent and meaning, nor how deaf an ear must have been turned to the voice of reason and common sense, before the mind could have surrendered itself to such a fancy. There is not a trace of insanity, however, in any stage of the process. It is a simple, voluntary subjection of reason to the influence of imagination or superstition, instead of a childlike submission of all the powers and faculties of body and mind to the revealed will of God. And although we may admit that such delusions have in many instances been the ostensible cause of insanity, as our hospital returns allege, "revealed religion" is no more responsible for them than for paroxysms of *mania-à-potu*. It is because the plain truths of revealed religion were misapprehended, perverted, or rejected, that the imposture succeeded, and the mind was led captive by Satan at his will. It is not strange that a vessel left to itself on a stormy sea should, sooner or later, go to the bottom, or fall into the hands of wreckers."(*m*)

§ 219 (*a*). c^3. *Appeal to the selfish element.*—This topic, which has already been collaterally noticed, opens a very sad view of the human character. In all periods of mental excitement, there is a tendency to claim sympathy from outside. Let us take an illustration of this. A person is struck down by real grief. When in this state the sympathy of friends is attracted by peculiar demonstrations of broken-heartedness. These demonstrations are at first real, but in consequence of the commiseration they receive, are permitted to continue without restraint, and then become at least partially affected. "The pleasure of receiving unwonted sympathy," to recur to a passage from Dr. Carter, already cited, "once tasted, excites a desire for it which knows no bounds; and when the fits have become familiar occurrences, and cease to excite attention, their effect is heightened by the designed imitation of some other disease." There is a strange union in such cases of the voluntary with the involuntary, which partly subjects craft to convulsion, and partly convulsion to craft. But after a while, particularly if the *petting* system on the part of friends continues, the disease becomes chronic, and degenerates into hysteria. Even then there is cunning employed in the resort to new devices by which fresh sympathy can be collected when the old stock is exhausted.

So also in periods of popular excitement, either on religion or any other prominent topic. Let the love of attention be appealed to—let public interest be drawn to persons exhibiting certain symptoms—and these symptoms will be assumed, until at last hypochondriasis or hysteria follows. Intense self-

(*l*) See an essay on this point, in 1 Am. Journ. of Insanity, 249.

(*m*) Relations of Religion to what are called Diseases of the Mind. Philadelphia: J. W. Moore, 1850.

consciousness, the power of imitation, and the desire to excite interest, generate this form of disease, which, in its turn, generates a refined and elegant but misanthropic selfishness.

"There is one perversion of moral feeling," says Archdeacon Stopford, in a late pamphlet, "which always exists in hysteria, and more than anything else may make us doubt whether hysteria be chosen of God as a means of conversion, and that is *selfishness*. Now, I protest against being thought to imply that all persons who are hysterical are constitutionally selfish. I have known the contrary in several instances, and I know the effect in such cases of appealing to unselfish feeling; but it will be easily understood from the foregoing account, that the predominance of the idea of 'self' as the object of the mind is of the very essence of the disease, and it is the necessary consequence of this, *if allowed to proceed*, to engender selfishness; the woman who *habitually indulges* hysterical feeling, becomes the most selfish and unsympathetic being in the world, except one—the man who indulges and cherishes hypochondriacal feeling.

"I must suggest caution in coming to an opposite conclusion on apparent evidence to the contrary in mild forms of hysteria in its *incipient stages*. I struggled long against admitting that the predominance of the idea of 'self' in hysteria always contains the germ of selfishness; but I had to admit the conviction, that this is true. As hysteria grows by habit or indulgence, all its evils become apparent; but a trained observer detects the germs in its origin."(*n*)

§ 219 (*b*). b^2. *By constitutional idiosyncrasies.*—This topic has been previously noticed.(*o*)

§ 219 (*c*). (*c.*) *Fanatico-mania as a defence.*

Crimes committed under the influence of fanatical impulses, such as those

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(*n*) In connection with the above, it is well to call attention to the following remarks of a very sagacious and experienced physician, Dr. Francis: "In at least three cases out of four, I have found hysteria associated with uterine derangement, and the restoration of the menstrual function to its healthy state has proved the precursor of the removal of the hysterical annoyance." Hysteria, again, may manifest itself chiefly by disorder of the mental faculties, and the moral feelings and emotions. "The mental affections," observes Dr. Copeland, "connected with hysteria may be referred, 1st, to certain states of monomania, among which excited desire, amounting in some cases to nymphomania, may be enumerated; 2d, to *ecstasis* and mental excitement, in some cases of a religious nature, in others of different descriptions; 3d, to a state of somnambulism; 4th, to a form of delirium, generally of a lively character, with which various hysterical symptoms are often conjoined. "Hysterical females are not merely capricious or whimsical, but they often become enthusiastic for a time in the pursuit of an object, or in cherishing an emotion by which they have been excited. In many such cases the nervous excitement and vascular turgescence of the uterine organs determine the character of the mental disorder; elevating certain of the moral sentiments, or of the intellectual manifestations, to a state of extravagance, passing in some instances into delusion or monomania. Many cases of puerperal mania are merely extremes of the hysterical disorder of the moral and intellectual powers or states of the mind. All these more extreme forms of mental affection are observed only where, in connection with much local or uterine irritation, there is a great deficiency of nervous energy generally, and of mental power in particular; or where, with such deficiency, there has been much injudicious culture, or perversion, or improper excitement of the imagination. Females sometimes become passionately attached to an object, and this passion may advance even to nymphomonia or monomania."

(*o*) *Ante*, §§ 1–83, 107, 211.

which have been just mentioned, may be considered in the same light as crimes committed in a state of drunkenness. In the latter case, an individual who knowingly takes intoxicating liquor, cannot defend himself on the fact of guilt by proof of his intoxication. It is otherwise, however, when the guilty act is the immediate result of *mania-a-potu*, in which case the malady has assumed the shape of a substantive and permanent type, and like any other delirium, is to be treated as destroying responsibility.(*oo*) In like manner, the voluntary adoption of a religious belief which includes among its incidents a known violation of law, does not relieve the party who commits such violation of law under such influences, from responsibility. If, however, he sink into consequential delirium, and then commit the crime, he is irresponsible.(*p*)

(9.) *Politico-Mania.*(*q*)

§ 220. "Psychical infection," to use the expressive term of Ellinger, is peculiarly operative in political relations. Attempts at insurrections, acts of lawlessness against government, murderous assaults upon public officers, become at times epidemic. Marc illustrates this by the cases in which public conspicuous crimes have become contagious; *e. g.*, arson and murder. The tendency to seditious violence is generated by an oppressive government bearing on temperaments tainted with just such an infection.

§ 221. "Certain forms of government," says Dr. Rush, "predispose to madness. They are those in which the people possess a just and exquisite sense of liberty, and of the evils of arbitrary power against which complaints are stifled by a military force. The conflicting tides of the public passions, by their operations upon the understanding, become in these cases a cause of derangement. The assassination of tyrants and their instruments of oppression is generally the effect of this disease. That madness is thus induced, I infer from its occurring so rarely from a political cause in the United States. I have known but one instance of it, and that was of a gentleman who had been deranged some years before, from debt contracted by extravagant living. In a government where all the power of a country is representative and elective, days of general suffrage, and free presses, served, like chimneys in a house, to conduct from the individual and public mind all the discontent, vexation, and resentment which have been generated in the passions by real or supposed evils, and thus to prevent the understanding being injured by them. In despotic countries, where the public passions are torpid, and where life and property are secured only by the extinction of the domestic affections, madness is a rare disease. Of the truth of this remark, I have been satisfied by Mr. Stewart, the pedestrian traveller, who spent some time in Turkey, also by Dr. Scott, who accompanied Lord M'Cartney in his embassy to China, and by Mr. Joseph Rexas, a native of Mexico, who passed nearly forty years of his life

(*oo*) See *ante*, §§ 62–70.

(*p*) See an essay on this point, 3 Am. Journ. of Insan. 166. See also for a report of Thom's case, Ibid. 170.

(*q*) See on this point Influence des Evénemens et des Commotion Politiques sur le Développement de la Folie, par le Docteur Belhomme, Paris, 1849; and a review of the same in Journ. Psych. Med. vol. iii. p. 31.

among the civilized but depressed natives of that country. Dr. Scott informed me that he heard of but a single instance of madness in China, and that was in a merchant who had suddenly lost £100,000 sterling by an unsuccessful speculation in gold dust."(*r*) With regard to Mexico and China, however, recent observations show that these remarks should be greatly qualified.

VIII. Mental unsoundness as accompanied by prostration.

1st. *Idiocy.*(*s*)

§ 222. "Idiocy," says Dr. Ray, "is that condition of mind in which the reflective, and all or a part of the affective powers, are either entirely wanting, or are manifested to the slightest possible extent."(*t*) The intellectual and moral faculties, in cases properly falling under this head, are almost null, the effect being in most instances congenital, and arising in all cases from want of development, not from perversion of the functions. And the development of the senses is almost equally defective.(*u*) The power of speech does not exist, or exists only so far as to enable the patient to articulate a few unintelligible monosyllables. This incapacity depends sometimes on the imperfect conformation of the organs of speaking, sometimes upon those of hearing, but more frequently on a deficiency in or want of the powers of imitation; so that even when the hearing and the speech are both entirely mature, the patient remains unable to do more than in the one case to show his knowledge of the existence of sound, and in the other to give utterance to noises not above, if equal to, those of the brute creation. Taste and smell are equally imperfect. In many cases there is an inability to perceive odors, and in most nothing but the coarsest discrimination in the selection of articles of food. Wallowing in personal filth, devouring even excrement with apparent avidity, indisposition to eat at all unless food be placed directly before the eye, drinking urine with as little appearance of distaste as water, are incidents one or more of which are to be found in almost every case of idiocy. And the same low grade of sensibility and of flexibility is found in the purely physical system. The nerves are almost torpid. Limbs sometimes have been amputated without apparent pain, and Esquirol even tells us of labor having been undergone without the patient being conscious of the fact or of its meaning. The arms are frequently of unequal length, and misshapen; and the limbs generally are crooked and feeble. A careless and broken gait distinguishes them in most cases. Even the eyes are defectively hung, and seem incapable of poising themselves at a right level.

(*r*) Rush on the Mind, pp. 66, 67.

(*s*) Krahmer, Handbuch der Gericht. Med. Halle, C. A. Schwetschke, 1851, §§ 110, 125. Siebold, Lehrbuch der Gericht. Med., Berlin, 1847, § 200.

See on this point the following works: The Principles of Medical Psychology, being the outlines of a course of lectures by Baron von Feuchtersleben, M. D., Vienne, 1845; translated from the German by the late H. Evans Lloyd, Esq.; revised and edited by G. B. Babington, M. D., F. R. S., &c., London; printed for the Sydenham Society, 1847, p. 354. Morel, sur les Maladies Mentales, vol. i. p. 52, Paris, 1822.

And see a very remarkable report by Samuel Kneeland, Jr., M. D., read before the Boston Soc. for Med. Improvement, Jan. 13, 1851; Am. Journ. of Med. Science, 1851; and a review of the same Journal of Psychological Med. vol. iv. p. 366.

(*t*) Ray, § 51.

(*u*) Esquirol, 466.

And in the lower class of cases there is sometimes so great a defectiveness of vision as to prevent the patient from perceiving the most obvious objects. And even when the powers of vision and of motion exist, the intellectual powers are sometimes so attenuated as to make attempts to reach a desired point entirely abortive, though there be entire muscular power for such a purpose.

§ 223. While, however, the reasoning powers are almost entirely defective, there is sometimes a perceptible, though unequal, development of the moral sentiments. Self-esteem,(*v*) love of approbation, religious awe, sometimes assume a supremacy over the system, which is the more marked because it is checked by no countervailing qualities. Dr. Rush tells us of an idiot who spent his life in little acts of benevolence to others, though in the dispensation of them, as well as in all other points in his life, he showed no reasoning powers whatever. Religious veneration and awe is sometimes developed to an exaggerated degree, expended upon the most unnatural objects. Vanity—such as that which distinguishes some branches of the brute creation—finds with them a pregnant place. And Esquirol gives us numerous instances in which the talent for thieving, and that to a very remarkable extent, was found associated with entire vacuity of mind in all other relations. The same observation applies, though in a much less marked extent, to the sexual propensities.

§ 224. The following useful classification of these beings is made by Mr. S. G. Howe:—

"IDIOTS of the lowest class are mere organisms, masses of flesh and bone in human shape, in which the brain and nervous system have no command over the system of voluntary muscles; and which, consequently, are without power of locomotion, without speech, without any manifestation of intellectual or affective faculties.

"FOOLS are a higher class of idiots, in whom the brain and nervous system are so far developed as to give partial command of the voluntary muscles; who have, consequently, considerable power of locomotion and animal action, partial development of the intellectual and affective faculties, but only the faintest glimmer of reason, and very imperfect speech.

"SIMPLETONS are the highest class of idiots, in whom the harmony between the nervous and muscular systems is nearly perfect; who, consequently, have normal powers of locomotion and animal action, considerable activity of the perceptive and affective faculties, and reason enough for their simple individual guidance, but not enough for their social relations."(*w*)

§ 225. It does not take the case out of the definition of idiocy that some particular faculty has been saved from the general wreck. This is often the case, particularly with music. Thus there is at present in the Salpêtrière a girl idiotic to an extreme degree, who does not speak, and cannot even dress herself. However, her keeper has recently discovered in her a decided taste

(*v*) Ray, § 53.

(*w*) Second Report of the Legislature of Massachusetts, by the Commissioners appointed to inquire into the condition of Idiots within the Commonwealth, by S. G Howe, pp. 147. Boston, 1848. Senate Doc.

for music. She often can repeat faithfully a whole passage of music played or sung to her only once; even if the passage is left incomplete, in repeating it she will terminate it in the right key and tone. A first-rate performer on the piano was brought to play to her, and her transports amounted almost to frenzy. At certain passages of rapid transitions from flats to sharps, she uttered cries of transport, and commenced biting her fingers to calm her emotions. She is an immense eater, and greedily snatches at fruit; but the moment she hears the instrument she stops until the music has ceased.

Mr. Howe mentions an idiot who had an astonishing power of reckoning. "Tell him your age, and he will in a very short time give you the number of minutes."

§ 226. The following statement by Esquirol will throw much light on this phase of mental unsoundness: "With each case of idiocy which I have published in this chapter I have also given the admeasurements of the head taken during life. By bringing them together, we may compare the means with the results obtained by my young confrères; time will not permit me to do it. For those who are fond of this kind of investigation, I subjoin a table of the mean results of admeasurement of the head taken from a woman in the enjoyment of good health, and from plaster casts, taken after their death, in the case of thirty-six insane women, seventeen imbeciles, and seventeen idiots. In the case of three idiots, whose heads were very small, the admeasurements were taken from the crania.

TABLE OF CRANIAL ADMEASUREMENTS.

	Circumference.	Antero-posterior curvature.	Antero-posterior diameter.	Transverse diameter.	Totals.
Women in a state of health	21.87 in.	13.30 in.	6.98 in.	5.29 in.	47.44 in.
Insane . . .	20.82	11.50	6.96	5.67	44.95
Imbeciles . . .	20.19	11.49	6.69	5.63	44.
Idiots . . .	19.92	11.26	6.85	5.39	43.42
Idiots—Microcephalous .	15.07	7.51	4.88	4.17	31.63

"From this table we learn: 1st. That the circumference of the head, according to admeasurements taken among women enjoying the use of their reason, from insane women, imbeciles, and idiots, diminishes in an almost equal proportion from the women in the enjoyment of usual health to the idiot, deprived even of instinct. 2d. That the fronto-occipital curvature diminishes in a remarkable degree from the women in sound mind to the insane female, whilst no variation is noticed in the insane person to the imbecile, and a difference of but six millimetres between the latter and idiocy. 3d. That the fronto-occipital diameter is the same in the case of the women enjoying the use of their reason and the insane women, and that there is a diminution of but six millimetres between the insane person and the idiot; while the difference is enormous on passing to the lowest degree of idiocy. 4th. That the bi-temporal diameter is more considerable in the case of the insane women, and even the imbecile and idiot, than in that of a woman possessing the ordinary degree of intelligence. 5th. That if we suppose that the sum of those four admeasure-

ments express the volume of the brain, it follows that the volume of this organ diminishing in the same proportion with the intellectual capacity, that of the cranium would be the expression of this capacity."(*x*)

§ 227. "In that remarkable obliteration of the mental faculties," says Abercrombie, "which we call idiocy, fatuity, or dementia, there is none of the distortion of insanity. It is a simple torpor of the faculties in the higher degrees, amounting to total insensibility to every impression; and some remarkable facts are connected with the manner in which it arises without bodily disease. A man mentioned by Dr. Rush was so violently affected by some losses in trade, that he was deprived almost instantly of all his mental faculties. He did not take notice of anything, not even expressing a desire for food, but merely taking it when it was put into his mouth. A servant dressed him in the morning, and conducted him to a seat in the parlor, where he remained the whole day, with his body bent forward and his eyes fixed on the floor. In this state he continued nearly five years, and then recovered completely and rather suddenly. The account which he afterwards gave of his condition during that period was, that his mind was entirely lost, and that it was only about two months before his final recovery that he began to have sensations and thoughts of any kind. These at first served only to convey fears and apprehensions, especially in the night-time. Of perfect idiocy produced in the same manner by a moral cause, an affecting example is given by Pinel. Two young men, brothers, were carried off by the conscription, and in the first action in which they were engaged one of them was shot dead by the side of the other. The survivor was instantly struck with perfect idiocy. He was taken home, where another brother was so affected by the sight of him, that he was seized in the same manner; and in this state of perfect idiocy they were both received into the Bicêtre. I have formerly referred to various examples of this condition supervening on bodily disease. In some of them the affection was permanent, in others it was entirely recovered from."(*xx*)

(*x*) Esquirol on Insanity, Lea & Blanchard, Philadelphia, 1845, p. 473.

(*xx*) Abercrombie on the Intellectual Powers, pp. 273, 274. As the different races of men, says M. Renaudin, have a characteristic physiognomy, and as individuals reflect in their features the most salient points of their moral idiosyncrasy, so the idiot in this respect presents a peculiar stamp, which the least discerning can recognize. It is a type which can be distinguished in all its varieties, even when the external conformation of the head does not differ much from the normal proportions. But that which strikes us most in this class is the want of symmetry, not only in the encephalic organ, but also in the other parts of the body; and if sometimes the physiognomy is deceitful in this respect, the other parts of the organism soon reveal to us the want of co-operation indispensable to the complete development of man. It is rather by an observation of the whole constitution, than of its separate parts, that the essential characters of this infirmity are to be detected. Idiots generally deceive in their age, which always offers at the different periods of their existence a ridiculous admixture of decrepitude and puerility. The hypertrophy of certain glands, the flaccidity of the tissues, malformation of external essential organs, absence of all proportion in the length of their limbs, difficulty and uncertainty in their movements, which are almost convulsive, the retraction of certain tendons, an arrest of development in the figure and in muscular contractility—such are the general appearances that characterize the idiot in his external conformation. His mode of living is in keeping with this degradation of form, and furnishes us with the means of perceiving some of the relations existing between the physical and the moral. His language is scarcely rudimentary. He does not think, has nothing to say, and nothing in him calls for the vocal motion. When, however, this *mutism* is not idiopathic, he can be made to articulate certain words, and his

§ 228. Cretinism finds no place in the United States, and cannot, therefore, claim here extended consideration.(*y*)

2d. *Imbecility.*(*z*)

§ 229. *Imbecility* has perhaps as many degrees as it has victims, and yet it

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movements can be placed under some moral control; but in undergoing this external influence he still rests faithful to that automatism which is his principal characteristic. It is always a material and instinctive impulse that controls. The idiot shows, in the satisfying of his wants, a brutality in close connection with the irregularity of all his actions, and the want of balance of his functions, which all coincide with personal instinct. He yields himself to onanism with a revolting cynicism; he eats with a voracity that defies everything, and which proves how obtuse his sensibility is, although he in fact suffers more than any other the unhappy effects of climacteric changes. Finally, in spite of the violence of certain appetites, the functions are so incompletely performed, that we must not be surprised to see these unfortunates very short-lived. If, on the one hand, nothing has wasted life, nothing, on the other hand, has vivified it, and one can easily conceive that it is extinguished, since it is without essential nourishment and without object.

The psychical element plays no part in such an organization. External influence is unable to develop it, since the somatic element is not in a condition to receive it; and as to spontaneousness, one can but with difficulty perceive the germ. So, when these degraded beings, impelled by a brutal instinct, or obeying another's will whose instrument they are, commit a culpable act, all the world agree in not imputing to them any moral responsibility. (See Etudes Psychologiques sur l'Alienation Mentale, par L. F. E. Renaudin, p. 170, Paris, 1854.)

Idiocy, says M. Falret, cannot, strictly speaking, figure amongst the forms of insanity. In this degraded state man is fallen below the brute; he does not even possess the instinct of self-preservation. It is necessary for charity not only to bring him the food required for his nourishment, but to place it in his mouth, and to protect him against the mischievous influences which surround him, and against all destructive causes. Instead of language, the exclusive appendage of man, since it is the expression of thought in all its development, the complete idiot only utters certain harsh, savage inarticulate sounds. Instead of that firm, assured step which executes the exact command of the will, the rough, disorderly movements of idiots seem only phenomena of irritability. Besides, they are often immovable, bent down towards the ground, and only execute a kind of rocking movement, balancing forward and backward, to the right and to the left. Without doubt this is the extreme degree of idiocy, for there are idiots less degraded in their organization, and consequently in their manifestations; but, unfortunately, to this feeble development of the intelligence is too often joined either an absolute want of character, or low tastes, incitations to a brutal lasciviousness, to robbery, pyromania, and ferocity, which they turn against themselves and against inanimate objects. (See Leçons Cliniques, de M. Falret, p. 243, Paris, 1854.)

(*y*) The student, however, who seeks for particular information as to its character, is referred to the following treatises: Etudes des Maladies Mentales, de M. Morel, tome i. p. 64, Paris, 1854. Gedanken über Kropf und Cretinismus als Beitrag zur Homatologie und Homonymie. Von Joh. Mich. Huber, Geritchswundarzt zu Ried in Tyrol. Mit einer Abbildung. (Medicin. Jahr. des k. k. österr. Staats, Mai.) Ueber den Cretinismus in Canton Waadt in der Schweiz. von Dr. H. Lebert, prakt. Arzt zu Paris. (Archiv für physiologische Heilkunde VII. B. 6 Heft.) Notice of a very remarkable disease analogous to Cretinism. By Hugh Norris; Med. Times, Jan. 1848. Les goiteux et les cretins de la Savoie; Annales de Thérapeutique, 1848. Mais, Ueber den Cretinismus in grossen Städten und dessen Aenlichkeit mit dem in den Alpen. Von Dr. Behrend. (Gaz. des Hôpitaux, 1848. Nos. 6 and 7.) Cretinismus als genetisch—contagiöse Endemie in Neudenau, &c. Bad. Annalen d. Staats-Arzneikunde, 1846. Esquirol, Mental Maladies, &c., 481–2. Sonsburg, ueber den Cretinismus. Wurzb., 1825. Haüflser, ueber die Beziehung des Sexualsystems zur Psyche ueberhaupt und zum Cretinismus ins besondere. Würzb., 1826. See also a very valuable report on this point, by Samuel Kneeland, jun., M. D., read before the Boston Soc. for Med. Improvement. Jan. 13, 1851. Am. Journ. of Science, 1851; and a review of the same in Journal of Psychological Med., vol. iv. p. 366. See also "A Physician's Holiday, or a Month in Switzerland in the Summer of 1848. By John Forbes, M. D., F. R. S," London, 1848, in which the management of the Cretins is fully described.

(*z*) Siebold, Lehrbuch der Gericht. Med. Berlin, 1847. § 200. L. Krahmer, Handbuch der Gericht. Med. Halle; C. A. Schwetschke, 1851. § 125. Etudes Cliniques des Maladies Mentales, par M. Morel, tome i. p. 39, Paris, 1854.

becomes the task of psycho-forensic medicine to assign a line of demarcation within which the judge is to declare the responsibility of the agent to cease to exist. But this problem is only so far capable of solution as we are enabled to detect and recognize the existence of imbecility in general, and to estimate its relation to a given action; the personal discretion of the tribunal must always have considerable scope in all cases near the boundary line. In order to obtain as firm a common ground as possible, it becomes advisable to subdivide and classify imbecility, particularly where it depends upon particular diseased conditions capable of ascertainment and distinction. In this respect we distinguish, in the first place, *imbecility with*, and *imbecility without concomitant insanity*.

§ 230. *Imbecility with concomitant insanity* presents the following subdivisions :—

1. The original imbecility which has lapsed into unsoundness of mind. The nature of the latter will determine in the first instance, in how far the patient is amenable to the penal laws in a given case; but the fact of imbecility will always favor the psychological arguments in favor of irresponsibility.

2. Imbecility supervenes upon the course of a mental disorder, and manifests itself particularly in the form of a failure of memory. The question of responsibility will depend, in this case, upon the same principles as stated in the last preceding head.

3. *Specious imbecility*, as in the case of *melancholia attonita*, and as such will receive but little attention at the hands of the forensic physician.

4. *Imbecility with confusion of mind.* This is found side by side with a failure of memory, and a more or less conspicuous incoherence and inconsistency of the perceptions, and a certain agility and activity of the super-physical life. It is either a primary or secondary form, and in the *former* case it may be consequent upon severe diseases of the brain, epilepsy, intemperance, sexual excesses, and senility;(*zz*) in the *latter* case it may arise from the various forms of mental unsoundness, and may be considered as always excluding the idea of moral responsibility.

5. Imbecility remaining after the patient has recovered from an attack of insanity. It will never contain a sufficient reason for suspending the responsi-

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(*zz*) In senility its effects are touchingly illustrated in the following passage, from the life of the late Wm. Jay :—

At length, however, this prop fails him. After thirty years of uninterrupted domestic happiness, this excellent and amiable woman was stricken with an extraordinary malady, resulting in such a prostration of mental and physical powers, as rendered her, from that time forward, no longer the support of her husband in his trials, but the object of his deep solicitude and tender care. It had become her almost invariable habit to call things by names the reverse of what was right, and of what she herself intended :—

"She spoke of a drop of bread, and a thin bit of water; she called the black white, and the white black; the cold heat, and the heat cold; preaching was hearing, and hearing was preaching; in the morning she wished you good evening, and in the evening good morning."

It appears that she herself was conscious of her mistakes, but without the power to correct them. We have known of similar cases, but the solution of them is beyond our reach. They would form a physiological problem which might have exercised the ingenuity of Lord Brougham, Abercrombie, or Brodie.

bility of the agent, but may often deserve the attentive consideration of the judge in the moulding of the sentence.(*a*)

§ 231. *Imbecility without insanity* has several gradations, all being separate denominations; the highest degree is called *idiocy*. Next to this is *imbecility* proper; *dulness, feebleness, stupidity,* are inferior grades of a stunted growth of mind. The reasons which, in the higher stages, exclude understanding and self-control are the more potent, as no education has been imparted here, or, if imparted, has produced no effect. The lower stages do not justify the physician in casting a doubt upon the existence of legal responsibility. They are for the consideration of the judge alone, and are interesting in this point of view, because simpletons and fools often have a touch of malice, brutality, ill-will, and mischief in their dispositions, and may be led, by teasing and ill-treatment, to vindictive hatred, revenge, and violent outbursts of anger.

§ 232. The Emperor Napoleon hits upon a very happy illustration of the distinction between two of the above mentioned phases. In one of his conversations with Las Casas, he said that there was such a thing as "*folie innocente,*" and "*folie terrible*"—a fatuous state which is safe, and one which is dangerous. A fatuous person, "*un fou*" of the first kind, the Emperor describes as reasoning with the proprietor of a vineyard in which he was trespassing, thus: "Why, here are we two: the sun sees us both; therefore, I have a right to eat grapes." The "*fou terrible,*" he proceeds, "is he who

(*a*) In some circumstances, says M. Renaudin, the idiotic germ is less prominent, nothing tends to reveal it in infancy, and the early years lead us to expect a normal ulterior development. But it may happen that a severe disease, deeply affecting the organism, supervenes, or the subject may have been submitted to an intellectual labor above his powers, and at a given moment an arrest of development, as much in the physical as in the moral system, shows itself. This condition sometimes supervenes even without the action of any apparent cause and then we can only attribute it to the influence of this idiotic principle. Instead of pursuing the course marked out by the laws of nature, it is arrested at a point of development, rarely transitory but most generally permanent, which is known everywhere under the name of imbecility. The physical organization in imbeciles offers less abnormities than that of idiots; the body is straighter, and if the physiognomy is less repulsive and shows a little more regularity in its features, it exhibits but little animation. The feelings are seen in their rudimentary state in this class of beings; they are susceptible of a more advanced education, and when they belong to a family of easy circumstances, they can be made to submit themselves to the habits of a regular life. The impressions they receive are sufficiently durable, providing they do not overstep a sufficiently restricted limit. They are susceptible of a certain amount of memory, which in some cases reaches a very remarkable height. Sometimes the ideas they acquire are very limited and their intellectual spontaneousness is on a footing with the small development of their physical spontaneousness. Although less stupid than the idiot, automatism is the characteristic trait of the imbecile. He never gives the impulse, he receives it; and it is amongst the imbeciles that an asylum especially finds valuable aids in its internal service. If the effective sentiments are but feeble, the instinct of the feeling of personality shows itself perhaps in an absurd vanity, or in a savage egotism in the satisfaction of wants whose stimulus is ordinarily very energetic. Hence an excessive irritability that readily degenerates into mania, or a malicious cunning, in order to obtain the thing coveted. The imbecile has but few ideas; and as he knows but little abandons himself to his impulses when fear does not control him. But little capable of distinguishing between good and evil, he may be a dangerous instrument in criminal hands. The imbecile commits a murder with coolness, shows often a great depravity of tastes, and it is only an exception, if you can perceive in him any rudimentary traces of the moral sense. It is at this point that his intellectual aptitude ceases, and we can easily understand how a like condition necessarily excludes all responsibility.—*Renaudin sur l'Alienation Mentale*, p. 173, Paris, 1854.

cuts off the head of a man whom he found sleeping under a hedge; then hid himself behind it, in order to witness the surprise—*embarras*—of the body when waking."

"Of these half-witted persons," remarks Dr. Mayo, "the former indulges a love of grapes, the latter a love of bloodshed: the process of thought in each case is that of a *deficient* understanding, which could neither prevent the one from stealing grapes, nor the other from committing violence under the influence of opportunity, but rather forwarded the crime by suggesting excuses." "An idiot," says Dr. Hainsdroff, "in the Hospital of Salzburg, appearing to be singularly insusceptible of fear, an experiment of an appalling character, and of appalling consequences, was made upon him, as a means of putting his susceptibility to the test. It was proposed to make the impression upon him that he saw a dead man come to life. A person accordingly laid himself out as a corpse, enveloped in a shroud; and the idiot was ordered to watch over the dead body. The idiot perceiving some motion in the corpse, desired it to lie still; but the pretended corpse raising itself, in spite of this admonition, the idiot seized a hatchet, which unluckily was within his reach, and cut off first one of the feet of the unfortunate counterfeit, and then, unmoved by his cries, cut off his head. He then calmly resumed his station by the real corpse:—a strong illustration of the dangerous hypothesis of harmlessness, as connected with this state of mind."(*b*)

§ 233. "Dr. Rush says," we quote from Dr. Ray, "that in the course of his life he has been consulted in three cases of moral imbecility; and nothing can better express the true character of their physiology, than his remark respecting them. 'In all these cases,' he observes, 'there is probably an original defective organization in those parts of the body which are occupied by the moral faculties of the mind'—an explanation which will receive but little countenance in any age that derives its ideas of the mental phenomena from the exclusive observation of mind in a state of acknowledged health and vigor. To understand these cases properly, requires a knowledge of our moral and intellectual constitution, to be obtained only by a practical acquaintance with the innumerable phases of the mind, as presented in its various degrees of strength and weakness, of health and disease, amid all its transitions from brutish idiocy to the most commanding intellect.'"(*c*)

(*b*) Mayo on Medical Testimony in Lunacy, pp. 93, 94.

(*c*) Ray on Insanity, p. 90.

In the course of clinical lessons delivered at Bicêtre, M. Ferrus gives an account of the different intellectual debilities in a way that throws a strong light upon these difficult questions:—

Between idiocy and dementia, he says, there is a most striking analogy. In both cases, human intelligence is abolished; it no longer possesses the means of perfectibility. But the analogy ceases in examining the producing causes. With the idiot, deprivation of reason is congenital; the demented, on the contrary, arrives progressively at the total loss of his faculties. Dementia is the abolition of the intellectual faculties, both moral and instinctive, supervening after the period of puberty: it is a kind of debility which appears either in an insensible manner or with the rapidity of lightning—breaking, more or less, all the connections which unite the man with the rest of the world.

The characters of dementia are sufficiently decided, so as not to be confounded with those of other mental affections. In idiocy, the faculties of the mind have never existed, or have been destroyed before their complete development. In dementia, you may

3d. *Dementia.*(*d*)

§ 234. "This form of Insanity," says Dr. Ray, "is attended by a general enfeeblement of the moral and intellectual faculties, which were originally sound

(*d*) L. Krahmer, Handbuch der Gericht. Med. Halle, C. A. Schwetschke, 1851, § 125; Siebold, Lehrbuch der Gericht. Med., Berlin, 1847, § 200; and also see *post*, § 233, *n* (*c.*)

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still possibly see some traces of an intelligent past; but it betrays in vain its past perfection: it is stamped forever with the seal of feebleness and nullity, and destined to be extinguished by a kind of exhaustion of nervous influence.

Stupidity consists in an accidental, sudden, complete abolition of the intellectual, moral, and instinctive faculties, as well as of the movements. It has for its cause a sudden and violent physical or moral shock: it is distinguished from dementia by the rapidity of its appearance, the intensity of its symptoms, their frequent remission and exacerbation, and especially by the possibility of a complete cure.—*Ferrus, leçons cliniques faites à Bicêtre.*

Dementia, says Esquirol, is characterized by the enfeeblement of the sensibility, intelligence, and will. Incoherence of ideas; want of intellectual and moral spontaneousness are the signs of this affection. The man suffering from dementia has not the faculty of properly receiving objects, of noticing their relations and comparing them, of preserving a complete remembrance of them; whence results an impossibility of reasoning correctly. In dementia, he adds, the impressions are too feeble; it may be because the sensibility of the organs, or of the sensations, is weakened; or it may be because the brain itself has not sufficient power to perceive and retain the impression that is transmitted to it. From this it necessarily results that the sensations are languid, obscure, and incomplete. Individuals in dementia are not susceptible of a sufficiently strong attention—objects only strike them in an obscure and false manner: they can neither compare nor associate ideas, nor abstract them; the organ of thought has not sufficient energy—it is deprived of the tonic force necessary to the integrity of its functions. Then the most incongruous ideas succeed each other, following each other without connection and without motive: the matter is incoherent; the patient repeats words and entire phrases without attaching to them distinct sense; he speaks, as he reasons, without any consciousness of what he is saying.—*Esquirol de la demence*, p. 221. The demented, in spite of the general decrepitude of his organic functions, is not freed from the laws of action and reaction. There are periods in his existence when the old phenomena of possession appear to be renewed. When he is agitated, he cries and tears his clothes, and may, perhaps, perform some dangerous actions. The hallucinations are often sufficiently intense to provoke veritable attacks of fury; but this rage lasts but a little while; it is appeased like the anger of a child.

The demented from this excited state falls back into his ordinary automatonism. He has no more any wishes, hate, or tenderness; he holds the objects formerly so dear to him in the greatest indifference; he sees his relations and friends without pleasure, and leaves them without regret. He is not disquieted by any privations imposed on him; and pleasures obtained for him gratify him but little. What goes on around him does not affect him. The events of life are as nothing to him, since he is unable to attach any remembrance, any hope to them: indifferent to everything, nothing gratifies him. He laughs and plays whilst other men are afflicted, and weeps when all the world is satisfied. If his position discontents him, he does nothing to change it. His determinations are vague and uncertain: he is a perfect automaton, that has not sufficient energy to be ungovernable: his isolation is the more necessary, as he yields himself to acts which are the result of the abolition of conscience, and as he becomes but too often the sport and the victim of those who wish to take advantage of his condition.—See *Morel sur les Maladies Mentale*, tome i. p. 402. Paris, 1852.

Dementia, according to Falret, is a period, and not a true form of mental unsoundness. Amongst the demented, who are only the chronic insane arrived at an advanced stage of the disease, there are some who are agitated like maniacs, and some who remain motionless, like hypomaniacs. There are others in whom are seen some predominant ideas—resembling, in this respect, monomaniacs; but it is difficult to classify them. If they speak, their unconnected words have no relation, and convey no sense; often even this is not due to incoherence alone, but to the absence of ideas: it is a flow of words without thoughts.

If they remain quiet and silent, their countenances express neither concentration or passion, but dulness and stupidity; they seem, at least in extreme cases, to be

and well developed, in consequence of age or disease, and is characterized by forgetfulness of the past, indifference to the present or future, and a certain childishness of disposition. The apparent similarity of this state to that of imbecility or idiocy, renders it necessary that they should be accurately distinguished; for nothing could be more improper or unjust than to view them merely as different shades of the same mental condition. Idiocy and the higher degrees of imbecility are congenital, or nearly so, and consist in a destitution of powers that were never possessed."(*e*)

"Dementia," continues the same high authority, "is distinguished from general mania, the only other affection with which it is liable to be confounded, by characters that cannot mislead the least practised observer. The latter arises from an exaltation of vital power, from a morbid excess of activity, by which the cerebral functions are not only changed from their healthy condition, but are performed with unusual force and rapidity. The maniac is irrational from an inability to discern the ordinary characters and relations of things, amid the mass of ideas that crowd upon his mind in mingled confusion; while in dementia the reasoning faculty is impaired by a loss of its ordinary strength, whereby it not only mistakes the nature of things, but is unable, from want of power, to rise to the contemplation of general truths. The reasoning of the maniac does not so much fail in the force and logic of its arguments, as in the incorrectness of its assumptions; but in dementia the attempt to reason is prevented by the paucity of ideas, and that feebleness of the perceptive powers, in consequence of which they do not faithfully represent the impressions received from without.

"In mania, when the memory fails, it is because new ideas have crowded into the mind, and are mingled up and confounded with the past; in dementia the same effect is produced by an obliteration of past impressions as soon as they are made, from a want of sufficient power to retain them. In the former the mental operations are characterized by hurry and confusion; in the latter by extreme slowness and frequent apparent suspension of the thinking process. In the former, the habits and affections undergo a great change, becoming strange and inconsistent from the beginning, and the persons and things that once pleased and interested, viewed with indifference or aversion. In the latter, the moral habits and natural feelings, so far as they are manifested at all, lose none of their ordinary character. The temper may be more irritable, but the moral disposition evinces none of that perversity which characterizes mania.

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ciphers both in understanding and character. The observer, in fact, sees in them only ruins: he sees before him all the moral and intellectual elements in an almost complete state of isolation from one another. This separation is a kind of dissolution which betrays the radical blow that has been inflicted upon the psychical forces, and destroys all hope of ever seeing these elements united and co-ordinate. If sometimes a gleam of intelligence sparkles in this chaos, and in the midst of these ruins—far from consoling, it adds to the gloom, so manifest is it that the patient himself is neither its author nor its witness. Everything, in fact, in dementia, betrays an inability to form ideas, to experience sentiments, to possess a will. It is the tomb of reason, with the exception of some flashes that mark it, and which are, as it were, the reflections of the ancient brilliancy of the mind.—See *Etudes cliniques sur l'Alienation Mentale*, par M. Falret, p. 242. Paris, 1854.

(*e*) Ray on Insanity, p. 291.

"In dementia, the mind is susceptible of only feeble and transitory impressions, and manifests little reflection even upon these. They come and go without leaving any trace of their presence behind them. The intention is incapable of more than a momentary effort, one idea succeeding another with but little connection or coherence."(*f*)

IX. Mental unsoundness accompanied by delirium.

1st. *General Delirium.*

§ 235. What distinguishes delirium from the delusions of the senses, is that in the latter the sensational faculties are really acted upon, subjectively, though in an eccentric manner, while in the former the interior reproductive activity of the brain predominates in the generation of phantoms.(*g*) Consciousness is disturbed at the same time, and there is incoherent speaking and action, as if it were a waking dream. External objects are perceived indistinctly, or not at all, and on the whole there is the less delirium, the more activity there is in the peripheric nerves, for which reason hydrocephalic children generally relapse into delirium when they cease vomiting. The external senses may, however, be at the same time open to perceptions, and may convey them; but the patient is so controlled by his internal dreams as to act as if they did not exist. Here there is, accordingly, a predominance of dreams, which deprives the individual of the possibility of the power of maintaining a corresponding relation with the external world. Delirium may, therefore, be defined as a state of dreams brought on, not by sleep, but by disease. Like a dream, a delirium may become active, the beginning of which is the speaking delirium. Where a crime or misdemeanor proceeds from a delirium, there is no freedom of agency, *i. e.*, the action is to be regarded as the product of a morbid state of mind.

It is judicious for forensico-medical purposes, to distinguish particularly the following forms of delirium:—

§ 236. (a.) *Depressed delirium*, which is both passive and active.

§ 237. (b.) *Maniacal delirium*, which comprises several varieties, depending upon the frame of mind by which it is accompanied.(*h*)

(*f*) Ray on Insanity, pp. 292, 293.

(*g*) Haygen, vol. ii. p. 707; Schürmayer, &c., § 555.

(*h*) The most remarkable phenomenon of mental unsoundness (we translate from Morel) is unquestionably delirium, whether it shows itself in words or deeds. Delirium, considered as an essential symptom of insanity, should possess a type of continuity, should connect itself with lesions of a special nature, and should present altogether the elements of a certain systemization of the frenzied conceptions. This systemization alone gives to the delirium which produced it, a particular stamp. It shows off what has been called the fixing of ideas, and that logic peculiar to the insane that leads them to the justification of the falsest conceptions, and the most deplorable acts. If it was otherwise, who could have flattered himself that he had escaped insanity; for we have all suffered in a more or less degree the phenomena of delirium. We are delirious during fever, under the influence of spirituous liquors, as also of some narcotics. Febrile delirium is a generic term comprising the universality of abnormal phenomena that can in a more or less permanent manner, in a given disease, hinder the association of our ideas, or that directs the association in the way of producing illusions and hallucinations of all kinds.

The word insanity is likewise a generic expression for pointing out the universality

§ 238. (c.) *Delirium tremens.*(*i*)

§ 239. (d.) *Mania puerpera*, which attacks women in childbed, and is

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of the abnormal phenomena which, under the united influence of physical and psychical causes, can, in a more or less permanent manner, pervert our manner of feeling and seeing, or in other words, bewilder our understanding.

In this point of view, febrile delirium and the delirium of madness are the same, inasmuch as deliriums are identical; but it is excessively important not to confound the symptoms with the diseases that produced them.

An individual suffering from an acute disease approaches the period of convalescence. At the approach of night, or whenever he shuts his eyes, fantastical apparitions besiege him. He himself recognizes that these painful impressions are the results of his fever; or if he does not recognize it at the first glance, he receives the explanations of those surrounding him. He raves before sleeping, and it is not strange if he still raved under the influence of the depression as well as of exaltations of the organs of the senses. Upon awaking, he makes known to his relations and friends the fatiguing sensations that his dreams have produced, and seems to search with eagerness for explanations to reassure him. As he returns to consciousness, the motives of his judgment become more certain, the tumult of his bewildered senses is appeased, the nights are quieter, and when convalescence follows an ascending course, there only remains a vague and confused remembrance of the stormy scene through which he has passed.

Things, unfortunately, do not pass so when the delirium has a tendency to the permanent or chronic form; and it is this which makes the essential difference between properly called febrile delirium, and maniacal delirium. There may be a period when these two deliriums possess the same external characteristics on account of the similitude of the perverted sensorial phenomena; but when the phenomenon of delirium is produced by a maniacal state, it is then a situation which often passes unnoticed in the beginning, but which, as a diagnostic element, it is of the highest importance to describe.

This situation, so painful for the friends, first betrays itself in a perversion of the feelings, and in a complete change in the character and habits of the patient. He becomes impatient and fretful; speaks passionately, and in an unaccustomed tone. He often loses the feeling of modesty, whatever may be his age or education. His friends and relations attribute these disgusting phenomena to the effect of the primitive disease which shows itself with all the characteristics of an ordinary febrile delirium. But soon another more disgusting phenomenon shows itself, and often without enlightening them. The care bestowed upon the sick person, the marks of the liveliest affection which are shown to him are repulsed, sometimes with irony and disdain, and sometimes with passion and fury. In ordinary diseases the sick person attaches himself with happiness to everything that tends to recall him to existence. He hears with emotion of the different stages of his disease, and of the delirium which was its consequence; he speaks often of its causes, deplores its effects, and makes innumerable excuses for any malignant or obscene words which may have escaped him during the delirium. The patient, on the contrary, in whom the insanity is confirmed, will not admit that he was delirious. He sustains the errors of his imagination, and takes them for realities. The hallucinations and delusions of all sorts which he has felt, and which still beset him, fortify him in his madness. Still more, in this he systematizes his delirium, and whatever intellectual energy is left, is employed by him in establishing upon the basis of a desperate logic, motives for the new existence which he is just commencing. Several authors, basing themselves on the fact that the delirium of insanity is often found unaccompanied by fever (delirium sine febre), have thought that the train of physiological phenomena that accompanies the delirium of acute diseases, is sufficient to mark out the difference between these primitive conditions. This appreciation, though very true on one side, may nevertheless lead us into error. We willingly admit that the delirium of acute diseases is accompanied with redness of the cheeks and turgidity of the face. The expression is troubled, and there are marked changes in the circulation. The eyes are brilliant, respiration often painful, and the excretions involuntary; the language takes an unaccustomed accentuation. The sick person expresses himself sometimes with vivacity; sometimes with great slowness; his sentences and his words are badly articulated; he speaks sometimes to himself, and at other times deep drawn sighs are the only manifestations of his soul. But these phenomena are also to be met with in the delirium of insanity, and especially in the first stages of this disease.—See *Etudes Cliniques des Maladies Mentale*, &c. M. Morel, tome i. p. 124. Paris, 1852.

(*i*) L. Krahmer, Handbuch der Gericht. Med. Halle, C. A. Schwetschke, 1851, § 116. See also 7 Am. Jour. of Ins. 364. See as to responsibility of persons so affected, *ante* §§ 36–38.

sometimes distinguished, in addition to a high degree of violence, by lewdness and shamelessness, and more rarely by the homicidal mania.(*j*)

2d. *Partial.*

§ 240. This head may be considered as including *Furor transitorius, mania*

Privation of stimulants, says Morel, and the employment of opiates, generally suffice to restore reason to those persons who are generally not considered as insane unless afflicted with a special affection known by the name of *dypsomania:* even when the fatal consequences resulting from the abuse of spirits impress upon the delirium, which is its consequence, a form of continuity which has by some authors been pointed out under the name of *drunken madness.* Errors made in this respect may be productive of grave consequences for those who are the victims of them. The following is an example:—

In the month of May, 1850, there was brought to the asylum of Moreville, a sick person, whom a physician's certificate represented as a dangerous madman. We observed at first in him a very great disorder of ideas, and a peculiar difficulty of expressing himself. The face was pale, and the lips agitated with convulsive movements, and there was a general trembling of the limbs. The employment of opiates and a bath soon removed these appearances, and the next day we had a man in the perfect possession of his faculties before us. The error in this case had arisen from the fact, that the physician's certificate had been given without a proper examination of all the causes necessary to a correct judgment. If he had, indeed, gone back to the appreciation of the causes, he would have found out that very grave dissensions existed between two brothers, of whom one was this pretended madman, who, endowed with a violent but feeble character, after having yielded in the strife of discussion, ordinarily sought to console himself in alcoholic libations. It was after having swallowed a too abundant ration that a family quarrel brought its contingent of trouble to the natural excitement that controlled him, and resulted in *delirium tremens*, which, if it had been better appreciated in its origin and effects, would not have brought this person to an insane asylum, and compromised in a certain degree his social position. —*Morel, sur les Maladies Mentale*, tome i. p. 146. Paris, 1852.

(*j*) "A homicidal propensity," as we are told by Dr. Taylor, "towards their offspring, sometimes manifests itself in women soon after parturition. It seldom appears before the third day, often not for a fortnight, and in some instances not until several weeks after delivery. The most frequent period is at or about the commencement of lactation, and between that and the cessation of the lochia." According to Esquirol, it is generally attended by a suppression of the lochia and milk. The symptoms do not differ from those of mania generally, but it may assume any of the other forms of insanity; and in one half the cases it may be traced to hereditary tendency. According to Dr. Burroughs, there is delirium, with a childish disposition for harmless mischief. The woman is gay and joyous, laughing, singing, loquacious, inclined to talk obscenely, and careless of everything around. She imagines that her food is poisoned. She may conceal the suspicion, and merely avoid taking what is offered to her. She can recognize persons and things, and can, though perhaps will not, answer direct questions. Occasionally there is great depression of spirits, with melancholy. These facts are of some importance in cases of alleged child-murder. This state may last a few hours, or for some days or weeks, and we are told by Dr. Hartshorne, the accomplished American editor, sometimes for months and years; but it generally goes off within a few months, if not earlier. The murder of the child is generally either the result of a sudden fit of delirium, or of an uncontrollable impulse, with a full knowledge of the wickedness and illegality of the act—so that the legal test of responsibility from a knowledge of right and wrong cannot be applied to such cases. Mothers have been known, before the perpetration of the murder, to request their attendants to remove the child. Such cases are commonly distinguished from deliberate infanticide by there being no attempt at concealment, nor any denial of the crime on detection. Several trials, involving a question of puerperal mania have been decided generally in favor of the plea within the last few years. Dr. Ashwell has remarked, that undue lactation may give rise to an attack of mania, under which the murder of the offspring may also be perpetrated. (Diseases of Women, 732.) Females in the *pregnant* state have been known to perpetrate the crime apparently from some sudden perversion of their moral feelings. I am not aware that a plea of exculpation on the ground of insanity has been admitted in this country under these circumstances. (See case Ann. d'Hyg., 1831, i. 374.) For an able analysis of the present state of our knowledge on the subject of Puerperal Insanity, by Dr. Reid, see Jour. Psychol. Med., 1834, pp. 128, 284. Taylor's Med. Jurisprudence, pp. 594, 595. See as to the legal responsibility in such cases, *ante*, §§ 53–61.

transitoria, transitory ravings.(*k*) By this, says Schürmayer,(*l*) is understood an attack of frenzy, fury, and raving madness, accompanied with more or less confusion of the senses, and of the thinking faculties, and peripheric consciousness, which arises without any perceptible, or from a very slight external provocation, generally lasts but a short time, hardly a few hours, and after sometimes leading to the most serious consequences, leaves but an indistinct trace in the memory. It is either the opening symptom of a disturbance of the super-physical faculties which has hitherto remained occult, and now first manifests itself, or it appears in persons hitherto entirely sane, or in individuals who have already suffered from pronounced insanity, particularly from melancholy, depressed delirium, lunacy, and imbecility. In the latter class of cases, the question of responsibility presents no difficulties; far more in the former, in view of the possibility that the guilty act may have been the result of the outbreak of violent passion.(*ll*) It will then be often impossible to do more than to set forth the possibility or probability of a *furor transitorius*, which is effected by establishing the existence of facts which may have caused it. Such are epilepsy, irregular development, gastric irritations, disturbances of the menstrual or hæmorrhoidal courses, or the secretion of milk, the sudden dispersion of eruptions of the skin, sunstroke, drunkenness, poison, violent agitation, anger, dread, fright, deep shame, over-exertion of the mind. But where no such probable causes are to be discovered, the examination is necessarily confined to the statements of the party, and the immediate investigation of his intellectual and moral condition, the principal point of attention being the search and scrutiny of the motives of the acts, and the inquiry whether or not they were mingled with hallucinations or illusions, and whether the act was not preceded immediately or for some length of time by bodily disturbances, sleeplessness, restlessness, sadness, &c. Very great difficulties are involved in those cases in which an additional doubt arises whether the ravings were not occasioned by the criminal act itself, the probability of which, with a certain class of temperaments, has been already noticed.(*m*)

X. Mental unsoundness, as connected with delusions and hallucinations.(*mm*)

1st. *General.*

§ 241. Under this head will be treated that species of mental unsoundness which is marked by the continued and controlling existence of insane ideas, without being either accompanied with delirium or with moral-maniacal propensities to specific crimes. It may be considered as covering the same phrase as the partial lunacy (partielle verrücktheit) of Schürmayer, who declares it to consist in crazy notions, with only a secondary participation of the affective

(*k*) Friedreich, Handbuch der gerichtlichen Psychologie, p. 591.
(*l*) Gericht. Med. § 552.
(*ll*) *Ante*, §§ 53–60.
(*m*) See *ante*, §§ 116–118.
(*mm*) For a full account of Hallucinations and Illusions, we would refer the reader to Les Leçons Cliniques de M. Falret, Leçons 3, 4, 5, 6, pp. 95, 185, Paris, 1854; also Etudes Psychologiques, par L. F. G. Renaudin, chap. viii. p. 388, Paris, 1854.

faculties, without damage to the peripheric consciousness, and without a decided weakness of the intellectual powers. The subjects of it have completely resolved their individuality into their madness, it is in their eyes an absolute truth, and all demonstration and argument in opposition to it, are idle. Persons of this kind often suffer no external mark to betray their inward disorder, frequently speak and act quite rationally about, and in matters outside of the circle of their hallucinations, and only suffer the point of derangement to transpire when it is adverted to in conversation or when they have occasion to write. The malady may easily lead to the gravest violations of law, for which reason it is of the greatest judicial interest. Where the act is clearly the result of this morbid condition of the mind, no legal responsibility can attach to it.(*n*)

This species of mental unsoundness appears less frequently as a primary disease, than as a *secondary* result, developed out of prior disease, in the form of melancholy or otherwise. When the general expansive and depressive affection of the sentiments recedes, the confusion of the peripheric consciousness is dispelled, the bodily health regains its equilibrium, the patient finds himself endowed with a system of affections and perceptions to which he was before a stranger, but which revolve round one or more manifestly insane standpoints.

§ 242. These various fancies are reducible to certain groups, which take their point of departure, (1) in the relations of the individual to the external world, to the supernatural, and to his own personality, or (2) in perceptive anomalies of depression and mania.

The *former* view admits the following classification: *crack-brainedness*,(*o*) where the erroneous notions relate to the objects and relations of the external world, and of the body of the individual; *frenzy*, where they concern things beyond the reach of the senses, religious mysteries and divine inspirations; *folly* (*Narrheit*), where the identity of the person has undergone a change, and advanced to a higher stage of worldly honors. In the *latter* view, the subject matter of the delusion generally depends upon the kind of erroneous notion which accompanied the preceding stages of depression and mania. The delusion itself is of a *depressing* or *elevating* description. The depressive form subdivides as follows:—

(a.) *Hypochondriacal delusions*, where anomalous bodily sensations—delusions of the sense of touch—suggest the idea, that particular parts of the body have been transformed, that there are parasitic animals in them, or injurious substances, which must be removed, &c.

(b.) *Demoniacal delusions.* The patients declare and maintain, with perfect self-possession and entire calmness, that demoniac beings or other persons, living or dead, have their seat in their bodies.(*oo*)

(c.) Such delusions,(*p*) called by Ellinger "Concentric," as consist in the

(*n*) Schürmayer, Gericht. Med. § 556, *ante*, §§ 47–49.

(*o*) "A little cracked," to use Dr. Rush's popular synonyme, for what he at the same time tells us is expressed by the Scotch by the phrase "having a bee in his bonnet."

(*oo*) See *ante*, §§ 210–219.

(*p*) Ellinger, p. 132.

delusion that the personal reputation of the sufferer has been injured by a real or imaginary misfortune, that the infamy incurred has reached the ears of the highest circles—impressions still further confirmed by delusions of the sense of hearing—and that no resource is left but either seclusion from all intercourse with mankind, or restitution of good fame by some brilliant exploit.

(d.) *Peripheric delusions*, in which the patients regard themselves as the objects of a plot on the part of the authorities or of their relatives, or of some secret society, surrounded by spies and functionaries of the secret police, watched and dogged at every step, injured bodily and mentally in action and repose; persecuted and endangered in life and property, or that they are beleaguered by thieves, robbers, and murderers, or that spirits hover in the air to torment and disquiet them, &c.

The elevating phase of this species of mental unsoundness, subdivides itself, according to Schürmayer:—(*pp*)

(a.) *Religious delusions*, which may be considered in connection with dæmonio-mania, already noticed,(*q*) in which the patient pretends to stand in a particular position, as regards degree and distinction, in the eye of God, to have been appointed censor, prophet, reformer, and Messiah, &c.; it is generally accompanied with hallucinations of sight and sound, and often leads to the most dreadful crimes.

(b.) *Delusions of pride.* The patients suppose themselves called, by their qualifications of person and mind, to the most important missions.

(c.) *Delusions of vanity.* The delusion here is a supposed descent from a princely lineage, elevation to a higher social position, &c., the enjoyment of which, however, is destroyed by the machinations of the envious and malevolent.

(d.) *Sexual delusion*, which is sometimes of a more intellectual, sometimes of a more carnal nature, is a state of mind in which the patients suppose that, in consequence of their personal charms or other advantages, either all people of the opposite sex, or even persons occupying a higher rank, such as princes, are in love with or betrothed to them in spirit. This is attended with many hallucinations, particularly of the sexual kind.(*qq*)

§ 243. It is not to be denied that the proper consideration of this species of mental unsoundness presents great difficulties, and the practical suggestions of Ellinger(*r*) are indeed worthy of peculiar attention. He notices the following phases:—

"1. An impression of having sustained wrongs at the hands of certain persons, against whom revenge is meditated and executed. Here the diseased individual often acts on mature reflection, and in the full knowledge that he has no right to take revenge, and of the consequences which ordinarily ensue, and then it may occur either that he prefers undergoing the extremity of the law, and perishing together with the supposed wrongdoer, to remaining longer exposed to his assaults, or that he proceeds on the ground of his known and established insanity, calculating to escape responsibility and punishment on

(*pp*) Med. Jour. § 556.
(*qq*) *Ante*, § 199.
(*q*) *Ante*, §§ 210–221.
(*r*) P. 137.

the strength of the indulgence accorded to his case. Here there appears in general some ground to assume a moral responsibility.(*rr*)

"2. An impression that the patient is acting at the instigation or under the constraint of demons. In this case it might become necessary to inquire whether, and in how far, the patient understood that the demands of the demons were wrongful, and that he was at liberty to withstand them, and whether, and in how far, it was actually in his power to withstand them.

"3. The patient imagines himself beset by thieves, &c., and neither sure of his property nor of his life. This may perhaps be treated as a case of self-defence, and all responsibility excluded.

"4. The self-consciousness of the patient is perverted, and he acts with that plenitude of power with which he is invested in view of his position and his destiny, in religion, politics, &c. In this case, as under the third position, responsibility is out of the question.

"But as a fixed idea never occurs in such isolation as is erroneously supposed, there being always a series of phantoms connected into a system, the outlines of which it may be perhaps impossible to define with accuracy—as the entire affective life has become altered and irregular, the general views of men and things having become distorted, and illusions of the senses being often brought to light by a rigid scrutiny, which entirely escaped the eye of the superficial observer—as the action, reaction, and intro-action of the psychical faculties is no longer measurable by the ordinary standard—*opinions must be given with the greatest circumspection, and every possible reservation, whenever the connection or want of connection between the illusion and the deed is not perfectly evident.*"(*s*)

It is not easy to mistake the *error of a lunatic* for the *error of a sane man.* The decisive point of difference between them is, that in the latter case the action of the thinking faculties, from whatever cause it be, only terminates too soon, and before the entire subject has been thoroughly sifted, and that such an error, after having been properly refuted, can only be maintained by dint of obstinacy or indolence. In insanity, on the contrary, the error of the understanding is occasioned by the abnormal function of the perceptive faculty. One or two prevailing schemes of perception(*ss*) are applied to almost all other perceptions to which they can be adjusted in any way, and thus one and the same *tout ensemble* of perceptions is continually reproducing itself on the slightest provocation. Here the chain of association loses, in the eye of the individual, its accidental, personal, and contingent character, and, by its constant recurrence, deludes the understanding with the idea that the same connection subsists between the objects in reality as in the imagination of the individual, until at last reason herself is misled into seeing a necessary relation of cause and effect in the perceptions with which it finds itself invariably associated. The individual is therefore compelled to think accordingly; and even if it is sometimes brought, by instruction, to acknowledge its error, it is only to relapse into it, not so much from obstinacy, as because of this compulsory

(*rr*) See *ante*, §§ 47–49.
(*s*) Ibid.
(*ss*) Compare Hagen, vol. ii. p. 707.

synthesis of the perceptive faculties. *A sane man in error retains the power of doubting, not the madman.* This condition of the perceptive faculties is also the cause of the great indifference manifested towards surrounding things, of the dreamy manner and the illusions growing out of it. It is also a matter of course that the perceptions, by their constant recurrence, cease to be mere perceptions, but subsequently take rank as thoughts and ideas, in consequence of their constant action upon the understanding, and their assumption of the form of propositions.(*t*)

§ 244. Delusion may spread in such a way as to cover the whole surface of the mind, leaving no sound perception untouched. It is then distinguished by the general want of connection and consistency between the perceptions, and by the absence of any symptom of positive feebleness of the understanding, in spite of the disruption of the thread of ideas, and the incongruous juxtaposition of the fragments. Dr. Rush, in the following report given by him of the conversation of a patient laboring under this phase, very happily illustrates this incoherence, and at the same time the occasional point by which its intellectual operations are distinguished: "No man can serve two masters. I am Philip, King of Macedonia, lawful son of Mary, Queen of Scots, born in Philadelphia. I have been happy enough ever since I have seen General Washington with a silk handkerchief in High Street. Money commands sublunary things, and makes the mare go; it will buy salt mackerel made of ten-penny nails. Enjoyment is the happiness of virtue. Yesterday cannot be recalled. I can only walk in the night-time when I can eat pudding enough. I shall be eight years old to-morrow. They say R. W. is in partnership with J. W. I believe they are about as good as people in common—not better, only on certain occasions, when, for instance, a man wants to buy chincopins, and to import salt to feed pigs. Tanned leather was imported first by lawyers. Morality with virtue is like vice not corrected. L. B. came to your house and stole a coffee-pot, in the twenty-fourth year of his majesty's reign. Plum-pudding and Irish potatoes make a very good dinner. Nothing in man is comprehensible in it. Born in Philadelphia. Our forefathers were better to us than our children, because they were chosen for their honesty, truth, virtue, and innocence. The Queen's broad R originated from a British forty-two pounder, which makes too loud a report for me. I have no more to say. I am thankful I am no worse this season, and that I am sound in mind and memory, and could steer a ship at sea, but am afraid of the tiller. * * * * Son of Mary, Queen of Scots. Born in Philadelphia. Born in Philadelphia. King of Macedonia."(*u*)

And Shakspeare gives, with equal truth, the following soliloquy of a madman, in whom the *depressing* rather than the *elating* phrase is exhibited:—

> "Who gives anything to poor Tom,
> Whom the foul fiend has led through fire,
> And through flame, through ford and whirlpool,
> Over bog and quagmire, that hath laid
> Knives under his pillow, and halters in his pew,
> Set rats-bane by his porridge, and made him to
> Ride upon a bay trotting horse over four-inch
> Bridges, and to course his own shadow for a traitor."

(*t*) Ibid. p. 818.

(*u*) Rush on the Mind, pp. 242, 243.

And Lear, in language still more expressive of misery, thus complains:—

> ——————"I am bound
> Upon a wheel of fire that mine own tears
> Do scald like molten lead."

2d. *Partial Delusion.*(*v*)

§ 245. Under this head may be enumerated, *Delusions of the Senses, Illusions and Hallucinations.* A distinction is very properly drawn by Schürmayer, following in this respect the general current of modern opinion, between illusions and hallucinations, the former comprising mistakes in the conception and interpretation of the perception of objects *actually present*, while in the latter, the perception which originates in a diseased action of the senses, appears to the patient as if the sensation were produced by a real external object acting upon the senses.(*w*)

The same distinction is thus stated by Dr. Taylor: "*Hallucinations* are those sensations which are supposed by the patient to be produced by external impressions, although no material objects may act upon the senses at the time.(*x*) *Illusions* are the sensations produced by the false perception of objects."(*y*) "When a hallucination," he proceeds to say, "or an illusion is believed to have a real and positive existence, and this belief is not removed either by reflection or an appeal to the other senses, the individual is said to labor under a *delusion;* but when the false sensation is immediately detected and is not acted upon as if it were real, then the person is sane."

"As a morbid condition of the brain," says Sir Benjamin Brodie, "may produce the impression of visible objects, or of voices, which have no real existence, so it may also produce notions of a more complex and abstract character, and these may be constantly obtruded on the mind, so that the individul is unable to withdraw his attention from them, being, as it would seem, as much beyond the influence of volition as the muscles of a paralytic limb. Thus, one person believes himself to be ruined as to his worldly affairs, and that he and his family, though really in affluence, are reduced to extreme poverty; while another is persuaded that he is in possession of unbounded wealth, the consequence being that he is in danger of being ruined by extravagance; and a third, is under the apprehension of his being accused of some dreadful crime, and perhaps seeks refuge from his fears in self-destruction. It is more difficult to escape from the latter than from the former class of illusions, as the appeal lies not from one sense to another, but to a more refined process of thought and reflection, and the examination of evidence."(*z*)

We may step for a moment from the strict line of discussion to notice the

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(*v*) See the very interesting discussion of this point by Feuchtersleben—Principles of Medical Psychology, being the outlines of a course of Lectures by Baron Von Feuchtersleben, M. D. Vienne, 1845. Translated from the German by the late H. Evans Lloyd, Esq. Revised and edited by G. B. Babington, M. D., F. R. S., &c. London, printed for the Sydenham Society, 1847, pp. 279–343.

(*w*) Schürmayer, Gericht. Med. § 554.

(*x*) See on this subject, remarks by Dr. Sigmond, Jour. of Psychol. Med. p. 585. 1848.

(*y*) Taylor's Medical Jurisprudence, p. 552.

(*z*) Psychological Inquiries, &c. p. 79. London, 1854.

striking remarks on this point of the great Scotch metaphysician. "Several phenomena in human nature," says Dr. Reid, "lead us to conjecture that, in the earliest period of life, we are apt to think every object about us to be animated. Judging of them by ourselves, we ascribe to them the feelings we are conscious of in ourselves. So we see a little girl judges of her doll, and of her playthings. And so we see rude nations judge of the heavenly bodies, of the elements, and of the sea, rivers and fountains. If this be so, it ought not to be said that by reason and experience we learn that certain things are inanimate, to which at first we ascribe life and intelligence. If this be true, it is less surprising that, before reflection, we should for a moment relapse into this prejudice of our early years, and treat things as if they had life which we once believed to have it. It does not much affect our present argument, whether this be or be not the cause why a dog pursues and gnashes at the stone that hurt him; and why a man in a passion, for losing at a play, sometimes wreaks his vengeance on the cards or dice. It is not strange that a blind animal impulse should sometimes lose its proper direction. In brutes, this has no bad consequence; in men, the least ray of reflection corrects it and shows its absurdity."(*a*)

"Hallucinations," says Ellinger, "generally occur in every form of mental derangement, but chiefly in the higher stages of depression and mania, in deliriums, in lunacy, and in confusion of mind, and lead to the commission of crimes, particularly when the patient was originally not without the taint of culpable passions."(*b*) For judicial purposes it will be found advantageous to arrange hallucinations under the four following heads:—

§ 246. 1. In individuals who show no signs of disorder in their affective or intellectual systems, they will not operate to suspend the responsibility of the agent; but they may become the motives of violations of the law.(*c*)

§ 247. 2. In individuals in whom the disease of the mind has made some progress, but has not yet acquired a permanent form, the victims often make no secret of them, and recognize them as intruders into the working of their thoughts; while in other cases they keep them to themselves.

§ 248. 3. In persons who are in a state of total drunkenness, under the influence of poison, or overpowered by sleep, where external consciousness is entirely gone, and utter confusion of the senses obtains, in such cases the free power of self-control may be entirely dislodged.

§ 249. 4. In individuals whose insanity is equally mature and manifest, the

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(*a*) Reid on the active powers of Malevolent Affection, p. 569. See also Schürmayer, Gericht. Med. § 554.

(*b*) Ellinger, p. 167.

(*c*) Boswell says: "Dr. Johnson mentioned a thing as not unfrequent, of which he (Boswell) had never heard before—being called, that is, hearing one's name pronounced by the voice of a known person at a great distance, far beyond the possibility of being reached by any sound uttered by human organs. An acquaintance, on whose veracity Boswell says he could place every dependence, told him that, walking home one evening to Kilmarnock, he heard himself called from a wood, by the voice of a brother who had gone to America, and the next packet brought the account of that brother's death. Macbean asserted that this inexplicable *calling* was a thing very well known. Dr. Johnson said that one day, at Oxford, as he was turning the key of his chamber, he heard distinctly his mother call *Sam!* She was then at Litchfield; but nothing ensued."—*Winslow's Anatomy of Suicide*, pp. 127, 128.

absence of freedom of agency is not to be doubted; the responsibility of such persons *in foro* is therefore out of the question.

§ 250. According to Hagen,(*d*) the cause of the delusions of the senses is either a mere physical stimulus, which, acting upon the fountain-heads of the sensational nerves in the brain, produces eccentric sensations, and induces the individual to incorporate his sensations into an image, in which case it will depend upon the particular circumstances of the case, especially on the mental and moral condition of the individual, whether or not such apparitions are believed to be genuine. And upon another hypothesis, suggested by the same author, the disease is only a strong morbid susceptibility of the brain to eccentric sensations, with which some fancy or other comes into such a collision as to act as the stimulating cause of a paroxysm, bringing, at the same time, a complete phantom before the external sense, just as in cases of convulsive diseases, St. Vitus's dance, &c., an intended slight motion may bring a convulsion into that particular system of muscles. Great care must be taken, however, not to include under this head what is not really a delusion of the senses. If, for instance, a madman takes a person or a black cat for the devil, there is no delusion of the senses. On the contrary, in supposing the devil to have assumed such a shape, the maniac only directs his madness to an object of which, in itself, he has a correct perception. Delusions also, we are admonished by Schürmayer, must not be mistaken for *confusion of the senses*, which consists in an entire obstruction of the conceptions, an incapacity to obtain adequate apperceptions, and sometimes in an entire want of objective consciousness and recollection.

§ 251. The following interesting illustration of partial delusion is given to us in Dr. Mayo's late work: "In a case to which I was called in by Dr. Monro, a few years ago, it was our painful duty to resist the liberation of a patient, an old lady, whose confinement under certificates had continued for sixteen years. For six years she was described as having been in a state, first of acute, and then of chronic mania. For many years, we learned, that she had regained the power of conversing consecutively and sensibly, indeed without the smallest evidence of incoherent or irrational remark, and such appeared to us her present state. The objections which existed to her being then considered sane, if she had been insane, up to the time we saw her, on the ground of her advanced age, weighed on our minds, but seemed insufficient. The evidence of her attendants, who considered her still insane, on the ground of occasional outbreaks of temper, was that of interested witnesses. She was a patient in chancery, and the visiting physicians had become favorably disposed to her enlargement, as a sound-minded person. Now, the question was in this instance determined in our minds by a discovery of a very remarkable notional delusion which held its ground in her mind. In a set of drawers in this lady's bedroom, and in certain trunks there, to which we were conducted without her knowledge, we witnessed a large and very heterogeneous and dirty collection (dirtiness had been a symptom of her insane state), consisting of old bottles, broken cups and saucers, brass knobs, bits of old string, shreds of linen and cloth, small

(*d*) Compare Wagner's Handwörterbuch der Physiologie, vol. ii. p. 811.

bundles of wood, such as light fires, pieces having been apparently picked up and tied together, a cup containing dirty food of the most disgusting appearance, which had evidently been long there, bits of valueless stones, coals, nails, &c. This accumulation, which could not have been extemporized by the attendants to make out a case, and of which accordingly the patient must have been long aware, would have occasioned strong doubts as to her sanity, even if no prior grounds of suspicion had existed; but carefully preserved by one who up to a recent date had been so far suspected of insanity that she had not been set free by the visiting commissioners, who was in her seventy-first year, and therefore the less likely to have obtained a cure, it became, in the opinion of Dr. Monro and myself, a conclusive ground for resisting this lady's immediate enlargement."(*e*)

§ 252. Particular hallucinations are classified by Abercrombie under the following heads:—

1. Propensities of character, which had been kept under restraint by reason or by external circumstances; or old habits, which had been subdued or restrained, developing themselves without control, and leading the mind into trains of fancies arising out of them. Thus, a man of an aspiring, ambitious character may imagine himself a king or great personage; while in a man of a timid, suspicious disposition the mind may fix upon some supposed injury, or loss either of property or reputation.

2. Old associations recalled into the mind, and mixed up perhaps with more recent occurrences, in the same manner as we often see in dreaming. A lady, mentioned by Dr. Gooch, who became insane in consequence of an alarm from a house on fire in her neighborhood, imagined that she was the Virgin Mary, and had a luminous halo around her head.

3. Visions of the imagination which have formerly been indulged in, of that kind which we call waking dreams, or castle-building, recurring to the mind in this condition, and now believed to have a real existence, I have been able to trace to this source of the hallucination. In one case, for example, it turned upon an office to which the individual imagined he had been appointed; and it was impossible to persuade him to the contrary, or even that the office was not vacant. He afterwards acknowledged that his fancy had, at various times, been fixed upon that appointment, though there were no circumstances that warranted him in entertaining any expectation of it. In a man, mentioned by Dr. Morison, the hallucination turned upon circumstances which had been mentioned when his fortune was told by a gipsy.

4. Bodily feelings giving rise to trains of associations, in the same extravagant manner as in dreaming. A man, mentioned by Dr. Rush, imagined that he had a Caffre in his stomach, who had got in at the Cape of Good Hope, and had occasioned him a constant uneasiness ever since. In such a case, it is probable, that there had been some fixed or frequent uneasy feeling at the stomach, and that about the commencement of his complaint, he had been strongly impressed by some transaction in which a Caffre was concerned.

5. There seems reason to believe that the hallucinations of the insane are

(*e*) Mayo on Medical Testimony in Lunacy, pp. 33, 34.

often influenced by a certain sense of the new and singular state in which their mental powers really are, and a certain feeling, though confused and ill-defined, of the loss of that power over their mental processes which they possessed when in health."(*f*)

§ 253. Hallucinations involving a belief that the patient has been transformed into various species of animals have been at times almost epidemic. Analogous to these is the belief that worms, frogs, or snakes have taken up their abode in the head or stomach, which consume the brain or entrails. Men have fancied themselves pregnant, and imagined themselves shadows or corpses, or to be constructed of glass, butter, or wax. At one time the belief in a transformation into wolves or other wild animals became so prevalent as to acquire a title to itself (Lycanthropia). In cases of this last phase the disease became so uncontrollable as to impel its victim to a close imitation of the wild animal itself, falling upon other men and animals, and snapping at and biting them. Andral relates a case of a child of fourteen years, who tore wildly about the fields, biting other children that came in its way, and producing the greatest consternation in the neighborhood.(*g*)

XI. Mental unsoundness as connected with lucid intervals.(*h*)

§ 254. Mental diseases are not always continuous, but they improve, and alter their form in such a manner as to exhibit abatement or cessation of the disease. When, therefore, an illegal act has been committed by a man at such a time, *i. e.* after the occurrence of a manifest disorder of his mental faculties, the question at once arises, whether the mental alienation has really ceased, or whether it is not still present in a slumbering state, and possibly influential in determining the act.(*i*)

(*f*) Abercrombie on the Intellectual powers, pp. 255, 256.

(*g*) Cours de Patholog. Interne, tome iii., Paris, 1836, p. 186. The curious will find a very interesting disquisition on this point in Wierus's work, De Præstigiis Dæmonum, lib. iv. c. 23.

(*h*) L. Krahmer, Handbuch der gericht. Med., Halle, C. A. Schwetschke, 1851, § 124.

(*i*) The subject of lucid intervals has lately been investigated in a very learned treatise by Dr. Lehr (Die Lehre von den lichten Zwischenzeiten in gerichtlich-medicinischer Beziehung, Henke's Zeitschrift, 3). Two views of lucid intervals present themselves, which vary widely in their judicial relations, one of which (that espoused by Dr. L.) regards them as a suspension of the *disease*, while the other treats them merely as a temporary suppression of its *manifestation*.

We condense from M. Renaudin the following very interesting remarks on this point:—

Lucid intervals is the name ordinarily given to the condition in which the insane person is placed at the end of a strong delirious excitement, or when he awakes from a profound stupor.

We are generally led to believe the existence of a lucid interval when delirious ideas no longer manifest themselves, and when the insane person shows himself accessible to other preoccupations, and thus appears to enjoy the full amount of moral liberty allowed to him.

It has been already said that the approach of insanity is rarely sudden, and that, being based in some respect upon a natural or acquired predisposition, it is preceded by a period of incubation, that paves the way for a manifestation of the disorder often long before its actual appearance. When a retrospective examination of the antecedents of the disease is made, a proof is found of the latent advances which insanity makes.

But under this apparent reason is concealed a disorder which makes a sensible progression every day. Irritability is developed; the regimen is irregular; the affective

As indicated above, there is, strictly speaking, but one species of unsoundness of mind, and what we term forms are more properly stages of one and

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sentiments are changed or perverted; everything has become an object of contrariety; delirious convictions are organized upon the perceptive errors every day more numerous; and finally insanity shows itself in a critical excitement, the more decided as the lesion of sensibility has become more complete, and as the incubation is marked by a more or less concentrated struggle. The patient is then isolated; irritating causes are removed, and immediately the over-excitement diminishes; a calmness succeeds. This transient remission, however, ceases as soon as the unhealthy influence regains its empire, and we then see that which was called a lucid interval was, in fact, but a transient remission.

Continuity is essentially the characteristic of monomania and lypomania. Either the insane person, by a convalescence, advances to a complete cure, or he still remains affected with the original type. Every intermediate situation is inadmissible, except when an incidental affection, causing a kind of metastasis, for the moment suspends or masks the madness. Whenever it is not a true crisis, it only causes a fleeting remission of the symptoms rather than of the pathological condition; and the physician assumes a serious responsibility when, simply on the face of this apparent calm, he conceives the possibility of the patient's return to his family, where but too soon the causes will be found reunited that restore to insanity all its intensity. It is in not sufficiently resisting the desires of friends, that the physician paves the way for these returns, which are less relapses than the recrudescence of an uncured pathological state.

But though, in an absolute diagnostic point of view, we reject the lucid interval—though, when the existence of mental unsoundness has been once shown, we do not admit that the remissions diminish irresponsibility—we still think that the deranged can perform certain acts with a perfect knowledge of cause, and can even exercise his intelligence, provided that he is placed under the influence of certain protecting conditions. The regulating discipline of an asylum tends greatly to this result, and therefore it is not astonishing if our insane can perform certain civil acts of a simple character, and may consent to a division of property, or even authorize a marriage. The legality of the act is essentially subordinate to a previous appreciation of the extent of the delirium at the time, and the relations existing between the action and the delirious conception. So, though not admitting the existence of a lucid interval, we still believe that the madman may be placed in a situation that permits him to appreciate the action demanded of him. In a criminal point of view, this distinction cannot be established, since the action is a logical consequence of the madness; and daily observation teaches us that it is during these moments of apparent sanity that the maniac meditates and prepares the most dangerous projects, as much against himself as against others. The ingenious combination of means that the lypomaniac uses in order to obtain his object is urged in vain as proof of lucidity, since the delirious conceptions, whilst rendering the premises false, are far from always deranging the logical chain of the other intellectual operations. We should then consider the lypomaniac as an oppressed person who conspires against his enemies, and as he is the most feeble, he calls cunning to the aid of his legitimate means of defence.

In the maniac, especially in the paroxysm, we observe a disordered agitation, accompanied with such an amount of incoherence that the affected person appears to be rather the sport of some strange motive power than the originator of this extreme mobility. There are times when even this storm is dissipated as if by enchantment. Dissimulation becomes possible for a certain time; the delirium is in some degree suspended, and we may be led to suppose a spontaneous return to reason. How often have we seen maniacs cease to rave during the questioning of the judge, and immediately afterwards recommence their course of wanderings.

The more vivid the excitement is, the more considerable is the expenditure of the vital forces; so that when it has lasted a certain time, a period of prostration arrives; but, allowing a remission of some somatic symptoms, still the incoherence of ideas is persistent with other symptoms. Sometimes the transition is rapid; and then, above all, is it necessary to attribute the situation to its true causes, in order not to expose the examiner to an error of diagnosis.

Periodicity is generally observed in mania; and it is then that insanity of actions must be distinguished from insanity of ideas. Though often united, still they are sometimes isolated from each other, or follow one another. It is on this account that the most extravagant acts sometimes correspond with a certain intellectual lucidity, which at the first glance may impose upon us; and it is then that we observe persons thus insane justify their actions by the most specious reasonings. We must not,

the same disease. This disease, however, may become fixed for life at one or the other stage, or may travel slowly or rapidly, and, so to speak, imperceptibly

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however, take this intellectual waking for a lucid interval; for, although masked, the delirium still continues.

In other cases, the madness is less intense. All excitement has disappeared, and the insane person answers all our questions so reasonably as to lead us to infer the existence of a lucid interval; but the illusion is soon destroyed when, in pushing our examination, we weary him with questions: he becomes agitated; loses the thread of his ideas; becomes more and more incoherent, and so proves to us that he has had what scarcely might be called a transitory remission.

There are cases where the periodicity appears more determined, and where the conduct of the patient betrays no sign of the insanity which he formerly manifested. The lucid interval can perhaps be sometimes admitted under these circumstances; but it is still necessary to exercise some caution in regard to the value of these appearances. If the patient denies his situation; if he refuses to acknowledge the principal acts which have characterized his paroxysm; if he seeks to attribute them to some foreign cause, it is a proof that the reason is not sound, and that a paroxysm is always imminent; and lucidity cannot be admitted, since errors of perception and judgment still exist. This observation especially applies to that kind of mania in which excessive irritability plays the principal part; where the remissions are irregular, and the paroxysms are shown under the influence of the slightest cause. We cannot, then, consider this momentary repose of a permanent effect which is always ready to break out, as a lucid interval. We might say as much of the period of prostration following a period of strong excitement.

When periodicity is complete, it is recognized at first by the appearance of the paroxysm, which has, in some measure, a critical termination. The lucid interval can then be admitted, if there is a complete contrast between the two situations, if the patient appreciates them, and if the manifestation of each fit is shown by an approach which is always regular, and which is always produced under the influence of the same causes. It is, if we can thus express ourselves, a momentary cure, which is prolonged for a longer or shorter period of time, and which often finishes by becoming a complete one.

Finally, when the affection passes to the chronic state, the patient raves less, because excitement fails him, and also because his will is in want of a regulating force. We cannot consider this as a lucid interval where the patient is unable to act except when directed by another's mind. When mania passes into dementia, the transition is sometimes shown by an apparent reawakening of reason, which is, as it were, its last glimmer. Generally it is the mobility of maniacs which is most favorable to the action of the derivations whose results sufficiently impose upon the superficial observer so as to cause him to admit the existence of a lucid interval.

The stimulated attention of these patients fixes, for a moment, this mobility, directs cunning towards the accomplishment of a project, where a personality is in play, and we are often surprised with the address shown in organizing a plan of escape. But, in spite of this incidental derivation, the maniacal temperament still remains the same, unless, indeed, this transitory action of the mind should become a crisis.

Dementia, where the psychico-somatic existence is gradually extinguished, is a ruin in which a trace of a better time is sometimes found. If, occasionally, remembrances of the past show themselves, this apparent lucid interval is no more than a retrospective reasoning without actual application. When, instead of being the termination of the other forms, dementia is primitive or idiopathic, the lucid intervals can be sufficiently clearly drawn, and the diagnosis does not present as many difficulties as in the other forms. In fact, the demented cannot dissimulate; since, to do this, a reactive power would be necessary, which in him is entirely wanting. He cannot conceal his incapacity under the mask of an energy whose absence is the principal feature of his disease. More submissive than the others to somatic influences, he is sometimes a prey to an almost maniacal excitement; but if this is not critical, it forms an expenditure of power resulting in pure loss, and making one more step in this period of prostration. In a word, if the man lives for a moment in the past, he is as nothing in the present; and it is under privilege of this restriction that a lucid interval, provoked by some foreign stimulant, but without root in an exhausted moral system, can be admitted.

Hence we see that the lucid interval is of much rarer occurrence in mental unsoundness than is generally thought. It is in mania that the periodicity of regular paroxysms permits us to admit it; but then, also, it is still necessary to guard against being imposed upon by a remission of excitement, which is not that of the frenzied condition. (See Etudes Physio-Somatiques sur l'Alienation Mentale, par L. E. F. Renaudin, chap. ix. p. 522. Paris, 1854.)

from one stage to the other, if recovery does not intervene. We must, therefore, look for *criteria* to prove that the symptoms observed are not those of a progress of the disease, but of *recovery*, for without such criteria we should be induced to presume the continuance of the disorder. The following suggestions, given by Ellinger, and repeated by Schürmayer, are important in the consideration and decision of such cases. As a general thing, there is no recovery from mental unsoundness which has been attended with permanent and general delusion: in the other forms it sometimes, though very rarely, takes place suddenly, the consequence of strong excitement, as a sudden outburst of rage, or even in sleep, without any preceding physical or moral change. Its general development, however, is slow, being marked with a gradual lessening of the affective irritations, with an increased coherency and consequentiality of thought, with a return of the natural inclinations and appetites, of sleep and nourishment, and with a disappearance of the physical anomalies. Sometimes, however, it advances with a more fluctuating step, agitated as it were with mental tides, the flood of each of which, however, falls below the high water-mark of its predecessor, while each ebb more and more nearly approaches the line of sanity. To constitute a recovery, the patient, if he has not acquired a more rational constitution of his moral character, must at least have regained that which he enjoyed before the appearance of the disease: he must have reacquired a taste for his former occupation, must again display his former inclinations and points of interest, must understand what he remembers of his disease when assisted by explanations, must speak of it as of something to which he is now superior, must clearly see the erroneous nature of the delusions under which he labored, and must be really contented and internally at peace. But if, on the other hand, the former character of the disease has only disappeared in part; if the old insane grudge against one person or another is manifested; if there is a smothered rage, or aversion to persons or things formerly cherished; if the alleged convalescent refuses to acknowledge his disease in general or in regard to particular points; if he dislikes to speak of it; if his conduct is marked by unnatural irritability, suspicion or boisterous and immoderate joy, or by other anomalous features, a perfect recovery has *not* taken place, although in point of intelligence, formal and substantial, not the slightest anomaly is perceptible.(*j*)

§ 255. Where the patient's recovery from a mental disorder is not clearly established, it may still be doubted whether an alleged criminal act was committed under circumstances involving the full responsibility of the agent. Whether the malady was of long or short duration, whether it was more or less intense, is here of no decisive import, and of equally little moment is the apparent reflection and preparation with which the act may have been committed.

The different kinds of improvement or interruption in cases of unsoundness of mind, present various features, which vary in accordance with the duration and degree of abatement.

1. *Intervallum lucidum*, with a restoration of consciousness in general and

(*j*) Compare Ellinger, p. 169. Schürmayer, § 573.

of insight into the past and present, but without entire clearness, and with the continuance of a more, though not entirely subdued temperament. The patient is not yet the same as he was before the disease overtook him. If he was, he would have to be regarded as restored to health, and there would, in its strict meaning, be no question as to a lucid interval.

2. *Remission* differs from a lucid interval only in degree, being generally attended with a subsidence of the external manifestations of the disease, not sufficient, however, to be mistaken for recovery.

3. *Alternation* is the term given to the change from one form of mental unsoundness to another, particularly from depression to mania and the converse, not however from psychical to bodily, or from bodily to psychical manifestations. Where for instance the individual has long suffered from morbid depression or elation of spirits, this may gradually decrease and give place to an apparent return of health, which, however, does not last long, but sooner or later lapses into the opposite condition, so that depression turns into mania, and mania into depression.

4. *Intermission*, when the disease recurs at more or less regular periods, and the disease presents no anomalous symptoms.

§ 256. The restoration of moral responsibility progresses in correspondence with the progress of recovery. In passing, therefore, upon a given case, regard should be had, not only to the individual circumstances, but also to the time intervening between the cessation of patent insanity and the commission of the offence.(*k*)

§ 257. On this point Dr. Rush thus speaks: "The longer the intervals between the paroxysms of madness, the more complete is the restoration to reason. Remissions rather than intermissions take place when the intervals are of short duration, and these distinguish it from febrile delirium in which intermissions more generally occur. In many cases everything is remembered that passes under the notice of the patient during a paroxysm of general madness, but in those cases where the memory is diseased as well as the understanding, nothing is recollected. I attended a lady in the month of October, 1802, who had crossed the Atlantic Ocean during a paroxysm of derangement, without recollecting a single circumstance of her voyage any more than if she had passed the whole time in sleep. Sometimes everything is forgotten in the interval of a paroxysm, but recollected in a succeeding paroxysm. I once attended the daughter of a British officer, who had been educated in the habits of gay life, who was married to a Methodist minister. In her paroxysms of madness, she resumed her gay habits, spoke French and ridiculed the tenets and practices of the sect to which she belonged. In the intervals of her fits, she renounced her gay habits, became zealously devoted to the religious principles and ceremonies of the Methodists, and forgot everything she did and said during her fits of insanity. A deranged sailor, some years ago, in the Pennsylvania Hospital, fancied himself to be an admiral, and walked and commanded with all the dignity and authority that are connected with that high rank in the navy. He was cured and discharged: his disease some time after-

(*k*) Schürmayer, Gericht. Med. § 574.

wards returned, and with it all the actions of an admiral which he assumed and imitated in his former paroxysm. It is remarkable that some persons when deranged *talk* rationally, but *act* irrationally, while others act *rationally* and talk *irrationally*. We had a sailor some years ago in our hospital, who spent a whole year in building and rigging a small ship in his cell. Every part of it was formed by a mind apparently in a sound state. During the whole of the year in which he was employed in this work, he spoke not a word. In bringing his ship out of his cell, a part of it was broken. He immediately spoke and became violently deranged soon afterwards. Again, some madmen *talk* rationally and *write* irrationally; but it is more common for them to utter a few connected sentences in conversation, but not be able to connect two correct sentences together in a letter. Of this, I have known many instances in our hospital."(*l*)

§ 258. Mania frequently assumes a type in which the periods of return and of cessation are marked with the greatest exactness and regularity.(*m*) Medicus, in his history of periodical diseases,(*n*) tells us of a girl who was subject to a delirium which came on every evening at exactly the same hour, and lasted three hours and a half. Of two women attacked with periodical madness, one was deranged nine days in each month, and the other two days.(*o*)

XII. Treatment of insane criminals.

§ 259. The enlargement of the range of insane irresponsibility which the preceding sections recognize, makes the subject of the subsequent treatment of the insane offender of very momentous importance. Even if we adopt the severest legal tests, yet when a case occurs of an acquittal, as it sometimes must on the most stringent principles, the offender, who in this case, on the law's own assumption, is a mere "animal," should be no more permitted to range the streets than should a mad dog or a mad bull. But in point of fact, there are a myriad of phases of mental unsoundness, none of which are consistent with entire responsibility, and yet each of which has its distinct degree of moral culpability attached to it. Rare, indeed, are the instances, where there is not a consciousness of guilt, which, though distorted or faint, is, nevertheless, appreciable. Still rarer are the cases of acquittal in which the insanity of the perpetrator is so abhorrent as to exclude it from the range of imitation by those who may desire to commit crime with impunity. And if these considerations be thrown aside, there still remains the fact that insane crime becomes epidemic when it becomes heroic; and that the only way to divest it of this quality, is to subject it to that wholesome but homely discipline which strips it of its sentimentality, and, at the same time, destroys its capacity for mischief. In this view it is recommended that wherever such provision does not already exist, there should be a separate penitentiary establishment for insane offenders, where they may continue to be confined, under the severest discipline consistent with health, until it appear on evidence taken upon due notice to

(*l*) Rush on the Mind, pp. 162, 163, 164. (*m*) Siebold, Gericht. Med. § 217.
(*n*) Kailsr. 1764.
(*o*) See also Henke's Zeitschr. 13 Bd. sec. 159.

the prosecuting authorities, that the patient is entirely sane. The propriety of such a course will appear by an examination of the subject under the following heads :—

(1.) Retribution.
(2.) Prevention.
(3.) Example.
(4.) Reform.

(1.) *Retribution.*

§ 260. The question here depends on that of guilt. Was the offender in any sense a moral agent in the act complained of? The answer presupposed by the present inquiry, viz., that of the relations of a person judged irresponsible on account of insanity, is, that he was not. And in a strict technical sense, this is undoubtedly true. The inquiry, however, may be pushed farther back, and here the case of *delirium tremens* may be taken as an illustration.(*p*) *Delirium tremens*, even on the most stringent principles, exonerates its subject from the penal consequences of a crime committed under its direct influence. And yet it is clear, *first*, that *delirium tremens* is the result of a prior vicious indulgence; *second*, that if the patient be permitted to wander about when the delirium continues, he will do further mischief, and, *third*, that if the offender escape with entire impunity, the example will be likely to be followed as a pretext, if not caught as a contagion. And under these circumstances what is to be done? It is plain that some species of confinement must be resorted to ; and that if such a method of discipline be applied, it will be, in a moral point of view, thoroughly justified by the delinquency which was the voluntary cause of the diseased mental condition under which the crime was committed.

§ 261. What has just been said of *delirium tremens* applies with greater or less exactness to all other cases of mental unsoundness. Insanity, which is not congenital, or the result of accident or old age, is, in most cases, the result of causes which the patient himself might have averted if he had chosen.(*pp*) And particularly is this the case with that very species of mental unsoundness —that of monomania, or moral insanity—which is the cause of the greatest difficulty in the present connection. This is very admirably stated by Dr. Barlow, in his powerful essay on this very point :—

§ 262. "I have said that mental derangement and madness are different things ; thus, a person may fancy he sees others around him who have no existence, as in the well known cases of Nicholai, of Berlin, and Dr. Bostock. This is a certain degree of mental derangement while it lasts; but as both soon satisfied themselves that these personages were merely the creation of a morbid physical state, they were not mad. A man of less resolution would have shrunk from the labor of convincing himself that he was fooled by his senses, and would have insisted that the figures were real, and then he would have been mad. On these cases Dr. Connolly very justly remarks, 'Let any

(*p*) This question has already been touched upon, and the authorities bearing upon it have been noticed. See *ante*, §§ 62–70. In opposition to the views expressed in the text will be found Mr. M. B. Sampson's "Criminal Jurisprudence considered in relation to cerebral organization." London, 1843. See also *ante*, §§ 79–85.

(*pp*) See *ante*, §§ 79–85, where this subject is discussed.

one reflect how Nicholai preserved his reason under such visionary and auditory delusions for so many months; and why the English physiologist, though visited with the images which are so well known to be familiar with mad people, never lost the use of his excellent understanding. The ready answer will be, they never believed in their real existence. But why did they not? And why does the madman believe in their real existence? The evidence of both is the same, the plain evidence of sense. The explanation must be this. The printer of Berlin and the physician in London retained the power of comparison: they compared the visual objects of delusion, with the impressions of other senses,' and the perceptions of other persons, and became convinced of their unreality. 'This is exactly what madmen cannot do. One form of madness consists in this very illusion of sense, but it is conjoined with the loss or defect of the comparing power, and the madman concludes that what is only an illusion, is a reality. But the illusion is not the madness.' Thus, according to the opinion of this very able judge, the affection of the brain which causes these delusions, *is not* madness, *but the want of power or resolution to examine them is.* Nothing, then, but an extent of disease, which destroys at once all possibility of reasoning, by annihilating, or entirely changing the structure of the organ, can make a man necessarily mad."(*q*)

§ 263. "A man may labor under a mental delusion, and yet be a responsible agent; and if sanity or insanity be in a great many instances the consequences of a greater or less resolution in exerting the power of reasoning still possessed, the same kind of motives which influence a man in common life, are still available, though they may require to be somewhat heightened. It is on this principle that the treatment of lunatics has been generally conducted. Fear, one of the lowest, but also one of the most general of instinctive emotions, has been called in to balance the delusions of sense, and excepting in cases where the structural disease is so extensive as to deprive the man of all power of connecting cause and effect, it has been found sufficient to curb violence, and enforce a certain degree of peaceable demeanor towards the attendants. And in this the insane person differs not from the cultivated man who is left at liberty, whose self-control rarely amounts to more than the avoiding actions which would have unpleasant consequences to himself. Suppose an irascible man, incensed by a false report, which, however, he believes to be true; he seeks his supposed enemy, and horsewhips, or knocks him down; he does not assassinate, because he fears for his own life if he does; for it is clear that no feeling of duty has held his hand, or he would not have transgressed the laws both of God and man by thus revenging himself. The madman has the false report from his own senses; wherein do the two differ? Neither has employed means within his power to ascertain the truth, and both are aware that such vengeance is forbidden. I can see no distinction between them, save that the delusion of sense has, as a chemist would say, decomposed the character, and shown how much of the individual's previous conduct was rational, and how much the result of mere animal instinct. It would be well for the

(*q*) Barlow on Man's Power over Himself, to Prevent or Control Insanity. London. W. Pickering, 1843. Phila. Lea & Blanchard, 1846.

world if the *soi-disant* sane were sometimes to ask themselves how far their sanity would bear this test, and endeavor to acquire that rational self-command which nothing but the last extremity of cerebral disease could unseat. We do not descend from our high rank with impunity; and as when the matter has become organized, if the process of change, occasioned by the vital force, be impeded or arrested, the plant pines away and perishes; as, after the organs of locomotion have been superadded, the animal debarred from the use of them, languishes and becomes diseased; so man, if he give not full scope to the intellectual force, becomes subject to evils greater than animals ever know, because his nature is of a higher order."(*r*)

§ 264. "Neither do severe injuries from external causes, though, like paralysis, they might cause a loss of those faculties which connect man with the world about him, *necessarily* disconnect him with the world within, so as to place him beyond his own command.

"A case has been communicated to me illustrative of this. A young lad who had been carefully instructed in the principles of religion and virtue, by the clergyman of his parish, afterwards went to sea. When he was about twenty-two, he unfortunately fell from the mast upon his head on the deck, and the injury to the brain was such that he was discharged from the service in a state of imbecility, and sent home to his parish. He was then in possession of the use of his limbs and hearing; but articulation was apparently difficult to him, and collected thought, which should enable him to speak connectedly, still more so; his sight, too, was subject to a delusion which made him imagine he saw gold and silver coin strewed about on the ground; which, as was natural, he eagerly endeavored to pick up. He was now visited by the clergyman who had been the instructor of his youth, who in kind terms assured him he was under a false impression, and advised him to give no heed to what he imagined he saw. The poor young man thanked him, and promised to do as he desired, and for a time abstained from attempting to pick up the coin, but gradually the delusion became too strong for his resolution, and he recommenced. Yet, after every visit from his former instructor, he again controlled himself for a time; and, if he did not come, anxiously sought him at his own house. He died in a few months, but during the whole time was mild and submissive, seeming perfectly aware that his mind was disordered; and, like a child who distrusts his own power, seeking to throw himself on the guidance of one whose kindness he remembered, and whose character he respected. This man was suffering mental derangement from injury of the parts, but was not insane; for the faculties left him were rationally exercised.(*s*)

§ 265. "Cases of this kind have been considered by some as a peculiar type of insanity. By French authors it is entitled *manie sans délire*. Dr. Pritchard styles it *instinctive madness*. I am inclined, nevertheless, to refer such deranged propensities in some instances to a peculiar morbid state of sensation, and these will come under the head we are now considering, conse-

(*r*) Barlow on Man's Power over Himself to Prevent or Control Insanity. London, W. Pickering, 1843. Philadelphia, Lea and Blanchard, 1846. (*s*) Ibid.

quently the desire is not irresistible, though strong, for we see that it has been successfully resisted; in others I should refer it to the second class, under the head of 'Inefficiency of intellectual force,' and then it depends on the resolution of the person so affected whether the morbid sensation shall be meditated on and indulged, and thus acquire fresh force, or whether by exciting other sensations, it shall be weakened and by degrees vanquished.

§ 266. "There is no greater error than to suppose that thinking about a propensity which ought not to be gratified, will conquer it; on the contrary, every hour of lonely thought gives it fresh force; but let the man plunge into business that must be attended to, or even a lighter occupation, so it be an engrossing one; and do this resolutely, however irksome it may at first appear, and the very repose thus given to the diseased part, if there be disease, by throwing the whole stress on other portions of the brain, will assist in effecting a cure.(*t*)

§ 267. "When a man has reached mature age without making any effort to render the brain subservient to the rational will, the fatigue and even pain consequent on the endeavor to obtain the mastery over it, is such, that few have resolution to undergo it voluntarily. Thus the man subsides more and more into the animal, and is at last guided only by those instinctive emotions which belong to the vital force merely. His passions assume a delirious violence, and he is only distinguished from the brute from the greater skill with which he pursues their gratification. There is no *disease* of brain, but it has been left unexercised and ungoverned till it is as unmanageable as a limb that has been treated in the same way.

"Toes have been used for writing and other arts which are usually performed by fingers; they are *capable*, therefore, of such use, but those who have constantly worn shoes cannot direct one toe separately from the rest, as they can the fingers. Yet with much trouble this power of directing might be acquired. It is thus that the brain, unaccustomed to direction from the intellectual force, rebels against it, and if this latter fails to assert its sway, it may justly be termed inefficient. In a man thus animalized, the actions differ from those of his more spiritualized fellow men, who happily are more numerous; and when they find no such motive as *they* would consider a sufficient one for his conduct, they call him mad, by way of accounting for it. He commits a crime, and a plea of insanity is set up as a shelter from punishment. I will give an instance. It is recorded by the elder Pinel: 'An only son, educated by a silly and indulgent mother, was accustomed to give way to all his passions without restraint. As he grew up, the violence of his temper became quite uncontrollable, and he was constantly involved in quarrels and law-suits. If an animal offended him, he instantly killed it: yet, when calm, he was quite reasonable, managed his large estate with propriety, and was even known to be beneficent to the poor; but one day, provoked to rage by a woman who abused him, he threw her into a well. On his trial, so many witnesses deposed to the violence of his actions, that he was condemned to

(*t*) Barlow on Man's Power over Himself to Prevent or Control Insanity. London, W. Pickering, 1843. Philadelphia, Lea & Blanchard, 1846.

imprisonment in a mad-house.' Yet any choleric man who does in his rage what he is sorry for afterwards, is as much insane as this man was; both are under the influence of the vital force. A shock to some nerve of sensation stimulates the sympathetic system; the circulation is hurried, and the blood flowing more rapidly through the brain, gives an unusual activity to the motor nerves, the movements are sudden and violent, the speech hurried, loud, and perhaps incoherent; but the intellectual force knows the source of these symptoms, and can curb them by resolute silence and inaction till the blood again flows at its usual pace; if it does not, the man, for a time, is in a state of mania, but is not the less responsible for having allowed himself to be so.

"Let us suppose another case; the thing is so constantly seen that every one could quote examples of it. A man unaccustomed to self-control, becomes occupied by one thought: his ambition has been disappointed, perhaps, or a law-suit has plagued him, or he has been much employed in some engrossing pursuit. Unable to regulate his thoughts at will, he finds the one which circumstances have made habitual, recur uncalled for. An effort would dismiss it, for every one who has studied, knows that he has had to dismiss many an intruding thought, and with some effort, too, if he wished to make progress in what he has undertaken; but this individual has never been accustomed to make any such effort, and he knows not how to free himself from the subject which thus haunts him. If it be an unpleasant one, he is wearied and worn by it; but every day that it is not driven off, it assumes a greater power, for the part of the brain thus brought into action is now by habit rendered more fit for use than any other: he has not resolution enough to free himself from his tormentor by a determined application to something else which would require all his attention; he sits brooding over it, and when life has thus become irksome, he strives to terminate his discomfort by suicide; yet, here is no structural disease; and if the man could be persuaded to exert himself, he might be sane. I will give an instance. The master of a parish workhouse, about thirty years of age, was subjected frequently to groundless suspicions of peculation. Being naturally a taciturn, low-spirited man, these false accusations which involved his character, and consequently the maintenance of his family, preyed upon his mind, and a profound melancholy was the result, attended by the usual symptomatic derangement of the digestive functions, and a constant apprehension that he had done something wrong, he did not know what. No assurance on the part of those who knew and esteemed him had any effect, and finally, after some months of melancholy, he attempted to destroy himself. He was then removed to St. Luke's Hospital, whence, after a year had elapsed, he was discharged incurable. He was now placed in a private receptacle of the insane, and here suffered all the misery which at that time pauper lunatics were subjected to. He was visited at this place by a benevolent man, who, seeing his state, immediately ordered him to be removed into the gentleman's apartments, and paid for his maintenance there. In a few months afterwards he was visited by the clergyman of his parish, who, on conversing with him, considered him sane. The man begged to be allowed to rejoin his wife and family, and the rector, after many difficulties and some threats to the parish authorities, succeeded in setting him free. The man from

that time was able to maintain his family by his trade of shoemaking, for if ever a fit of melancholy came over him, a threat from his wife that he should be sent back to the madhouse was sufficient to engage him to make an effort to resume his cheerfulness; and he remained to old age a sane man. Here the insanity had been merely *inefficiency of the intellectual force.* Placed in a situation of comparative ease, his mind had become calm; the wish to return to his wife and family, and the hope of it, kept up by the visits of benevolent friends, did the rest: for, be it observed, during the whole time he never felt himself abandoned. The poor and the uneducated are the classes which most usually suffer from the *inefficiency* of the intellectual force; it is among the higher ranks usually that its *misdirection* is a source of insanity. Among these, more distant objects of pursuit keep the thoughts longer upon the stretch towards one point; the organs of mechanical memory are strengthened, nay, even strained by the habit of learning much by rote, while the constant supply of learning ready-made, leaves no necessity for the more laborious processes of reasoning and comparison. Hence we not unfrequently find an elegant scholar, who can readily quote the words and opinions of others, unable himself to carry on a course of close argument, or to *prove* the truth of what he advances. Whoever has moved in society, knows that it is rare to meet with any one who can command his thoughts in conversation frequently to reject all that is not relevant to the subject, so as to keep on the chain of reasoning unbroken.(*u*)

§ 268. "When the mind is thus exercised in remembering the opinions of others, thus unaccustomed accurately to examine its own, what wonder is it if it should become prepossessed with some irrational notion which cannot be removed by reasoning, because the individual man in his healthiest state had never chosen so to exercise his mind; or if, when a delusion of sense occurs, he should choose rather to act upon it as truth, than to examine into the grounds he has for believing it to be such. It is a melancholy fact that a great number of mankind are in this state as regards the faculties most requisite to self-control, and depend far more on the accident of good health, than the exertion of their own intellectual power, for their sanity. I have heard of more than one instance of *hard livers*, as they were termed, who probably, in consequence of a slight affection of the brain from the unnatural stimulus of wine long kept up, became possessed with an opinion that they were slighted by one or more of their friends; and, resisting all reasoning on the subject, ended by destroying themselves. Yet, they were rational on other matters of importance, and therefore it is to be concluded, that even on this point, they were capable of being rational also, had they chosen to make the exertion. It is recorded of Henri of Bourbon, son of the great Condé, that at times he imagined himself transformed into a dog, and would then bark violently. Once this notion seized him while in the king's presence; he then felt it needful for him to control himself, and he did so; for though he turned to the window, and made grimaces as if barking, he made no noise. Had the king's eye been upon him, it is probable that he would have avoided the grimaces also."(*v*)

(*u*) Ibid.

(*v*) Ibid. See *ante*, 78–85.

§ 269. "The indulgence of violent emotions," observes Dr. Connolly, "is singularly detrimental to the human understanding, and it is to be presumed, that the unmeasured emotions of insanity are sometimes perpetuated in consequence of the disorder of brain originally induced by their violence. A man is at first only irritable, but gives way to his irritability. Whatever temporarily interferes with any bodily or mental function, reproduces the disposition to be irritated, and circumstances are never wanting to act upon this disposition till it becomes a disease. The state of the brain, or part of the brain, which is produced whenever the feeling of irritation is renewed, is more easily induced at each renewal, and concurs with the moral habit to bring on the paroxysm on every slight occasion—other vehement emotions and passions effect the same disorders of the mind."(*w*)

(2.) *Prevention.*

§ 270. A very eminent American physician tells us, that "no argument should weigh, for a moment, with a court of justice, in favor of liberating such an individual (one subject to homicidal mania). The fact that life has been taken, should overbalance all motives to send such person into society again, while the delusions and estrangements of insanity continue; and, we add, not until months, if not years, of peace, and freedom from excitement should have confirmed their entire release from this dangerous form of disease." "We recently attended," says the same authority, "an interesting trial on a subject of this nature in a neighboring county in this State. An habitually peaceful and worthy man was indicted for the most shocking murder of his wife, with an axe, and a horrible attempt upon the lives of his children with the same weapon. The facts were not denied, and his only defence was, that of insanity. He was acquitted, principally upon our testimony as to the fact of his being insane at the time the murder was committed, of which we have not the slightest doubt; but our astonishment was only exceeded by our alarm, when subsequently informed that bail had been admitted, and this afflicted, but truly dangerous man, was permitted to go at large. This ought not to be so. Science and humanity may interpose for the life of the homicide, but society should ever be protected from the effects of his dreadful disease. The lunatic asylum is their proper place; and it should be duly prepared for their reception and detention."(*x*)

§ 271. The man who, in an insane impulse, kills one man, is more than likely, under the same impulse, to kill another. And, indeed, the several facts of moral mania imply a chronic tendency to the particular crime. This was agreed on all sides in Hadfield's case, where the point was first mooted. "For his own sake," said Lord Kenyon, "and for the sake of society at large, he must not be discharged, for this is a case which concerns every man of every station, from the king upon the throne to the beggar at the gate; people of both sexes and all ages may, in an unfortunate, frantic hour, fall a sacrifice to

(*w*) Ibid.
(*x*) Dr. Woodward, cited in 4 Journal of Psychological Medicine, p. 469.

this man, who is not under the guidance of sound reason, and therefore it is absolutely necessary, for the safety of society, that he should be properly disposed of, all mercy and humanity being shown to the unfortunate creature; but, for the sake of the community, he must somehow or other be taken care of, with all the attention and all the relief that can be afforded him." Hereupon the counsel for the crown and the counsel for the defendant agreed that the safety of the community required that he should be taken care of. "It is laid down in some books," said the former (Sir John Mitford, afterwards Lord Redesdale), "that, by the common law, the judges of every court are competent to direct the confinement of a person under such circumstances." "That may be, Mr. Attorney-General," interposed Lord Kenyon, "but at present we can only remand him to the confinement he came from; but means will be used to confine him otherwise in a manner much better adapted to his situation." It was then suggested by Mr. Garrow (afterwards a baron of the exchequer) that "it would be for the benefit of posterity if the jury would state in their verdict the grounds upon which they gave it, viz., that they acquit the prisoner of this charge, he appearing to them to have been under the influence of insanity at the time the act was committed. There would then," he added, "be a legal and sufficient reason for his confinement."(*y*) This recommendation was adopted by the jury, who returned a verdict in these terms. Thus originated the form of verdict now commonly returned in cases of this description.

(3.) *Example.*

§ 272. The recorded cases are numerous in which the supposed irresponsibility of lunatics has led to the perpetration of crime by the insane. "They cannot hang him," was whispered about in the York Lunatic Asylum, when the firing of York Minster by a supposed lunatic was under consideration, "he is one of ourselves." And one of the most dangerous convicts in the Eastern Penitentiary—one laboring under homicidal mania in its most inveterate shape—was constantly expressing his disappointment at finding that, notwithstanding his *acquittal* on the ground of insanity, he was to be continued in prison. He had, in fact, supposed himself privileged by his disease to commit this particular crime.(*yy*) And even taking the strongest case—that of the man who is possessed by a homicidal mania which equals in intensity the

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(*y*) Howell's State Trials, vol. xxvii. p. 1354 et seq. Suggestions for the future Provision of Criminal Lunatics, by W. Charles Hood, M. D., London, 1854, pp. 16, 17.

(*yy*) In reference to this case I have the following note from Mr. David Paul Brown, who was counsel for the person mentioned:—

"You refer, as I suppose, to the case of Wiley Williams, who shot Dr. Kirkbride. I have some knowledge of that case, tending clearly to show, in your language, that 'the recorded cases are numerous in which the supposed irresponsibility of lunatics has led to the perpetration of crime by the insane.'

"Shortly before Williams shot Dr. Kirkbride, I received a letter from the lunatic, in which he complained of his sufferings during several months of confinement at the asylum, expressed his delight at his escape, and desired to know what redress he could obtain for the injuries he had unjustly sustained. In conclusion he stated that if the law did not furnish redress, he would be his own avenger. 'If,' says he, 'I was not insane when I was placed in the asylum, those who put or those who kept me there deserve death for their cruelty; and if I was insane, then, if I kill them, my insanity will exempt me from the consequences of crime!'"

passion of particular classes of dogs for sheep's blood—we will have strong ground to believe that such an instinct can be tutored. Monomanias, in fact, are epidemics, and spread precisely to the degree in which they are invested with sentimental celebrity. The Leipsic "Mädchen-Schneider," who when charged with gratifying a morbid sexual impulse by striking lancets in the arms of such young girls as he might meet in a crowded street, never exercised this propensity except when it was likely it would be undetected. Shame and the fear of punishment restrained him thus far; but it was quite otherwise when he became the object of a sentimental curiosity, which visited him during his trial and imprisonment with the same attentions, perhaps more, which would have been paid to a live mermaid or the Siamese twins. The monomania became an epidemic, and would have continued so had not an ignominious punishment been affixed.

(4.) *Reform.*

§ 273. To permit a monomaniac to go at large, will be to give fuel to his disease, as well as to supply it with victims—

> "Mobilitate viget,
> Viresque acquiret eundo."

And to nothing does this apply with greater force than that exaggerated state of the moral system which has just been discussed. If the indulgence in passion, even in a healthy mind, tends, as has been just shown, to derangement, it will readily be seen that no recovery can be effected while the patient is permitted to run at large, exposed to all the irritating influences of unguarded society, and gathering a momentum for *coming* excesses from the very liberty he is allowed in the present.

§ 274. Dr. Mayo thus well illustrates the awkward position of insane criminals under the present administration of the law: "It must be confessed that the conditional responsibility which the law, and, as I think, the reason, of the case attributes to the insane is not easily applicable in practice, either under lucid intervals, or under such other phases of the insane state as might seem to justify it. The law will remain a dead letter, or will be continually ignored by the sympathies of judges, juries, and, I may add, of medical witnesses, unless some practical distinction can be arranged which may enable the responsible insane to undergo some lower degree of punishment than that inflicted on similar delinquents being of sound mind. The position of many such persons under capital charges is at present anomalous. They are acquitted in defiance of the law, as laid down by the judges respecting M'Nughten's case, because the punishment at present appertaining to the offence would be too severe; and then, instead of being consigned to confinement in a gaol, as a secondary punishment, they are consigned to it in an asylum, as a place simply of detention. This becomes a scene of severe virtual punishment to some of them, of gratification to vanity and idleness to others; those, meanwhile, to whom it is a grievance, as they do not regard it in the light of a punishment, derive from it none of the preventive effects of punishment on future conduct, while the public, for the same reason, find it equally unproductive of good, as

an example to persons of actually diseased mind, or to that large class of other persons who are drifting into disease under uncontrolled eccentricity."(z)

§ 275. It is impossible to carry out the proper disciplinary and remedial measures in a penitentiary common to the sane and insane. "I am satisfied of the fact," says Dr. Hood, "that criminal lunatics are more difficult to manage than other lunatics; there is more irritability of temper and general restlessness about them; they are cognizant of the offences they have committed, and being under the impression that they will never recover their liberty, they are less disposed to be contented or happy. They are also conscious that they are separated into and form a distinct class of patients, and this very circumstance establishes a species of fraternity among them; for they are in constant communication with each other, and their curiosity is naturally excited to ascertain the circumstances connected with every new arrival. They thus soon become acquainted with each other's history, which is often the cause of much quarrelling and mutual recrimination; the better class of patients are unhappy at being associated with the inferior order—criminals whose manners and language are habitually of the most revolting description. Hence I conclude that the fundamental principle upon which we should proceed, in providing for the safe custody, maintenance, and medical care of our criminal lunatics, should be that of establishing a certain classification among them, founded upon the degrees or nature of the crimes which they may have committed. This principle conceded, we have then to consider the expediency or inexpediency of organizing a State lunatic asylum for their common reception; the possibility or impossibility of each county providing adequate accommodation in existing asylums for its own criminal lunatics; and whether arrangements might not be made in prisons, and houses of correction, for the medical treatment of such prisoners as may, while undergoing imprisonment or penal servitude, become insane."(a)

§ 276. On the other hand, the confinement of an insane criminal in an ordinary lunatic asylum, is beset with still greater difficulties. "It is," says Dr. Hood, "not only annoying to other patients, but greatly disturbs the ordinary discipline of the establishment; for be it observed, lunatics, whether criminal or non-criminal, are capable of some degree of reasoning; and their conscious incapacity of enjoying this faculty to its full extent, often recoils painfully upon their feelings, and becomes, in itself, a source of irritation. In providing, indeed, for the safe custody, and the management of the insane of all classes, we should proceed upon the same principles as if we were legislating for professedly sane persons; because, the mind is never totally eclipsed, there is always some lingering ray of light which the intact reflection may seize upon with instinctive truthfulness."(b)

§ 277. *Concluding observations on the remodelling of our present system.*—If the views taken in the preceding sections be sound; if, in the first place, there are inherent difficulties in the way of making insanity a ground

(z) Mayo on Medical Testimony in Lunacy, pp. 50–52.
(a) Suggestions for the future provision of Criminal Lunatics, by W. Charles Hood M. D. London, 1854. pp. 28–29.
(b) Ibid. pp. 27, 28.

of defence on the trial of a man, who, on this hypothesis is psychologically incapable of either tendering or preparing any such issue;(c) if, in the second

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(c) The absurdity of our present practice, in making insanity a personal defence, to be taken or rejected by the alleged lunatic in the exercise of a volition which the very nature of the defence supposes him incapable of exercising, is fully exhibited by the following case:—

SUPREME COURT OF THE STATE OF LOUISIANA.

The Court met Monday, April 9th, 1855.

Present, their honors Thomas Slidell, Chief Justice; Cornelius Voorhies, A. M. Buchanan, A. N. Ogden, H. M. Spafford, associate justices.

3838. The State of Louisiana, appellee, *v.* James Patton, appellant. } Appeal from 1st District Court, New Orleans.

Spafford, Justice, delivered the opinion of the Court.

Upon the trial of James Patton for the murder of Walter Turnbull, the following bill of exceptions was taken by the prisoner's counsel:—

Be it remembered, that on the trial of this cause, on the 20th day of March, 1854, after the evidence on the part of the State was closed, and when the counsel of the prisoner were proceeding to prove by the evidence of witnesses the insanity of the said prisoner, at the time of the killing set forth on the indictment, and a long time before, and ever since the said killing, the said prisoner arose and objected to and repudiated the said defence, and insisted upon discharging his counsel, and submitting his case to the jury without any further evidence or action of his counsel in his defence; his counsel opposed and remonstrated against the prisoner's being permitted to do so, alleging that they were prepared to prove the defence by clear and irresistible testimony; but the court overruled the objection of the said counsel, and permitted the prisoner to discharge his counsel, and refused to hear them further on his defence, and gave the case to the jury without any further evidence or pleading on his behalf; to all which opinion and ruling of said court the defendant's said counsel excepts, and prays his exceptions may be signed, &c.

(Signed) John B. Robertson, *Judge.*

There was a verdict of "guilty without capital punishment"—and, after the former counsel had in the quality of *amici curiæ* attempted to obtain a new trial and arrest of judgment without success, the prisoner was sentenced to hard labor for life in the penitentiary.

From this judgment the present appeal has been taken:—

The sanity or insanity of the prisoner is a matter of fact; the admissibility of evidence to establish his insanity, under the circumstances detailed in the bill of exceptions, is a matter of law, and the only matter which the constitution authorizes this tribunal to decide.

The case is so extraordinary in its circumstances that we are left without the aid of precedents.

In support of the ruling of the district judge, it has been urged that every man is presumed to be sane until the contrary appears, and that a person on trial for an alleged offence has a constitutional right to discharge his counsel at any moment, to repudiate their action on the spot, and to be heard by himself; hence the inference is deduced that the judge could not have admitted the evidence, against the protest of the prisoner, without reversing the ordinary presumption, and presuming insanity.

In criminal trials, it is important to keep ever in mind the distinction between law and fact, between the functions of a judge and those of a jury.

It was for the jury, and the jury alone, to determine whether there was insanity or not, after hearing the evidence and the instructions of the court as to the principles of law applicable to the case.

By receiving the proffered evidence for what it might be worth, the judge would have decided no question of fact; he would merely have told the jury, "the law permits you to hear and weigh this evidence; whether it proves anything it is for you to say."

By rejecting it, he deprived the jury of some of the means of arriving at an enlightened conclusion upon a vital point peculiarly within their province, and in effect decided himself, and without the aid of all the evidence within his reach, that the prisoner was sane.

It is idle to say that the legal presumption, and the prisoner's own declarations, appearance and conduct on the trial, established his sanity to the satisfaction of both

place, the doctrine of instinctive or moral mania be allowed in legal theory the sweep which is asserted for it by medical experts, and which in this country at least is conceded to it by the courts; if, in the third place, it be right that the present system of confinement of insane criminals be remodelled—then it will become necessary for those to whom the work of legislation is committed to amend the law so as to reserve the question of insanity to be determined by a competent tribunal *after* a conviction of the fact of guilt. For the following undeniable evils result from the present system:—

(a.) A tribunal of, at least, but secondary competency is charged with the determination of the most difficult and yet most momentous question to which human observation can be applied.(*d*)

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judge and jury; for presumption may be overthrown, declarations may be unfounded, and conduct and appearances may be deceitful; and the prisoner's counsel, sworn officers of the court, with their professional character at stake upon the loyalty of their conduct, alleged that they stood there prepared to prove, by what they deemed clear and irresistible testimony, that the accused was insane at the time of the homicide, long before, and ever since; so that the sole inquiry now is, not whether they or the court were right as to the fact of sanity upon which we can have no opinion, but whether they should have been allowed to put the testimony they had at hand before the jury, to be weighed with the counter evidence.

If the prisoner was insane at the time of the trial, as counsel offered to prove, he was incompetent to conduct his own defence unaided, to discharge his counsel, or to waive a right.

Upon the supposition that the counsel were mistaken in regard to the weight of the evidence they wished to offer, as they may have been, still its introduction could do the prisoner no harm, nor could it estop him from any other defence he might choose to make on his own account; neither could it prejudice the State, for it is to be presumed that the jury would have given the testimony its proper weight; if, on the other hand, the counsel were not mistaken as to the legal effect of this evidence, the consequences of its rejection would be deplorable indeed.

The overruling necessity of the case seems to demand that, whenever a previous soundness of mind and consequent accountability for his acts are in question, the rule that he may control or discharge his counsel, at pleasure, should be so far relaxed as to permit them to offer evidence on those points, even against his will. Considering, therefore, that it would be more in accordance with sound legal principles, and with the humane spirit which pervades even the criminal law, to allow the rejected testimony to go before the jury, the cause must be remanded for that purpose.

It was said in argument, on behalf of the State, that the alleged insanity was, at most, but a monomania upon another topic, which could not exempt the prisoner from responsibility for the homicide.

The judge will instruct the jury in regard to the principles of law which govern this subject, when all the facts shall have been heard. At present, the discussion is premature.

It is therefore ordered, adjudged, and decreed that the judgment of the court below be reversed, the verdict of the jury set aside, and the cause remanded for a new trial according to law.

(*d*) Dr. Hood very justly remarks: "All human tribunals are fallible, and how, when this plea of insanity is raised, can we unveil the mind of the accused, and determine where responsibility ends and irresponsibility begins? We may appreciate outward and visible signs, but we have no *mentometer* (if I may be allowed to coin a word) which will indicate the thoughts that may be passing through the mind. In medical jurisprudence the diagnosis between sanity and insanity is, in many cases, infinitely difficult; and it is upon this account that specialists in this branch of our profession so often come into collision with members of the bar, and draw down upon themselves occasionally animadversions from the judges on the bench. There would be no difference of opinion between the two learned professions if we could arrive at any fixed principles by which we could explain the silent operations of the mind; but this, so far as insanity is concerned, is as impossible in law as it is in medicine. We may adjudicate upon the overt act, but the motive which dictated it will very often elude the most searching examination. But this happens continually in sane

(b.) A subject is introduced into the question of guilt or innocence, as to which no fixed judicial rules can be laid down, and which really concerns only the character and the extent of punishment.

(c.) A fearful confusion takes place between the *sane* convict; the *malignant insane* convict, who requires discipline and is, in some degree, morally responsible; the *innocent insane* convict;(*e*) and the *lunatic*, who is in confinement but is not charged with crime: for all of whom there is in some jurisdictions but *one* common method of discipline provided, viz: that of the penitentiary; in others, but *two*, that of the penitentiary and of the ordinary lunatic asylum. The result of this is acquittals in some cases, when there should be convictions; convictions in other cases when there should be acquittals, and in almost all cases an erroneous system of punishment.

The remedy for these difficulties is one to which we must come sooner or later, and for which the common law has been from the beginning always striving, and yet always losing from almost its very grasp. It is to confine the inquiry before the court and jury to the mere *factum* of the commission of the offence; reserving the question of treatment to be determined by a special commission of experts, to be appointed for the purpose of examining convicts alleged to be insane. The proposition to be put by the court to the jury, under such circumstances, is not, "Was the defendant capable of judging between right and wrong?" a proposition which no jury can determine, but, "Did he," as a matter of fact, "commit the specific act charged?" For whether he committed it as sane or insane, the result is, if the offence in point of law be indictable, that the safety of society requires that he should be placed in seclusion for such a period as will promote the joint ends of personal reformation and the preservation of the well-being of the community at large. If he be guilty without the palliation of mental infirmity, certainly the severest penal code—with the single qualification of cases of murder in the first degree—can ask nothing more than this. If, on the other hand, he was at the time laboring under mental derangement, in no other way can the extent of his responsibility be accurately determined, and the proper degree of discipline adjusted. For this great question of sanity or insanity can really be only determined by those to whose daily and hourly care the convict is committed, and who have thus full opportunity of inquiring into his antecedent as well as his present condition. "Thus," to adopt the language of a late very intelligent commentator,(*f*) "except as regards the curative course to be adopted, on our view of the case, the subtle line of distinction which there have been so many abortive attempts to draw, between criminal and non-criminal lunatics, is of no practical importance, and the unavailing search,

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as well as in insane life."—*Suggestions for the future Provision of Criminal Lunatics*, by W. C. Hood, M. D. London, 1854.

And we may add to this the testimony of a great poet on a kindred point:—

> "May it please your Excellency, your thief looks
> Exactly like the rest, or rather better;
> 'Tis only at the bar *or in the dungeon*
> That wise men know your felon by his features."

(*e*) See as to distinction between these, *ante*, §§ 232–251.

(*f*) XXI. London Law Review, 364.

unless as a matter of metaphysical speculation, may be abandoned as unnecessary. In either case, the person concerned, whether called a lunatic, a criminal lunatic, or an ordinary criminal, should be so placed as to put it out of his power to inflict further injury, and to afford the most likely means for his cure." And thus, also, not only will the sanctions of human life and property be protected from the recurrence of those monstrous acquittals, by which, under the plea of insanity, the most dangerous criminals are suffered to run at large, but the interests of humanity will be subserved by a proper discipline, as well as a just classification, of those whose accountability is diminished or destroyed.(*g*)

(*g*) "I may be asked what principle I would propound for the guidance of courts of law in these cases. I cannot but repeat what I have already declared to be my conviction, that in *every criminal case where the question of responsibility arises in the course of judicial inquiry:* IF IT BE POSSIBLE TO ESTABLISH ANY DEGREE OF POSITIVE INSANITY, IT SHOULD ALWAYS BE VIEWED AS A VALID PLEA FOR A CONSIDERABLE MITIGATION OF PUNISHMENT, AND AS PRIMA FACIE EVIDENCE IN FAVOR OF THE PRISONER; AND IN NO CASE WHERE INSANITY CLEARLY EXISTS (WITHOUT REGARD TO ITS NATURE AND AMOUNT) OUGHT THE EXTREME PENALTY OF THE LAW TO BE INFLICTED.

"What, I may be asked, is my test of insanity? I have none. I know of no unerring, infallible, and safe rule or standard, applicable to all cases. The only logical and philosophic mode of procedure in doubtful cases of mental alienation, is to compare the mind of the lunatic at the period of his suspected insanity with its prior natural and healthy condition: in other words, to consider the intellect in relation to itself, and to no artificial *à priori* test. Each individual case must be viewed in its own relations. It is clear that such is the opinion of the judges, notwithstanding they maintained as a test of responsibility a knowledge of right and wrong. Can any other conclusion be drawn from the language used by the judges when propounding in the House of Lords their view of insanity in connection with crime? 'The facts,' they say, 'of each particular case must of necessity present themselves with *endless variety and with every shade of difference in each case;* and as it is their duty to declare the law upon each particular case, upon facts proved before them, and after hearing arguments of counsel thereon, they deem it at once *impracticable, and at the same time dangerous to the administration of justice, if it were practicable, to attempt to make minute applications of the principles* involved in the answers given by them to the questions proposed.' This is a safe, judicious, and philosophic mode of investigating these painful cases; and if strictly adhered to, the ends of justice would be secured, and the requirements of science satisfied.

"In considering the question of modified responsibility in connection with these cases of alleged insanity, we should never lose sight of the fact, that, even if a lunatic be fully exonerated and acquitted in consequence of his state of mind, he is doomed to linger out the remainder of his miserable existence in the criminal wards of a public lunatic asylum.

"To talk of a person escaping the extreme penalty of the law on the plea of insanity, as one being subjected to no kind or degree of *punishment*, is a perfect mockery of truth and perversion of language. Suffer no punishment! He is exposed to the severest pain and torture of body and mind that can be inflicted upon a human creature short of being publicly strangled upon the gallows. If the fact be doubted, let a visit be paid to that dreadful *den* at Bethlehem Hospital—

> '*Regions of sorrow, doleful shades, where peace*
> *And rest can never dwell, hope never come,*
> *That comes to all*'—

where the criminal portion of the establishment are confined like wild beasts in an iron cage!

"Much has been said of the deterring effects of capital punishment. I do not doubt its having some effect in preventing crime; but I incline to the opinion that if the real condition of those confined as criminal lunatics was well understood (assuming the insane to be amenable to the fear of punishment), it would act more potently as a deterring agent than any apprehension they might feel at the prospect of a public execution.

"It was the opinion of Beccaria that the impression made by any punishment was in proportion to its *duration*, and not to its *intensity*. 'Our sensibility,' he observes, 'is more readily and permanently affected by slight but reiterated attacks than by a

violent but transient affection. For this reason, the putting an offender to death forms a less effectual check to the commission of crimes than the spectacle of a man kept in a state of confinement, and employed in hard labor to make some reparation, by his exertions, for the injuries he has inflicted on society.'

"In judicially estimating cases of crime connected with alleged conditions of insanity, it is our duty always to bear in mind that if an error be committed on the side of undue severity, it never can be remedied.

"No reparation can be made for so great an injury—for so serious an act of injustice. If a criminal should be unjustly acquitted on the plea of insanity (and I admit such cases have occurred), a degree of injury is undoubtedly done to society, and the confidence in the equitable administration of justice is, to an extent, shaken. But can a judicial mistake like this for one moment be compared with the serious and fatal error of consigning an irresponsible creature to a cruel and ignominious death?

"It is well observed by Bentham that 'the minimum of punishment is more clearly marked than its maximum. What is *too little* is more clearly observed than what is *too much*. What is not sufficient is easily seen; but it is not possible so exactly to distinguish an excess. An approximation only can be obtained. The irregularities in the force of temptation compel the legislator to increase his punishments until they are not merely sufficient to restrain the ordinary desires of men, but also the violence of their desires when unusually excited. The greatest danger lies in an error on the minimum side, because in this case the punishment is inefficacious; but this error is least likely to occur, a slight degree of attention sufficing for its escape; and when it does exist, it is, at the same time, clear and manifest, and easy to be remedied. An error on the maximum side, on the contrary, is that to which legislators and men in general are naturally inclined; antipathy, or a want of compassion for individuals who are represented as dangerous and vile, pushes them onward to an undue severity. It is on this side, therefore, that we should take the most precautions, as on this side there has been shown the greatest disposition to err."—*Winslow's Essay on Legal Responsibility*, 15 Am. Journ. of Insanity, p. 191.

See also an interesting essay on Criminal Insane, Insane Transgressors, and Insane Convicts, by Edward Jarvis, M. D., of Dorchester, Mass., in the 13th volume of the Am. Journ. of Insanity, p. 195.

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CHAPTER I.

SIGNS OF PREGNANCY.

§ 278. Signs of pregnancy may be divided into the certain and uncertain. Until the period at which the pulsation of the fœtal heart becomes audible there is not one sign, nor indeed any combination of signs, which will not occasionally prove treacherous. Some practitioners are in the habit of relying upon signs which by others are considered of trivial or doubtful significance. It may be remarked, moreover, that evidence of pregnancy which would be quite convincing to a practitioner of midwifery, may not be so readily accepted by a medical jurist. The latter, naturally, lays greater stress, by far, upon exceptional cases. In this view, we class among the uncertain signs of preg-

nancy suppression of the menses, enlargement of the abdomen, quickening, and the sympathetic phenomena.

§ 279. 1st. *Suppression of the menses.*—When the catamenia are arrested in a woman previously regular, and the suppression is not followed by any morbid symptoms, this sign is usually considered quite a positive one. The exceptions that may be taken to it depend upon the great irregularity and frequent abnormal conditions of this function. Thus, pregnancy may occur in women who have never menstruated. Dr. Gregory, of Missouri, relates the case of a woman who had six living children, and had never menstruated. M. Gillette communicated to the Société d'Emulation de Paris the case of a woman who had borne three children, was thirty-five years of age, but had never menstruated or had any vicarious discharge. Other cases are referred to in the *Am. Journ. of Med. Sci.* for April, 1844. Many similar ones are cited by Dr. Reid, from Baudelocque, Lamotte, Velpeau, Bull, and others;(*a*) and the number is still further increased by those collected or reported by Montgomery.(*b*) The same authors also mention not a few examples of pregnancy occurring in women who for one or more years have ceased to menstruate.(*c*) The temporary absence of the menses is, moreover, not always an obstacle to impregnation, and in some cases, which are perfectly well authenticated, they were perceived only during the pregnant condition. Baudelocque and Deventer state that they have observed instances of this kind. A still more remarkable abnormality has been witnessed in some women, who have menstruated for the first time subsequent to impregnation. Cases also are occasionally met with in which the menstrual flux, or a discharge which cannot easily be distinguished from it, occurs at the usual periods during pregnancy as well as before it, and instances are not at all infrequent in which the menses return during the early months, only in smaller quantity than usual, and for a shorter time. Burton, Maunsell, Campbell, and others, mention cases in which they appeared three, four, and six times; similar instances fell under the observation of Dr. Tyler Smith;(*d*) and Dr. Gibb has reported one in which menstruation continued during eighteen months of lactation, and nearly nine months of the pregnancy which then took place.(*e*) On the other hand, the catamenia may be suppressed from various causes, and sometimes with no immediate bad consequences. Hence, although, as a general rule, suppression of the menses is the earliest indication of the existence of pregnancy, it cannot be relied upon as at all positive in its nature.

§ 280. 2d. *Enlargement of the abdomen, &c.*—In pregnancy, the prominence of the abdomen generally becomes obvious about the end of the third month; and, from this time, the period of pregnancy can be ascertained in an approximate manner, by the gradual ascent of the womb. Nothing, however, can be more erroneous than to consider a prominent abdomen a proof of pregnancy. It may be due to dropsy, to a distended urinary bladder, or to various

(*a*) Lancet, Sept. 1853, p. 206.
(*b*) Signs and Symptoms of Pregnancy, 2d ed. p. 77.
(*c*) A recent American case is that of Dr. Gibbs, N. Am. Med. and Surg. Journal, i. 741.
(*d*) Lancet, Feb. 1856, p. 197.
(*e*) Ibid., Nov. 1858, p. 475.

kinds of tumors of the ovaries or uterus, or to enlargement of the spleen or liver, or to accumulations of flatus or of feces, and it may also arise from a retention of the menstrual discharge. So far from being a good sign of pregnancy, it should not be taken into consideration until a fair presumption is first established by other evidence. The sad story of Lady Flora Hastings, who was prematurely hurried to the grave by the brutal calumnies which the alteration in her shape, from disease, had given rise to, may serve as a caution to those who are over hasty in their opinions.

Enlargement of the abdomen, even independently of any solid tumor, in many cases simulates the distended uterus so exactly, and is so often associated with other signs of pregnancy, and particularly with the sensations of a moving body within the abdomen, as to deceive not only the patient, but even the experienced physician. It would scarcely be believed were it not fully authenticated, that the Cæsarean section has been performed to remove the fœtus in such cases which were mistaken for examples of ovarian pregnancy. Five of them are referred to by Montgomery,(*f*) and Dr. Simpson states that six are recorded in which when the abdomen was opened nothing unusual or abnormal was discovered except a slight degree of distension of the bowels.(*g*) Usually, and when, as is most common, the distension of the abdomen arises from intestinal flatus and a persistent tonic contraction of the muscles about the waist, simple percussion of the abdomen by producing a resonant sound shows that the enlargement cannot be due to the distended uterus; but sometimes a large amount of fat under the integuments may deaden the percussion sound, or an exaggerated sensibility of the skin may forbid this method of examination. In all such cases a solution of the problem is readily obtained by means of the anæsthetic agents. As soon as complete insensibility is induced by ether or chloroform, the protuberant abdomen subsides, and the delusion is exposed. With returning consciousness, however, the swelling reappears.(*h*)

§ 280*a*. According to the observations of Elsässer,(*i*) the *brown discoloration of the linea alba* was found in 377 out of 400 pregnant women, extending from the sternum to the mons veneris, in 22 only in the lower half of the abdomen, and in 1 only in the upper. At the same time, however, this author observed other women in a pregnant condition in whom no trace of this discoloration could be perceived, and still others, not pregnant, in whom it was found; so that, although it is no doubt present in the majority of instances, there can be no safety in relying upon it as a sign of pregnancy. These conclusions agree with those which were earlier reached by Mr. Furner and Dr. Cormack, the latter of whom also found the dark abdominal line occasionally in males affected with disorders of the intestines or of the urinary organs.(*j*) *Prominence of the umbilicus* is sometimes spoken of as a sign of pregnancy, but it does not occur until the abdomen is considerably distended by the uterus, at which time certain evidence of the presence of a fœtus is ascertainable by other means.

(*f*) Signs and Symptoms of Pregnancy, 2d. ed. p. 405.
(*g*) Times and Gaz., Sept. 1859, p. 225.
(*h*) For several cases of Spurious Pregnancy, see Times and Gaz., Oct. 1855, p. 342.
(*i*) Henke's Zeitschrift, 1852, 4 H.
(*j*) Month. Journ. of Med. Sci., Feb. 1844.

§ 281. 3d. *Changes in the mouth and neck of the womb.*—These changes vary, according as they are observed in those who have had children and in those who have never before been pregnant. We do not propose to describe them at length.(*a*) It is here sufficient to remark, in general, that the uterus sinks somewhat lower in the pelvis in the early months, and thus the *os tincæ* is brought nearer to the entrance of the vagina, and is at the same time tilted somewhat backward. This gives rise to the idea that the *cervix* is lengthened, which is not the case. It does not undergo any change in length until after the fifth month, when it becomes gradually shorter and broader (being merged into the body of the womb), until the close of gestation, at which time it is found to be entirely obliterated. The signs from the neck and mouth of the womb previous to the sixth month, are not to be greatly depended upon.

§ 282. 4th. *Quickening* is defined by Dr. Evory Kennedy to be "a sense by the mother of the first perceptible motion in the uterine region, about the sixteenth week after impregnation, having for its cause either change of position of the uterus, or the motions of the fœtus," or what is more probable, its first coming in contact with the walls of the uterus. It is frequently attended by fainting and weakness, and sometimes by a discharge of blood. Quickening occurs at no fixed period in the course of gestation. It usually is perceived at the time stated above, but occasionally earlier, and sometimes not until later. Occasionally, also, the sensation is not experienced. On the other hand, nothing is more common than for women to suppose that they quickened, when they are not even pregnant. Dr Kennedy says: "I have known women to insist upon their having felt the child moving or kicking within them, not only in cases where there was indubitable proof of the child's death at the time, but also, as mentioned in the case of quickening, where no child was in the uterus."(*b*) Queen Mary, of England, distinctly felt the "babe leap in her womb" when the Pope's legate was introduced to her, although dropsy was the sole result. Klein(*c*) reports the case of a lady who *supposed* herself pregnant, and that she felt the motions of the child, and who at the proper period was seized with the pains of labor. A case is reported by Dr. Heming, in the *Lancet*, in which physician and patient were both deceived. He was called to see the wife of a respectable tradesman; she was in labor, it was said, and the physician in attendance had been with her two days and nights. This gentleman told Dr. H. that he had felt the head of the child at first, but could not then say what part was presenting. An examination was made, and the woman found to be not even pregnant. She said that she had thought herself pregnant, because her stomach and bosom had lately become greatly enlarged, and because she had frequently felt the movements of the child, and had been irregular in her monthly periods.

Some of the most experienced and competent judges have fallen into the error of supposing that they felt these movements in women who were not pregnant at all.(*d*) In these cases the error has probably arisen from mistaking for uterine contractions, those of the abdominal muscles. Dubois mentions

(*a*) For a good description, see Montgomery on the Signs of Pregnancy, 2d ed. p. 183.
(*b*) Obstet. Auscult. p. 26. (*c*) Hufeland's Journal, 1815, p. 65.
(*d*) Dewees' Essays, p. 337; Dub. Med. Journ. vol. vi. p. 356.

a woman on whom the *toucher* was practised, and who possessed the power of imitating these movements at will. In other cases the contractile movements of the uterus distended by a dead fœtus, or by any other body, have led to the same erroneous conclusion; and in others, again, intestinal movements excited by flatus have deceived both patient and physician.

The sensation which has received the name of quickening, is not always equally well marked in its character; sometimes it is attended with fainting, weakness, and a general commotion of the system, while at others it resolves itself into an indistinct perception of the first feeble movements of the child. These have received from the French the name of *pattes d'araignées.* By some, the sensation is supposed to be due to these movements; by others, it is attributed to the sudden rising of the womb from the pelvis. To which of these causes it is really due, we shall not venture to decide, considering the reasons for either inconclusive. The fact which, above all others, is of importance, is, that the sign is strictly a *subjective* one. It is perceptible by the woman alone, and her veracity must therefore determine our acceptance of it. In midwifery practice, the statement of the female is not called in question, unless her physician have suspicion that she may have been mistaken in her sensations; in legal medicine, however, the medical examiner should first convince himself by a direct examination of the probable existence of pregnancy, before questioning the woman, since it is evident that her assertions may be influenced by various considerations of interest and advantage. The examination will enable him to determine whether there is a fœtus in the womb, and whether it be living or dead, as well as to fix the probable period of pregnancy. Unless her statements corroborate the results of this physical examination, they may, if these results are positive, be entirely disregarded. Hence, the fact of quickening may be looked upon as a superfluous sign of pregnancy, having no value, except when sustained by other clear evidence of the existence of this condition.

§ 283. The undue importance attached to quickening, from the earliest times, arose from an error which modern science would long since have consigned to oblivion, had it not been fatally incorporated into the laws of various countries. It was supposed that the fœtus became endowed with vitality at a variable epoch after conception, and that quickening was an indication of the moment at which it became thus animated. Such an error, explicable in the infancy of physiological science, by an inadequate knowledge of the development of the embryo, confirmed by absurd ecclesiastical canons, and handed down from one criminal code to another, should now, when ignorance is no longer excusable, disappear from our penal system. To whatever cause the act of quickening may be attributed, its explanation is not dependent upon a solution of the question relative to the precise moment at which the child becomes endowed with life. If it be due to the first motions of the child, perceptible to the mother, it is merely an indication of the strength of its *muscular movements;* and if it is caused by the sudden rising of the uterus from the pelvis, it evidently has a still more distant connection with the phenomena of life. No serious argument is required to prove that the fœtus, in its embryonic condition, is a new being, living by its connection with its mother, and dying

when this is destroyed. However rudimentary its form, it is not an inorganic body, constituted by the casual aggregation of atoms, but a living creature, from whose undeveloped lineaments a perfect human shape is to be evolved. A pulsating heart, and a nervous tract, are among its earliest recognizable elements. Reason and observation equally declare its essential original vitality.

The following remarks by Prof. Hodge, forcibly illustrate these truths :—

"In a most mysterious manner brought into existence, how wonderful its formation! Imperfect in the first instance, yea, even invisible to the naked eye, the embryo is nevertheless endowed, at once, with the principles of vitality; and, although retained in the system of its mother, it has, in a strict sense, an independent existence. It immediately manifests all the phenomena of *organic* life; it forms its own fluids and circulates them; it is nourished and developed; and, very rapidly, from being a *rudis indigestaque moles*, apparently, an inorganic drop of fluid, its organs are generated and its form perfected. It daily gains strength and grows; and, while still within the organ of its mother, manifests some of the phenomena of animal life, especially as regards mobility. After the fourth month its motions are perceptible to the mother, and in a short period can be perceived by other individuals on due investigation.

"The usual impression, and one which is probably still maintained by the mass of the community, is that the embryo is perfected at the period of quickening; say the one hundred and twelfth, or one hundred and twentieth day. When the mother first perceives motion, is considered the period when the fœtus becomes animated—when it receives its spiritual nature into union with its corporeal.

"These and similar suppositions are, as has been already shown, contrary to all fact, to analogy, to reason; and if it were not for the high authorities —medical, legal, and theological—in opposition, we might add, to common sense.

"What, it may be asked, have the sensations of the mother to do with the vitality of the child? Is it not alive because the mother does not feel it? Every practitioner of obstetrics can bear witness that children live and move and thrive long before the mother is conscious of their existence; and that women have carried healthy living children to the seventh, and even to the ninth month, without being conscious of their motions. Moreover, how can a fœtus be termed *inanimate* when it grows, of course is nourished, and manifests all the phenomena of life? The supposition of inanimate embryos capable of being developed, is, at the present day, an absurdity. From the moment of conception it must be alive, for immediately it begins to be developed; it is separated from the ovary, where it was generated, and travels some three or four inches through a narrow tube or canal, to the uterus, as much disconnected from the mother as the chick in ovo is separated from the parent hen. Its subsequent attachments to the mother, by means of the placenta and uterus, are so indirect (as will be hereafter demonstrated) that we will be justified in asserting that the mother has little more influence upon the child in utero than the parent bird has upon its offspring in the egg.

"If the question, therefore, be returned upon us, When does that mystical union between our corporeal and spiritual nature, between matter and spirit,

body and soul, occur? We answer at the time of *conception*. It is then, only, the father can, in any way, exert an influence over his offspring; it is then, only, the female germ is in direct union with the mother—the connection afterwards is indirect and imperfect. To suppose that the body only is generated at conception, and that the spirit is subsequently added, is, in the absence of all direct revelation on the subject, philosophically untrue—being at variance with the facts and with reason, as has already been illustrated and enforced."

§ 284. 5th. *Sympathetic phenomena.*—Pregnant women display various consensual symptoms, which, when confirmed by other signs, compared with their sensations in previous pregnancies, or with their usual health in the unimpregnated condition, are not without considerable weight in determining the existence of pregnancy. But there is nothing more variable than these symptoms. Some women go through the whole of their pregnancy without being affected with morning sickness, salivation, dyspepsia, longings, disgusts, &c.; while others are hardly ever free from some of these annoyances. Further, they may be easily feigned, where the female is desirous to persuade herself or to deceive others.

§ 285. A change in the *condition of the breasts* is of more importance. They become larger and firmer, knotty, and somewhat tender to the touch, and large blue veins may be seen meandering over the surface; the nipple and the follicles around it become more prominent, and the areola wider and of a dark brown color. In some females the projection of the nipples and the enlargement of the breasts may be more or less hindered by corsets. The increase in the size of the breasts being due mainly to the *secretion of milk*, does not, as a general rule, occur until the later periods of pregnancy, and sometimes not until delivery takes place. Occasionally, also, certain diseases of the uterus and ovaries will cause a tumefaction of the breasts. Retention of the menses from an imperforate hymen, fibrous tumors of the uterus, and ulceration of the mouth and neck of the uterus, are frequently, says Dr. T. Smith, concerned in these mammary changes; and habitual and excessive copulation sometimes has the same effect. The presence of milk in the breasts is of value, as a sign, only in cases where a woman never before pregnant, and menstruating regularly, has the catamenia suppressed.(*e*)

The changes taking place in the *areola* are considered, by Dr. Montgomery

(*e*) For a large number of curious instances of the secretion of milk in women beyond the age of child-bearing, and in others where it was developed under extraordinary circumstances, *vide* Beck's Med. Journ. vol. i. p. 220. Also, Dr. Dunglison's case of a man fifty-five years of age, who performed the office of wet nurse for several years (Physiol. p. 833). Dr. Battersby gives an instance of a male child, three weeks old, from whom a drachm of milk could be drawn by pressure from the breasts. Analyzed by Mr. Moore, under the microscope, it was found to be a genuine lacteal secretion (Dublin Med. Press, April, 1850). See also Guillot's observations, Ed. Month. Journ., Feb. 1854, p 165. A most interesting case is of recent occurrence. A woman fifty-five years of age, whose catamenia had ceased for many years, and who was also in bad health, undertook to bring up an infant whose mother had died in childbed. To keep it quiet, she was in the habit of putting it to her breast. At the end of six months she was surprised to find that the child was really drawing milk from her breasts. All other nourishment was suspended, and the child, which before had been weakly, soon became hearty and vigorous entirely upon the milk which he drew from her. She continued to nurse him for twelve months, at which time she weaned him. (E. Warren, M. D., Edenton, N. Car., in Va. Med. and S. Journ. 1854.)

and some other eminent authorities, to afford very valuable evidence of pregnancy. The essential characters of the true areola resulting from pregnancy, are described to be a circle around the nipple, whose color varies in intensity according to the complexion, being generally much darker in persons with black hair, dark eyes, and sallow skin, than in those of fair hair, light-colored eyes, and delicate complexion. It becomes darker in color, but mottled, and wider as pregnancy advances. The skin over it is moist, and the follicles become prominent. These phenomena, in a woman not previously pregnant, when found in connection with other reliable signs of pregnancy, may confirm the inference made from them. Viewed singly, the changes in the areola will be found to be far from constant in their appearance. The complexion of the female has a good deal to do with their production; and, as Dr. Kennedy remarks, "we will often observe them very distinctly marked in virgins of a dark appearance, whilst in pregnant women of fair complexion no trace of them will be visible, even when they are advanced in this state. Again, where they have once been well marked, in consequence of one or more pregnancies, they seldom or never disappear entirely; and on this account, in cases of married women, they must be acknowledged as a test far from positive in its nature." Dr. Reid(*f*) observed them in a woman not pregnant but suffering from a chronic tumor of the left breast, and found that none of them were present in a woman who was soon after delivered of a living child. They are also known to occur in a variety of uterine affections. Siebold says that they may occur independently of pregnancy, and in cases of disease of the womb; and Dubois, that they may follow a suppression of menses, whatever its cause. Dr. Simpson, of Edinburgh, in a case of spurious pregnancy under his own care, observed that the areolæ became dark and their glandulæ enlarged. This was so marked, that a drawing of them was made about the third month. These sketches presented all the usual changes as distinctly as those figured by Dr. Montgomery in his plate of the true areola at that period; and being preserved, they were found, on comparison, as marked as those of the patient's own breasts were at the same date, a short time after, when actual pregnancy supervened.(*g*) A bluish or dusky color of the vagina, produced by venous congestion, was originally declared by Jacquemin to be an almost certain sign of pregnancy in females who are not subject to hæmorrhoids. This statement has been confirmed by Kluge, Parent-Duchâtelet, Kilian, Wistrand, and Montgomery, the last of whom says, "in every instance, without a single exception, in which I have found this appearance distinctly marked, pregnancy coexisted."(*h*) It should, however, be remembered that pregnancy may exist, although this sign may not be visible.

The more or less distinct presence of several phenomena, which have been now considered, independently of the existence of any product of conception, characterizes the cases known as those of *spurious pregnancy*. They might be expected to be met with most frequently in women who have never borne children, and are, therefore, unacquainted with the sensations and conditions

(*f*) Lancet, Dec. 1838.
(*g*) Edinb. Monthly Journ., July, 1853.
(*h*) Signs and Symptoms of Pregnancy, 2d ed. p. 245.

peculiar to pregnancy. But such is not the case. The most numerous examples of this delusion are presented by mothers approaching the period when the menses cease, and which is usually marked by uterine disorders of various kinds. Yet many are met with in the first year after marriage; and in such the source of the delusion is an instinctive longing for becoming a mother. To this powerful instinct must be attributed the occurrence of many phenomena of pregnancy in unmarried and pure women, associated with evidences of a hysterical or a highly nervous temperament, and the periodical *æstus* which often precedes and accompanies the catamenia. It is impossible to determine accurately whether the delusion has a mental or a physical origin, or in what degree either cause predominates; but it is probable that a state of excitement of the reproductive organs occasions impressions, if not sensations, which awaken corresponding ideas in the mind, and that these in their turn render the various physical phenomena more intense. The vivid descriptions of their sensations, therefore, given by the subjects of these various cases, are not necessarily to be taxed as inventions, nor are the physical phenomena which they display to be regarded always as cunning tricks intended to deceive. They represent convictions as profound and distinct as those of the monomaniac, and are often as difficult to eradicate.

§ 286. All of the signs which have now been referred to are uncertain in their nature, and various objections may be urged against each of them, but if a majority of the more important exist, the presumption of pregnancy is necessarily very strong, although *certainty* cannot be obtainable from them. The same objection cannot be made against the signs which we have designated as *certain*, from the fact that when found they indicate the presence of a fœtus infallibly; although it cannot, indeed, always be inferred from their *absence* that pregnancy does not exist. This class of signs demonstrates, therefore, the presence of a fœtus in the womb, and are obtained by physical methods of exploration, inspection, touch, auscultation, &c.

§ 287. The *passive movements* of the child are obtained by the manœuvre termed *ballottement* by the French. The female being in a standing posture, the finger is introduced into the vagina, up to the mouth of the uterus, while the other hand is placed upon the abdomen. The womb is suddenly raised up by an abrupt movement of the finger, and falling again upon it with a slight shock, communicates the sensation of sudden displacement of a body contained in a liquid. This test is seldom applicable before the fifth month, and sometimes not after the eighth, owing either to the position of the child or the small amount of amniotic fluid present. In competent hands the test is a safe one; but it can give evidence only of the presence of a fœtus—whether this be living or dead must be ascertained by other means. Another mode of performing ballottement, but which is inferior to that just described, consists in giving sudden movements to the uterus by the hand, placed upon opposite sides of the abdomen while the woman is in an erect posture or lying upon her side.

§ 288. *The active movements of the child* become perceptible, for the first time, usually in the fourth month. They are at first extremely feeble, and in some cases remain so during the whole period of gestation. There are some rare cases in which no movement whatever has been felt by the mother through-

out pregnancy; and, on the other hand, in some instances of spurious pregnancy the movements attributed to the child are described as violent. In the majority of cases, however, they are very distinct in the latter half of pregnancy. They are perceived by laying the hand upon the abdomen, and making gentle pressure upon it, or after dipping the hand in cold water before touching the skin. Sometimes an escape of gas from one portion of the intestine to another, or even the involuntary contraction of the abdominal muscles, or of the uterus itself, may momentarily deceive the examiner, but a little attention will prevent all chance of mistake from these sources. The child may not always be made to execute movements; hence, both the woman may be pregnant and the child alive, without its being revealed at the time by this mode of physical examination of the abdomen.(*i*)

§ 289. 6th. *Pulsation of the fœtal heart.*—The pulsation of the fœtal heart resembles the ticking of a watch, and is discoverable at different portions of the uterus, according to the period of pregnancy at which the observation is made. These sounds cannot be mistaken for any other heard in the abdomen, since the pulsation is a double one, and not isochronous with the maternal pulse, being generally about 130 beats in the minute, varying, however, considerably in frequency, and becoming less frequent as pregnancy advances. These pulsations are first distinctly audible about the middle of the fifth month; but M. Dépaul says that it is possible to hear them one month earlier than this period, he having succeeded in perceiving them, with great distinctness, by depressing strongly the abdominal walls, and placing the stethoscope upon the fundus of the uterus. This manœuvre would evidently succeed only in very thin persons, and when employed by a practised auscultator. The sounds may be more audible at one examination than at another; indeed, to an inexperienced auscultator, they may frequently be inaudible. It is extremely rare, however, *not* to find them in the last three months of pregnancy, except when the fœtus is dead. Of 906 women examined at this period of pregnancy, says M. Dépaul, the sounds were absent in 8 only. Yet in some rare cases they have been inaudible throughout pregnancy. The auscultation of the fœtal heart is, therefore, a test of the existence of a fœtus far more reliable than any other sign or combination of signs. It is easy of application, can be employed at a comparatively early period, and can hardly ever fail of being discovered when pregnancy really exists.

§ 290. 7th. *Other sounds.*—There are two other sounds indicative of pregnancy, which are ascertained by auscultation, but neither of which can afford the same positive proof as the pulsation of the fœtal heart. These are the uterine and the umbilical *souffle.* The first is a peculiar blowing, cooing, or whistling sound, audible over a greater or less extent of the uterine tumor, sometimes confined to one spot, and generally most audible in the lower and lateral portions of the uterus. It is said to be caused by the passage of the blood through the uterine arteries. It is isochronous with the pulse of the mother. It has been perceived as early as the tenth week, but most generally cannot be discovered until a later period. Its intensity increases up to the

(*i*) Dépaul, Traité Théorique et Pratique d'Auscultation Obstetricale.

end of the seventh month. (Dépaul.) Of 307 women who had passed the fifth month, this author observed the uterine souffle in 295. M. H. F. Nägele(*k*) found it absent in only 20 cases out of 600. In affixing a value to this phenomenon, as a sign of pregnancy, the observations of M. Dépaul render it positive that a souffle perfectly similar to this is heard when the uterus is developed from any other cause than pregnancy. He relates a number of cases which show conclusively that such is the case; in some of them, post-mortem examination disclosed fibrous and carcinomatous tumors imbedded in the walls of the uterus.(*l*) If, however, a certainty can be obtained that the development of the uterus is not due to this cause, the sign is hardly less characteristic than the fœtal cardiac pulsation.

The sound discovered and described by Dr. Evory Kennedy, and called by him the umbilical sound (from the supposition that it proceeds from the umbilical vessels) is of trivial importance in the diagnosis of pregnancy. It is not audible in the majority of cases, requires an experienced ear, and when found, is a superfluous sign, because the pulsation of the fœtal heart and the uterine souffle will be also perceptible at the same time, and are not open to the same objections as is the one in question.

§ 291. 8th. *Kiestein in the urine.*—Very little need be said of this substance as a test or sign of pregnancy. The name of *kiestein* is applied to a substance which occurs at first as a fleecy cloud, and afterwards as a fatty pellicle or scum in the urine of pregnant women, after it has been allowed to stand for a few days. Its nature is not very well understood, but Dr. Golding Bird supposed it to contain the caseous elements of milk mixed with the earthy phosphates. There is, however, considerable discrepancy of opinion respecting its constitution, while at present few are disposed to look upon it as of any value as a sign of pregnancy. Among the later observations are those of Dr. Veit, who comes to the conclusion that the so called pellicle of kiestein is no peculiar matter at all, and is not of the slightest value as a sign of pregnancy. In urine of both non-pregnant and pregnant women pellicles are formed, containing vibriones and frequently the triple phosphate; the chief difference between the respective urines being, that in that of pregnant women, alkaline, and in that of non-pregnant women, acid reaction more frequently manifests itself. This may depend, perhaps, upon the greater concentration of the urine in pregnancy, and the larger proportion of mucus mixed with it.(*m*)

Montgomery, after reviewing all the evidence which has been published upon this subject, and comparing with it his own experience, concludes that we should be very slow to place any confidence in the sign in question, except as a "corroborative indication."(*a*) Dr. G. T. Elliot, who conducted his investigations at the Bellevue Hospital, New York, concludes that there is nothing positive to be learned from the urine in regard to the existence of pregnancy, and that its appearances can scarcely even be called corroborative.(*b*)

(*k*) Die geburtshülfliche Auscultation, Mainz. 1838.

(*l*) The same opinion is held by Kiwisch, whose opportunities for verifying the accuracy of his views are very extensive, and whose critical acumen and sound judgment have gained him a wide reputation.—Vid. *Klinische Vortraege.* Bd. 2, p. 561. Prag. 1849.

(*m*) Am. Journ. Med. Sci., Jan. 1852, p. 259.

(*a*) Op. cit. p. 307.

(*b*) New York Journ. of Med. Sept. 1856, p. 181.

CHAPTER II.

DELIVERY.

§ 292. 1st. *Signs of recent delivery.*—Within a week or ten days after delivery, at term, the following signs are more distinct and well marked the earlier the examination is made. The countenance of the female is pale, her skin warm and moist, the body languid, and the mind and feelings very impressionable. The breasts are more or less distended, and their veins very distinct upon the surface. They are increased in weight, and the knotty masses of lactiferous tubes and glands are very easily felt. The nipples are prominent, and watery milk spontaneously or by pressure exudes from them. The integuments of the abdomen are loose, lying in folds, marked with livid lines, which at a later period become whiter than the surrounding skin, and resemble scars; the uterus can be felt behind the pubis, like a large firm ball; the external organs of generation are moist, relaxed, and swollen, and the vagina, both at its entrance and throughout, is very capacious, and free from folds. The mouth of the womb is low, open about three-quarters of an inch, its margins very soft and relaxed, and sometimes slightly lacerated. A sanguinolent mucus exudes from the internal organs of generation. This discharge is known under the name of the lochia; its odor is peculiar, and easily recognized by those who have once perceived it. Such are the principal signs of delivery, and in their combination, they present a characteristic picture which can leave no room for doubt of a recent confinement. Taken separately, however, there is hardly any one which is not liable to exceptions. Thus milk may be secreted independently either of pregnancy or delivery, as has been shown in the chapter on the "Signs of Pregnancy." Yet the manner in which the secretion takes place after delivery, with the attendant warmth of the skin, the turgescence of the glandular structure of the breast, and a certain amount of constitutional sympathy, called "milk fever," can rarely, especially during the first few days, allow one to be in doubt of its cause. There are, indeed, numerous cases in which no milk is secreted, and although even in these a certain degree of turgor and warmth may generally be observed, yet an opinion must be based upon a further examination.

§ 293. A *microscopic examination* of the milk may sometimes contribute to prove the recent occurrence of parturition. This solved all doubt in a case reported by Mr. Mercer Adam. The body of a new-born child, much decomposed, was found in a moss in the South of Scotland; it appeared to have been dead four or five weeks. Suspicion having fallen upon a young woman who was supposed to have been delivered secretly about that time, she was arrested, and acknowledged that she had borne a child about a year and a half before, which she had nursed until within three months of her apprehension, but firmly denied having been recently delivered. No feasible plan of deciding the question appearing, some one suggested that her milk should be examined by the microscope. This was done, and it was found to abound in

colostric globules. "This showed parturition to have lately occurred." The girl finally confessed that she had recently given birth to a stillborn child.(*n*)

§ 294. The condition, as above described, in which the genital organs, after delivery, are found, is one which it is entirely impossible to mistake for the result of disease, accident, or intentional injury. The only difficulty in ascertaining the fact of delivery having taken place arises in those cases where an examination has not been made at a sufficiently early period. After the establishment of the flow of the milk, and the disappearance of the relaxed and tumid condition of the genital organs, there remain hardly any other signs than the whitish streaks before referred to, indicative of the previous distension of the abdomen, and, in addition, the state of the os uteri. If it can be shown that abdominal dropsy or tumors have not been present, then the white lines, being usually permanent, afford good evidence of the woman having borne one or more children, but allow no inference as to the date of delivery, except that it has not been recent. The *os uteri*, in a woman who has been delivered once or more than once, differs from its virgin state, in being more open, and having its margins irregularly notched, or even torn. Occasional exceptions to this statement are met with.

§ 295. In conclusion, it may be stated that the medical proof of recent delivery, from an examination of the living woman, cannot be established with perfect certainty after the lapse of a week or ten days, if the female have already borne children; if it, however, have been a first labor, the existence of the whitish streaks upon the abdomen, and the altered condition of the mouth of the womb, will afford strong suspicion of delivery having taken place at some former period, which cannot be more nearly determined.

§ 296. 2d. *Signs of delivery in the dead.*—These are extremely easy of recognition. It is evident that, in addition to the dilated and relaxed state of the vagina and vulva, the volume and capacity of the uterus, the thickness of its walls, the blood upon its inner surface, and the lacerated appearance of that portion of it to which the placenta was attached, are unmistakable signs of recent delivery. The uterus, after delivery, does not return to its former size until after the expiration of eight or twelve weeks, but will be found during this period still larger than before pregnancy, its walls thick and firm, but not vascular, although traversed by dilated veins, and the mucous membrane of the *os tincæ* softened, as if excoriated, vascular, and covered with mucus. The appendages of the uterus partake of the vascularity which characterizes it at the epoch of delivery, but they soon regain their ordinary aspect. The rate of return of the uterus to its normal size after parturition is irregular, depending upon its energy during labor, the period of pregnancy at which this process occurs, the occurrence of hemorrhage, &c., and consequently any attempt to infer from its condition the precise date of delivery must prove deceptive.

§ 297. 3d. *Corpus luteum.*—It has been supposed that the finding of a *corpus luteum*, or trace of a ruptured Graafian vesicle in the ovary, was incontrovertible proof of the previous existence of pregnancy. This opinion can

(*n*) Edinburgh Monthly Journal of Medical Science, May, 1853.

no longer be maintained. The body which is found in the ovary, as the result of the rupture of a Graafian vesicle, indicates the escape of an ovum, but not necessarily the occurrence of impregnation. It has, indeed, been supposed that if a *corpus luteum* were formed in the ovary, this would be a reliable proof that fecundation must have occurred. This view is, however, not supported by the later investigations into the physiology of menstruation and reproduction.

The fact is now, perhaps, universally admitted, that the maturation and expulsion of ova, probably at the menstrual period, or immediately after it, take place independently of all sexual intercourse. The act of expulsion or discharge necessarily involves a rupture of one of the Graafian follicles, and the locality is indicated by a *corpus luteum* and a cicatrix.

The following is a description, by Dr. Dalton, of the *corpus luteum* found in the ovary of a girl who destroyed herself with oil of tansy, in the fourth month of pregnancy. The fœtus was found in the womb. "The left ovary, which hung down a little lower than the right, had near its external extremity a small conical prominence, where the fibrous coat was wanting, and its place occupied by peritoneum alone. There was a very slight appearance here of a cicatrix, visible only on close inspection. There was no unusual vascularity here or at any other part of the ovary. Beneath this prominence the corpus luteum could be felt through the ovarian tissue, tolerably firm and well defined, showing the form of a sphere compressed laterally, much like that of the crystalline lens. On dividing the ovary longitudinally through the prominence, the corpus luteum was exposed. It presented nearly a circular section, measuring seven-eighths of an inch in its long diameter, and three-fourths of an inch in its short. It consisted externally of a convoluted wall of a dull yellow color, measuring at its deepest part a little over three-sixteenths of an inch in thickness. The space inclosed by the yellow wall was occupied by a colorless, reticulated, fibrous coagulum, which possessed a few minute vessels. This central coagulum was much compressed laterally, so that, although it presented a cut surface of about half an inch in diameter, it had hardly more than one line in thickness. There was no cavity or fluid anywhere. Both ovaries were carefully divided in every direction, but only one other body was found having any resemblance to a corpus luteum, and that was so small and imperfect as to be hardly recognizable. There were many Graafian vesicles in the interior of each ovary, varying in diameter from three-sixteenths of an inch downward, but none at all prominent on the surface. Both ovaries were quite healthy."(*o*)

§ 298. The question of practical interest in inquiries relative to the fact of impregnation or delivery having occurred, is, whether there is a sufficient distinction possible between the corpora lutea of simple menstruation and those of pregnancy to enable us to declare with *positiveness* to which cause it may be properly ascribed. It would certainly be a gratifying result of scientific observation, if this question could be answered in the affirmative.(*p*)

(*o*) American Journal of the Medical Sciences, January, 1852.

(*p*) M. Coste, in his splended work upon Embryology, says, that during the first eight or ten days after the escape of the ovum, it is impossible to find any difference

M. Longet(*q*) gives a concise and satisfactory description. He says: "We must distinguish *two kinds of corpora lutea;* those which result from the cicatrization of a follicle, after the spontaneous expulsion of an ovum, without any subsequent conception; and those which are produced by the same process, after the expulsion of an ovum followed by conception, and especially by gestation. Those belonging to the first class, rapidly pass through their different stages, never attain a high degree of development, are much inferior to the others in size, rapidly assume a yellow coloration, fade again in a few days, and in the course of one or two months become retracted and completely concealed in the ovarian tissue. The second species of corpora lutea, participating in the congestion and functional activity, which are established in all the sexual organs during gestation, attain a size sometimes greater than that of the ovary itself, and pass so slowly through the different stages of their development and atrophy, that they are still perceptible at the termination of pregnancy; they gradually diminish in size, in proportion to the growth of the fœtus, and the approach of the end of gestation."

§ 299. Dr. Dalton,(*r*) in his valuable monograph on this subject, says: "There can be no doubt that *in the first periods*, the corpus luteum follows the same course of development, whether the discharged ovum becomes impregnated or not. Together with the rupture of the vesicle the same effusion of blood takes place in either case, followed by a gradual absorption of the coloring matter of the clot, with hypertrophy and folding up of the membrane of the vesicle. When, however, the ovum becomes impregnated, and continues its growth in the uterus, the corpus luteum, instead of reaching its maximum of development at the end of three weeks, and afterwards undergoing a rapid process of atrophy, *continues to develop itself*, for a considerable period, and does not, in fact, become very decidedly retrograde until after the termination of pregnancy." He states, moreover, that the yellow color of the *corpus luteum* of pregnancy fades more rapidly than that of menstruation in proportion to its size and the activity of the changes it undergoes.

Bischoff,(*s*) in a paper upon this subject, which with him was one of close investigation for many years, states that he had the opportunity of examining the ovaries in thirteen women who died while menstruating or in the pregnant condition. The results he obtained confirm the truth of the theory, that at

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between the corpus luteum of menstruation and of pregnancy; after this period the first assumes a retrograde course, while the latter attaining a larger size than the other ever reaches, and becoming in every way more developed, remains stationary until about the end of the third month, at which time it begins to decline, and between the sixth and the ninth month has lost at least two-thirds of its volume; still occasionally it is completely absorbed before delivery. During the period of decadence, it is difficult to distinguish the corpus luteum of pregnancy from that of menstruation. M. Coste differs from Raciborski, Pouchet, and most other physiologists who have made researches upon this subject, in regard to the cause of the color of these bodies, believing it not to be due to an extravasation of the coloring matter of the blood, but to other causes which the reader will find fully explained in his work.—*Histoire générale et particulière du Developpement des Corps organisés.* Paris, 1847.

(*q*) Physiologie. Paris, 1850, vol. ii. p. 88.

(*r*) Prize Essay on the Corpus Luteum of Menstruation and Pregnancy, by Jno. C. Dalton, jr., M. D., published in the Trans. of the Am. Med. Assoc. vol. iv. 1851.

(*s*) Zeitschrift für rat. Med. Bd. iv. H. 1, abridged in Brit. and For. Med. Rev., April, 1854, p. 561.

every menstrual period, a Graafian follicle ripens, swells and bursts, and that the ovum escaping, a corpus luteum is formed. Still, in ordinary menstruation, it never attains the full development which characterizes it when pregnancy exists. It rapidly becomes contracted, and at the succeeding menstrual period is already indistinct, and becomes gradually more and more so, the color changing from yellow to brown and black, and a puckered cicatrix on the surface of the ovary is soon the only trace of its existence. The *corpus luteum* of pregnancy, on the other hand, progresses steadily in its development, and attains a size never reached by that of menstruation. It lasts through the whole period of pregnancy, although diminished in size after the sixth or seventh month, and disappears after delivery. In the early periods, therefore, the difference between the two bodies is too slight to be relied upon; after delivery it is still difficult to distinguish that of pregnancy from those of fourteen days' or three weeks' standing, resulting from menstruation.

§ 300. It is hence very plain, that in the many cases in which the fact of impregnation having taken place is important to be known, we cannot rely with confidence upon the evidence derivable from the corpus luteum. We doubt, moreover, whether, in view of the still very conflicting opinions among physiologists in regard to the nature, origin, and diagnostic value of corpora lutea, positive statements derived from this source would be well received. While we feel persuaded that there is, as has been so well described by M. Coste and Dr. Dalton, a striking difference between these bodies in mere menstruation and pregnancy, yet it should not be forgotten that many of the most experienced anatomists and physiologists of the day have failed to recognize it. We beg leave to refer those of our readers who desire to learn in detail the state of knowledge on this subject, to Dr. Dalton's paper above quoted. In conclusion it may be added, as that admirable observer and microscopist, Mr. Wharton Jones, remarks, that "though *physiologically* one may be permitted to speculate on the relation between the occurrence of corpora lutea in the ovaries and preceding coitus, it would be rash and unwarrantable in any one to pronounce positively from the occurrence of a corpus luteum in the ovaries that coitus had taken place. The discovery of an ovum in the uterus, in process of development, could alone, in the present state of knowledge, warrant such an affirmation in a court of law. But, on the other hand, the absence of a corpus luteum could not warrant the affirmation that coitus had not taken place.(*t*)

§ 301. 4th. *Feigned delivery.*—Delivery may be feigned from a variety of motives, into which it is not necessary for us to enter. A medical inspection can hardly fail to expose the deceit, and usually the collateral proof is sufficient. We have abridged the following case of feigned delivery, on account of the wonderful ingenuity with which the imposture was conducted. Dr. Albert relates that he was called upon to see a poor girl of twenty-one years of age in her last illness. In the presence of the physician and clergyman of the district, she gave the following narrative and confession. Some eighteen months

(*t*) Microscopical examination of an early *corpus luteum*. Lond. Med. Gaz, 1844.

previously she had entered the service of a married couple as housemaid. Her master, who was young and handsome, and assumed the title of Baron, had no children. He succeeded, by tempting presents, in overcoming her virtue. He then represented to her that an important inheritance depended upon his having an heir; but having been married five years, and his wife still proving unfruitful, he had no longer any hope of having children by her. He then proposed to the girl that in case she should prove with child, and would allow him to cause it to appear as his own legitimate offspring, he would not only give her a considerable sum of money, but would also let her remain in the house of her mistress, in order that she might be always near her child. She accepted the proposal, and as soon as she found herself to be pregnant the preparations were made to carry out the projected imposture. The girl remained in the house, living in the most retired manner, while her mistress played the part of a lady in an interesting condition. She introduced wool and folded napkins under her dress, and thus gradually let her rotundity become apparent, rubbed her breasts frequently, in order to develop them, fainted in church, was often ailing, and sent for midwives and consulted them concerning her symptoms; physicians were also called upon, and every means taken to make public her happy expectations, so that no one had any suspicion that she was not pregnant. The traces of her monthly sickness were carefully concealed.

At last, in due time, the young girl fell in labor, which was allowed to advance considerably before the midwife was sent for. In the mean time the bed was arranged in the following manner. A board was taken out of the bottom of the bedstead, and immediately above this opening a hole was made through the mattress and paillasse, large enough to allow the legs of a person to pass through and rest upon the floor. The bed was made in such a manner as to sink down towards the headboard, while it was elevated below the opening in the mattress. The mistress now leaned in a sitting position, with her legs through the opening in the bed, and supported against the headboard, while the servant lay across her lap on a feather-bed, in the attitude of labor. Her body was entirely concealed by the bed-coverings, which also concealed her mistress up to the neck. The midwife, upon her arrival, found the baroness, as she supposed, in the throes of labor; she made the necessary examination, promised a speedy deliverance, and gave the usual words of comfort. The lady, however, screamed lustily at every pain, the approach of which she became conscious of by the involuntary contractions of the poor girl's body; while the latter suppressed her cries as much as possible, except when she could mingle them unperceived with those of her mistress. A living male child was soon born, and the after-birth followed it immediately. While the nurse was busy in washing and dressing the child in another room, the girl escaped from the bed into an adjoining chamber. The baroness, before the return of the midwife, drew her feet up from the opening, covered it over with the bed, and, stretching herself out upon it, forbade the midwife (who was desirous of ascertaining her condition) to touch her, except to wash off the blood with which she had previously soiled her thighs, declaring that she was in so much pain that she could not endure the slightest touch. The child was

baptized, and on the second day put to the breast of the lady. As, however, very naturally, it found nothing there, the midwife was discharged, on the pretext that the baroness's own attendant could now take care of the child, which, immediately upon her departure, was confided to its own mother. The remainder of the girl's history not being essential here, is omitted. Unexplained circumstances prevented the fraud from succeeding. The authors of the conspiracy fled, leaving the servant-girl sick and in a state of destitution. She died, from the effects of privation and exposure, shortly after having made this confession.(*u*)

Dr. Rüttel relates a case of pretended pregnancy and delivery, in which a girl, with the hope of persuading her lover to marry her, had stolen a child from eight to ten weeks old, and endeavored to pass it for her own. The fraud was easily detected from the entire absence of any signs of recent delivery, and from the child being evidently older than was consonant with her statement.(*v*) Where, as has in some cases happened, a child of the proper age has been substituted, the truth will be elicited by medical examination, or where this cannot be obtained, the imposture is apt to be disclosed by some accidental or unforeseen circumstance.

CHAPTER III.

DURATION OF PREGNANCY.

§ 302. 1st. *Presumption that the child born in wedlock is legitimate.*—The rule in this country, as in England, is, that when the husband has access to the wife, and the child is born within due time subsequent, no evidence, short of absolute impotence on the husband's part, will justify a judgment of illegitimacy. The question of access, however, may be made to rest upon circumstances.(*w*) And among these circumstances may be taken proof of open cohabitation with another man, and repudiation by the husband's family of the alleged child.(*x*) When the marriage takes place when the mother is so far advanced in pregnancy, that her situation must have been known by the husband, this will be considered a recognition of legitimacy.(*y*)

§ 303. 2d. *Protracted Gestation.*—(1.) *Usual duration.* The duration of pregnancy in woman, is, according to general medical and popular observation, about nine calendar months. Nine calendar months give a variable length of time, since they may contain either 273, 274, 275 or 276 days. Hence those who have thought precision was desirable, have described the term of pregnancy as comprising ten lunar months, forty weeks, or 280 days. This, indeed, was the most ancient mode of reckoning. It is given by Hippocrates,

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(*u*) Henke's Zeitschrift, vol. xliv. p. 172.
(*v*) Ibid. Erg. H. 31, p. 312.
(*w*) Com. *v.* Shephard, 6 Binn. 283. See 3 Hawks, 623.
(*x*) Com. *v.* Stricker, 1 Br. App. xlvii.; see Com. *v.* Wentz, 1 Art. 269; Stegall *v.* Stegall, 2 Brock. 256; Bowler *v.* Bingham, 2 Munf. 442, 3 Munf. 599.
(*y*) Stegall *v.* Stegall, 2 Brock. 256.

was incorporated into the Roman laws, and is frequently alluded to by the Latin poets. The celebrated Harvey says: "Unquestionably the ordinary term of utero-gestation is, that which we believe was kept in the womb of his mother by our Saviour Christ, of men the most perfect; counting, viz., from the festival of the Annunciation in the month of March, to the day of the Blessed Nativity, which we celebrate in December. Prudent matrons calculating after this rule, as long as they note the day of the month in which the catamenia usually appear, are rarely out of their reckoning; but after ten lunar months have elapsed, fall in labor, and reap the fruit of their womb the very day on which the catamenia would have appeared had impregnation not taken place."(*z*)

There is a remarkable correspondence between these views of the illustrious demonstrator of the circulation and those which are at present attracting attention. The idea has of late years been put forward and sustained by direct observation, that in women whose menstrual function is regular, gestation will terminate at the tenth menstrual period after that upon which conception has ensued. Thus, as the ordinary menstrual interval is about twenty-eight days, the ordinary duration of pregnancy would be a few days less than 280 days, varying according to the time occupied by the monthly flow.(*zz*) On this principle, the apparent difference among women in the length of their pregnancies might be explained by reference to the well-known variations in the length of the inter-menstrual periods; protracted gestation occurring in those having a menstrual interval naturally of more than twenty-eight days, and apparently premature confinements in those who menstruate at shorter intervals. The successful establishment of such a law, would afford striking confirmation of the general truth of a popular belief reposing upon ages of experience. The greater tendency to abortion or premature delivery at the recurrence of the menstrual epochs, and the usual re-establishment of the menstrual function, within one month after parturition, in case the woman does not suckle her child, afford a presumption in favor of its correctness. Nevertheless, much additional and careful observation is required before we can be permitted to base a positive opinion in legal cases on such a mode of calculation.(*a*)

§ 304. (2.) *Mode of reckoning.*—The discordance in medical testimony upon the subject of the natural duration of pregnancy and the possible deviations from it, is accounted for by the want of a *fixed period* from which to date *its commencement.*

The *mode of reckoning* is various. Much reliance is placed by some women upon *peculiar sensations* experienced at the moment of conception. In some instances, they are no doubt thus enabled to calculate the probable duration of

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(*z*) Harvey's Works, Willis' Translation, p. 529.

(*zz*) In a practical point of view, says Dr. Tyler Smith, we may consider that the average duration of pregnancy is about 280 days from the date of the last catamenia, or about 274 or 275 days from the time of coitus, when this can be ascertained. (Lancet, Mar. 1856, p. 333.)

(*a*) Vid. Cederschjöld. Schmidt's Jahrbücher, 1849. Suppl. Bd. pp. 323 and 394, also Schuster, Henke's Zeitsth. 1 H. pp. 1–97.

pregnancy with considerable certainty. Dr. Reid(*b*) says, that he has occasionally met with cases in which this mode of fixing the exact time of conception, proved, by the result, to have been correct; but that, in a much larger number of instances, the females were very considerably out in reckoning, by trusting to this evidence. As a general rule, he says, "it will prove most fallacious, and in disputed cases of legitimacy, it is of far too uncertain a character to rely on." We may add, that these sensations are undefined in their nature, are unperceived by a great many women, have no necessary connection with conception, and if referred to at a late period in the pregnancy or after delivery, the evidence must be utterly unworthy of consideration. Hence in questions of *paternity*, the sensations alleged to have been perceived at the time by the women cannot be regarded.

§ 305. (*a.*) *Cause of conception.*—In an indictment for bastardy the mother will not be permitted to decide which of the connections about the same time was the operative cause of conception.(*c*) "The organs of conception, like those of digestion," said Chief Justice Lewis, "perform their appropriate offices, without the volition of the female. She is not conscious, at the moment of the occurrence of what has taken place. It is only by *inference* that she can fix the paternity of her offspring. If her intercourse has been confined to one individual, there is no difficulty in drawing a correct conclusion from the premises. But if she has exposed herself to the embraces of several, at, or about the time she became pregnant, she has placed it out of her power to draw any safe conclusions on the subject. Where causes are shown to exist, each of which is adequate to produce the effect, and there are no circumstances to determine the mind in favor of either, the true cause must necessarily remain uncertain.(*d*)

§ 306. Another mode of calculation is from the *period of quickening.* In treating of the "signs of pregnancy," we have already shown the fallacy, to which any calculation founded upon this date is liable, since it may occur as early as the tenth week, as late as the twenty-sixth, or may never be perceived at all.

§ 307. (*b.*) *Cessation of the catamenia.*—The mode of reckoning adopted by women themselves, as well as by their medical attendants, is usually from the *cessation of the catamenia*, or from a period midway between the last monthly discharge and its next expected recurrence. It is at once obvious that such a computation must yield merely an approximate result. If calculated beforehand, it may happen to prove correct, or it may either fall short of, or exceed the actual duration. Conception may take place at any time in the interval between one menstrual period and another. Hence by reckoning from the last occurrence of the catamenia, we may be in error by the whole length of the menstrual interval—viz., 23 to 25 days—since impregnation may have been effected immediately before the anticipated return; or, on the other hand, the real duration of the pregnancy may be apparently shortened,

(*b*) On the Duration of Pregnancy in the Human Female, by James Reid, M. D. Lancet, 1850.
(*c*) Com. *v.* Fritz, 8 P. L. J. 43. Com. *v.* M'Carty, 4 P. L. J. 140.
(*d*) Com. *v.* M'Carty, 4 P. L. J. 130.

by referring the impregnation to the end instead of the beginning of the menstrual interval. By adopting the common way of dating from midway between the two periods, the evil of falling into an extreme error is indeed avoided, but certainty is no better attained.

§ 308. (*c.*) *Arrest of menstrual discharge.*—Another source of error lies in the *irregularity* of the menstrual function. If this continue to be performed during pregnancy, the female may become very much perplexed in her calculation. By dating from the complete cessation of the monthly discharge, she may make her pregnancy appear much shorter than it is in reality, or, on the other hand, add to its real duration by ascribing its commencement to some antecedent period at which she may suppose that she experienced the "peculiar sensations" above spoken of. In general, however, the mistake by which protracted cases may be accounted for, depends upon the fact of the catamenia having been arrested by some accidental cause before impregnation occurred. The female is often sustained in her error by the appearance of symptoms not unlike those of real pregnancy, which are apt to ensue upon the arrest of the catamenial discharge. Thus a lady, mentioned by Dr. Reid, who had borne five children, and had never before had any stoppage of the menses, except when pregnant, missed a period about ten months after the birth of her last child, which was at that time weaned, and naturally concluded that she was again *enceinte;* this opinion was confirmed by the second period also passing without any catamenial appearance. All the usual general symptoms of pregnancy occurred in succession, but, to her great surprise, she did not quicken as usual at the fourth month, and this occurrence did not take place, until the supposed seventh month of her pregnancy. The infant was born exactly twelve calendar months after the last appearance of the menstrual functions. Dr. Reid remarks: "We may readily comprehend that, in this case, there was an accidental stoppage of the catamenia for three months, at which period conception took place. Fortunately, the apparently late period at which the movements of the fœtus were perceived, but which, in reality, was the usual one at four months, corroborates the above fact."(*dd*)

§ 309. Although, when the duration of pregnancy is reckoned in this manner—viz., from the arrest of the monthly discharge—the calculation is subject to the errors indicated, which are again further increased by the sympathetic phenomena often ensuing upon the stoppage of the catamenia from other causes; yet it cannot be denied that there are cases thus reckoned, which cannot be so explained. In two cases, for example, related by Prof. Simpson,(*e*) of Edinburgh, the actual enlargement of the uterus, corresponding to its usual size at the eighth or ninth week of pregnancy, was ascertained by manual examination at this period after the supposed commencement of pregnancy; and yet in one case the number of days which elapsed from the last menstruation to delivery was 336, and in the other, 332. Allowing an inter-menstrual period of twenty-three days (since the impregnation may have occurred only

(*dd*) For numerous illustrative cases, see Reid, Lancet, Sept. 1853, p. 236.

(*e*) Contributions to Obstetric Pathology and Practice, by J. Y. Simpson, M. D., Professor of Midwifery in the University of Edinburgh. Monthly Journal of Medical Science, July, 1853.

at its termination) the actual duration of pregnancy would have been, in each case, respectively 313 and 309 days, or at least 33 and 29 days in these two cases beyond the generally admitted limit. We might, indeed, to show that a manual examination is not always a reliable indication, adduce cases related by another distinguished author, in which it merely confirmed the female in her error. Thus Dr. Reid relates that, "A married women aged twenty-five, who had not seen her husband for eight months previously, having procured a letter for a lying-in hospital was admitted into it, as labor-pains had continued for several hours. She had experienced all the usual symptoms of pregnancy and the abdomen was much enlarged. She was examined by the midwife of the establishment and by the junior medical officer, and was informed that she was only eight months advanced in pregnancy, and not at her full term. After remaining three days in the hospital, as the pains had ceased, she left, but was recommended to come back immediately if the pain returned. As she continued perfectly free from them for the space of another month, she then applied to a physician for his advice, who referred her to me. On examining the patient, she did not present one single sign of pregnancy, except that the abdomen was somewhat enlarged, but the umbilicus was depressed, and it was quite evident that she had never been pregnant." Nevertheless, we would be slow to believe that an accoucheur of the eminence of Dr. Simpson could have been deceived in supposing, in the cases referred to, that the developed size of the uterus was owing to the existence of pregnancy at the time of the examination. Yet, we cannot fail to remind the reader that the recognition of pregnancy as early as eight or nine weeks after conception by the vaginal touch, and especially where, as in these cases of Dr. Simpson, "spurious pregnancy" had before existed, and there was, moreover, chronic inflammation and enlargement of the cervix uteri, is generally considered by authors to be, if not impossible, yet far from certain.

§ 310. The value to be attached to the opinions of accoucheurs upon the subject of protracted gestation, depends naturally upon a consideration of the fallacies now enumerated. In many cases their only guide is the assertion of the mother, relative to the time of the supposed impregnation, the interruption of the menstrual discharge, and the period of quickening. In others, reliance is placed upon the degree of the enlargement of the womb; and in others, again, they are obliged to found their opinion partly upon the testimony of the mother and partly upon their own observation. An error in any of these elements for the formation of an opinion, will necessarily invalidate its accuracy; and hence, the testimony of an accoucheur as to his own experience, or that of a large number as to theirs, does not offer any security against error. If, for example, a physician should conscientiously believe and testify that he had witnessed a case of gestation protracted to twelve months, the grounds for that opinion become a legitimate subject of examination. The sources of error have been shown, we think, to be such that it can hardly be in the power of any man to give an unqualified opinion of the duration of pregnancy in any given case, unless, perhaps, as we shall hereafter see, no more than a *single act* of intercourse has been possible. For this reason, testimony of the kind cannot

become authoritative, the fallacies inherent in every mode of reckoning not being in the least diminished by the *number* of cases brought in evidence.(*f*)

We will, therefore, not weary the attention of the reader by adducing the discordant opinions of accoucheurs upon this point, nor refer to isolated cases in which, upon insufficient evidence, the duration of pregnancy was considered to have been much protracted beyond the usual period.(*ff*) Our object is, to ascertain what degree of precision is attainable for an opinion relative to the true duration of pregnancy, and within what limits it may fluctuate; the general principles, thus obtained, may then properly be applied, to explain apparently exceptional cases.

§ 311. (*d.*) *Statistical results.*—If we now, with this view, inquire into the *statistical results* obtained by the examination of a large number of cases of pregnancy calculated from the interruption of the catamenia, we shall find that the errors to which this method is unavoidably exposed give a range to the possible duration of pregnancy which the most credulous will find it difficult to reconcile with ordinary experience. The results which we are about to quote, are, according to the testimony of their authors, founded on the most reliable data. Yet it must be remarked, that these data are the statements of the women themselves. An amusing instance is related by Dr.

(*f*) The following is an abstract of the celebrated Gardner Peerage case, which came before the House of Lords in 1825: "Alan Legge Gardner, the son of Lord Gardner by his second wife, petitioned to have his name inscribed as a peer on the Parliament Roll. The peerage was, however, claimed by another person, Henry Fenton Jadis, who alleged that he was the son of Lord Gardner by his first and subsequently divorced wife. It was contended that the latter was illegitimate; and in order to establish this point, the evidence adduced was partly medical and partly moral. Lady Gardner, the mother of the alleged illegitimate child, parted from her husband on board of his ship, on the 30th of January, 1802. Lord Gardner went to the West Indies, and did not again see his wife until the 11th of July following. The child whose legitimacy was disputed was born on the 8th of December of that year. Therefore, the plain medical question, taking the extreme view, was, whether a child born 311 days (*forty-four weeks and three days*) after intercourse (from January to December), or 150 days (*twenty-one weeks and three days*), from July to December, could be considered to be the child of Lord Gardner. If these questions were answered in the affirmative, then it followed that this must have been a very premature or a very protracted birth. There was no pretence that this was a premature case, the child having been *mature* when born. The question, then, was reduced to this: Was this alleged protracted gestation consistent with medical experience? Many medical witnesses, comprising the principal obstetric practitioners in the kingdom, were examined on this point. Their evidence was very conflicting, but a large majority concurred in the opinion that natural gestation might be protracted to a period which would cover the birth of the alleged illegitimate child. On the moral side of the question, it was clearly proved that Lady Gardner, after the departure of her husband, was living in open adulterous intercourse with a Mr. Jadis; and on this ground Lord Gardner obtained a divorce from her after his return. It was contended that the counter-claimant was really the son of Lady Gardner by Mr. Jadis. The decision of the House was, that this claimant was illegitimate, and that the title should descend to the son of the second Lady Gardner."—*Taylor's Medical Jurisprudence*, 6th ed. p. 634.

The decision in this case was based on the proofs of adultery, and not on the medical evidence. Had it depended upon the latter, it is doubtful whether it could have been given. The inability of the medical testimony to withstand the sifting examination of the Attorney-General, fully bears out the statements in the text. (Vid. Medical Evidence on the Duration of Pregnancy, with remarks and notes by R. Lyall, M. D., 2d ed. London, 1827.)

(*ff*) Several cases of alleged protracted pregnancy are reported by Mr. Annan, Edinb. Med. Journ., ii. 712; and Dr. J. M. Duncan, *ibid.* p. 967. Dr. Buzzell, of Mass., met with a case in which the dead fœtus was retained *in the womb* for twenty-two months after full term. (Boston Med. and Surg. Journ., June, 1860, p. 400.)

Reid, of an expert midwife, who, when examined in the celebrated Gardner peerage case, deposed that she had once gone ten months with child, that she was always right in her calculations, that she always fainted away at quickening, &c., so that she could not be deceived. Some time after the trial she applied to Dr. Reid, convinced, on such grounds, that she was seven months pregnant. It proved, however, on examination, that she was not pregnant at all.

Dr. Murphy has published tables founded upon a registry of the cases observed in the obstetric practice of the University College Hospital for 1844. These tables are made up from the data furnished by the women themselves. The errors to which we have referred as inherent in the ordinary modes of calculation must therefore impair the value of the results obtained, and no precautions can entirely eliminate them. In addition, the class of patients furnishing these statistics should not be lost sight of. Now, with reference to hospital and dispensary practice, it may be observed that the class of women who are the recipients of charity from these institutions can seldom give an accurate account of the date at which they suppose their pregnancy to have commenced, but fix it in their own minds in connection with some domestic or other occurrence which happened about the same time. "With the low orders of Irish," as Dr. Reid justly remarks, "dates on all subjects appear to be totally out of the question, or they are located merely by a recollection that the occurrences took place somewhere near to St. Patrick's day, Boxing day, Christmas, &c. If they think that a decided answer will please, it is often given simply as the result of a wish to effect this object." In order to obviate the errors arising from such sources, as far as possible, this last author was obliged to erase several hundreds of cases from his tables as doubtful, and finally included in his list of 500 cases only 50 from hospital and dispensary practice, the rest being private cases. Yet, with all these precautions, we find that in one case, where gestation was apparently prolonged to the 314th day, it was noted that quickening did not happen until the sixth month, proving, as he himself says, that conception had taken place later than had been thought. "Had minute investigation been made, at an early period, into the remaining five cases which went beyond the forty-fourth week, it is most likely that some similar facts might have been observed." The tables of Drs. Merriman, Murphy, and Reid have been condensed by Prof. Simpson into the table which will be found on the next page, and which the reader will also find in the paper by Prof. Simpson already quoted.(*ff*)

(*ff*) See *ante*, § 309.

TABLE.

Dates of Delivery, calculated from the last day of Catamenia.

Week.	Days.	Merriman.	Murphy.	Reid.
37th . . .	From 252 to 259	3	12	23
38th . . .	" 260 to 265	13	14	48
39th . . .	" 267 to 273	4	27	81
40th . . .	" 274 to 280	33	28	131
41st . . .	" 281 to 287	22	39	112
42d . . .	" 288 to 294	15	21	63
43d . . .	" 295 to 301	10	25	28
44th and upwards	" 302 to 326	4	2	84
		114	168	500

The total number of cases here reported is 782, of which 355, or nearly one-half, went beyond the 280th day, up to the 326th day. If we take the number that went beyond the 274th day, there will be 547, or more than *two-thirds* of the whole number of women in these reports whose pregnancy lasted longer than what has been considered the average duration of this condition.

This astonishing result would be still more striking if we refer to Dr. Murphy's tables alone. In them there are fourteen cases not included in the foregoing table, because delivery took place before the 37th week—viz., 5 in the 33d, 3 in the 35th, and 6 in the 36th week. Dr. Murphy comes to the conclusion that 301 days is the *average limit* of gestation! Two of his cases attained the extreme period of 342 and 352 days respectively, from which, if we subtract the intermenstrual period of twenty-three days (not 28 days), we shall still be left with a protracted pregnancy of 314 and 324 days, dating from the first suspension of the catamenia.

With all the sources of error we have indicated, and with the ludicrous results issuing from the assemblage of so-called facts in the above table, what inference, it may be asked, can be drawn relative to the laws regulating the duration of pregnancy?

§ 312. Before replying to this question, let us look at a class of cases which afford less room for error. We refer to those where there has been but *one act of intercourse.*

In this, as in all other questions affecting female chastity or continence, the evidence is always open to objection, even where there is no apparent motive for deception. Nothing is more common than for an unmarried female in a pregnant condition to acknowledge one single act of weakness, while the suggestion of its having been repeated is indignantly denied. Indeed, to use the expression of a German author, the acknowledgment of a solitary transgression is usually accompanied with a protestation of its having been as little a sin as was possible under the circumstances. However much, in individual cases and with plausible concurrent testimony, we may be inclined to favor the statement of a female in so unfortunate a position, it is, nevertheless, incumbent upon us, in our endeavors to ascertain the existence of a natural law, to look upon the material before us solely in a scientific light, and examine and judge it accordingly. The possibility of error, therefore, from misstatements upon the part of the female, cannot be lost sight of.

§ 313. An additional source of error, even in the best authenticated cases, lies in determining the *moment of conception*. This, we do not hesitate to affirm, is altogether impossible. So far from conception being always coincident with insemination, as was positively affirmed in the evidence in the Gardner peerage case, experiments upon animals, and observations made upon the human subject, have now shown that a more or less extended interval may elapse between the sexual congress and the conception which follows it, when fruitful. Without entering upon this physiological question, which would lead us into a misplaced discussion, it may be stated without any fear of denial—

1st. That the *ovum* occupies from eight to ten days in its passage from the ovary to the uterus;

2d. That the seminal fluid may retain its fecundating properties in the genital passages for several days;

3d. That conception may take place at any time in the menstrual interval; and,

4th. That, therefore, any calculation based simply upon the date of sexual intercourse, may cause the duration of pregnancy apparently to exceed by a few days the normal period.

§ 314. Nevertheless, in the absence of any more precise method of determining the day of conception, we must content ourselves with that which approaches it most nearly, and making due allowance for errors arising from moral causes, accept as good evidence those cases reported as dating from *a single coition*. Other cases have, indeed, been reported, in which the intercourse was alleged to have taken place but once; but we have rejected all such in which the woman's asseveration could fairly be called in question. In doing so, we have been influenced by no other motive than a desire to attain the truth, convinced that this could only be done by a strict preliminary analysis of each case, in reference to the credibility and standing of the witness, her motives for self-deception or interest, as well as the position and reputation of the reporter.

In the following table, we have placed together all the genuine cases, of this kind, which we have been able to collect. They amount to fifty-six, and are reported by various authors, mostly from their own observation.

TABLE.(*g*)

Of the Duration of Pregnancy, as dated from a single intercourse.

Days.	Reid.	Raciborski.	Rigby.	Lockwood.	Beatty.	McIlvaine.	Montgomery.	Desormeaux.	Merriman.	Girdwood.	Skey.	Anderson *v.* Whittaker.	Lee.	Dewees.	Total for each date.
260			1												1
263	1														1
264	1		1												2
265	1														1
266	2														2
268		1													1
270		1		1											2
271	2														2
272	1			1											2
273	1	1													2
274	6	1								1					8
275	2	1													3
276	3		1	1											5
278	1														1
280	2						1								3
281							1		1						2
283									1			1			2
284				1			1								2
286									1					1	2
287	1						1	1					1		4
288							1								1
289							1								1
291					1		1								2
293	1					1					1				3
	25	5	3	4	1	1	7	1	3	1	1	1	1	1	55
Average, 276 days.															

In the last edition of Dr. Montgomery's work above referred to, he furnishes a table of the duration of pregnancy in fifty-six cases "in which the day of fruitful intercourse was known." We have calculated the average duration of pregnancy in these cases and find it to be nearly 276 days, a result which agrees with and confirms that of the table already given. It does not differ materially from the conclusions of Elsässer from an analysis of 260 cases.(*gg*) But it is most important to bear in mind that the average number of days of gestation in any series of cases by no means represents the duration of the greater number of those very cases. For while in the table above given 276

(*g*) Dr. Reid, Lancet, 1850, vol. ii.; Raciborski, De la Puberté, &c., p. 460; Rigby, System of Midwifery, p. 84; Lockwood, Am. Jour. Dec. 1847; Beatty, Dub. Med. Jour. vol. viii.; McIlvaine, Am. Jour. 1848; Montgomery, Signs of Pregnancy; Desormeaux, Dict. de Med. vol. x.; Merriman, S. W. J., Taylor's Med. Jur., Am. Ed., p. 399; Girdwood, Lancet, Dec. 1844; Skey; Anderson *v.* Whittaker (in Dr. Reid's Paper, loc. cit.); Lee, Med. Gaz. 1831; Dewees, Midwifery.

(*gg*) Henke's Zeitschrift, lxxiii. 394.

is the average number of days of gestation, five cases only terminated on the 276th day, eight did so on the 274th day, four on the 287th, &c.

The result yielded by the foregoing table brings down the average duration of pregnancy much below the exaggerated estimate of some authors, below even the conceded average of many accoucheurs, but places it in remarkable harmony with the prevailing popular and medical belief. Two hundred and seventy-six days are included in nine calendar months; and, according to these calculations, represent the average duration of pregnancy from a single sexual act.

§ 315. Such appears to be the only result attainable at the present time. Without giving positive certainty to our knowledge respecting the law governing the duration of pregnancy, it renders the probability of error in other modes of investigation than that based upon the foregoing principles, stronger than it can, by any arguments, be made to appear. In other words, it proves that the *apparent* variation in the length of the term is greater than the *actual*. Although not affording us any reason to consider the normal period to be a fixed one, from which there is really no departure, it nevertheless reduces the excess within reasonable bounds.

§ 316. That a deviation from the normal period is possible, is evident not only from the instance we have quoted, but is also sustained by observations upon certain domestic animals. Even here it is necessary to premise that there are sources of fallacy. The analogy between the function of menstruation in the female, and the period of sexual excitement in the cow, mare, &c., is far from being well established, although some late authors have assiduously endeavored to maintain that it is real. Hence the entire impossibility of knowing when conception occurs in them. Moreover, some of these animals will not refuse the male, although already pregnant, and therefore the origin of the pregnancy may not be dated far enough back. This is the case with the cow.

§ 317. Prof. Krahmer,(*h*) whose observations we cite below, gives examples of this. Thus, "No. 105" took the bull on the 2d of May and on the 23d November, 1815; she calved on the 17th February, 1816; *i. e.*, 296 days from the first covering, and 86 days from the second. "No. 42" took the bull the 30th November, 1808, and again 31st March, 1809; she calved 7th September, 1809; *i. e.*, 281 days after first, and 160 days after second covering. Another case is mentioned in which a cow was slaughtered on account of this propensity, and was then found to have been some time with calf.

Lord Spencer(*i*) published, some years since, the result of seven hundred and sixty-four instances of the gestation of cows. The average term he found to be 285 days. Three hundred and fourteen cows calved before the 284th day, and three hundred and ten after the 285th. At 284 days, sixty-six calved; and at 285 days, seventy-four. Few cases exceeded the period of 285 days by more than five or eight days; eight only exceeded it by more than twelve days; and one only went to the eighteenth day beyond it. Ac-

(*h*) Beiträge zur Lehre von der Schwangerschaftsdauer, Henke's Zeitschrift, 1849, I. H. p. 98.

(*i*) Journal of the Agricultural Society, as quoted by Reid, Beck, and others.

cording to M. Tessier's observations, the excess above the average period, in one hundred and two mares and one hundred and sixty cows, was from fifty-seven to sixty days in the former, and thirty-two to thirty-five in the latter.

§ 318. The most recent and extensive researches on this subject are those of Professor Krahmer, of Halle. His observations were made on sheep and cows. Every precaution was taken to insure accuracy, each individual in the flock or herd having been marked when heat appeared, then separated therefrom and allowed access to the male. The day of covering and of the birth of the young were registered. Among the sheep, the birth fell on the following days :—

2	fell on the	145th day,	7	fell on the	153d day.
3	"	146th "	3	"	154th "
11	"	147th "	1	"	155th "
14	"	148th "	1	"	159th "
38	"	149th "	1	"	166th "
44	"	150th "	1	"	168th "
31	"	151st "	1	"	169th "
18	"	152d "	1	"	171st "

If the average of these 177 births be calculated, it will be found to be 150, and yet only one-fourth of the whole number really fell on the 150th day. Thus the probability appears to be, that of four ewes only one will drop her lamb at what may be considered the normal term of gestation in the sheep.

The whole number of cows observed was 1105 : the observations covering a space of twenty-six years, viz : from 1808 to 1832, and including fifty-five in 1847. The average duration is stated at 282 days ; but the tables of Dr. Krahmer include no less than forty-six births before the 260th day, which ought certainly to be looked upon as premature. Leaving these aside, the average would probably be increased by a day or two. Stated in weeks, and neglecting forty-six births before the 38th week :—

12	cows	calved	in the	38th	week.	21	cows	calved	in the	44th week.
72	"	"	"	39th	"	9	"	"	"	45th "
335	"	"	"	40th	"	3	"	"	"	46th "
429	"	"	"	41st	"	5	"	"	"	47th "
135	"	"	"	42d	"	4	"	"	"	48th "
33	"	"	"	43d	"	1	"	"	"	51st "

§ 319. If the argument from analogy be admissible, the fact may be considered as well established, that pregnancy is a condition which may occasionally exceed the normal limit for its duration ; but the limit to this excess cannot, in the present state of physiological science, be accurately known. It is undeniable, however, that the greater the amount of deviation the more authentic and convincing should be the proof required of its actual protraction. The suggestion has, indeed, been made, that the development of the child might afford a key to the extent of the protraction ; but facts derived from this source rather militate against than for its reality. In most of the cases in which a child is supposed to have been carried beyond the usual period, it has not attained a greater size than is met with in ordinary cases. Sometimes,

indeed, it has been rather smaller than the average. If we could admit that pregnancy ever attained the period of twelve, fourteen, or sixteen months, as has been asserted, there is no reason why the child should not have continued to grow to a size incompatible with its being born alive. The supposition, that after nine months it ceases to grow, is an assumption unwarranted by analogy or reason, and put forward only with the hope of maintaining a foregone conclusion.

§ 320. While, therefore, we admit the occasional prolongation of pregnancy beyond its usual limit of 276 days, to the extent of perhaps four weeks, we cannot venture, with such fallacious evidence as often serves as the basis of the calculation, to accept, as authentic, those instances in which it has apparently been prolonged beyond this time. The following case quoted by Dr. Reid, from Bartholin, will form a fitting conclusion to these remarks.

"A young girl. of Leipsic, of doubtful character, accused a young man, who was rich, of having impregnated her. The magistrates acceded to the request of the friends of the accused, and had the girl confined in prison and kept under proper surveillance. She was not delivered until after the sixteenth month; but the fœtus was very small, and lived only two days, being imperfectly developed. This case was adduced as a very strong instance of protracted gestation, the young woman being so strictly watched by the keepers of the prison as to preclude all chance of impregnation whilst there. The undeveloped condition of the fœtus, however, is a sufficient proof against a sixteen months' gestation, and as to the chance alluded to, we may simply ask—

'*Sed quis custodiet ipsos custodes?*'"

§ 321. We have endeavored, in this chapter, to show how far the actual duration of pregnancy is capable of *demonstration*, and have, therefore, forborne introducing into the discussion any arguments not based upon direct observation of the phenomena of gestation in man or animals. It is not unusual, however, with writers in discussing this subject to allege in proof of the really variable and uncertain limit of this process, that nature is never restricted in her operations within precise and well-defined limits. This argument is presented with great clearness in the following pages, containing Judge Lewis' opinion in the case of Com. *v.* Hoover. We cannot, however, refrain from reiterating the opinion that the seeming analogies of nature cannot for a moment be adduced in opposition to the facts of physiological science.

§ 322. 3d. *Legal decisions.*—The following decision on the duration of pregnancy deserves especial weight from the character of the learned Chief Justice of Pennsylvania, by whom it is reported as well as decided.

At a special Court of Quarter Sessions of Lycoming County, at which Judge Lewis presided, the following instructions were given in reference to the count for fornication and bastardy: "If you believe from the testimony of John Reibsam, that the prosecutrix had submitted to improper connection with the witness, *about the time when the child was begotten, this circumstance destroys her competency as a witness to prove that the defendant is the father of her child.* The organs of conception, like those of digestion, perform their

appropriate offices, without the volition of the female. She is not conscious, at the moment of the occurrence, of what takes place. It is only by *inference* that she can afterwards fix the paternity of her offspring. If her intercourse has been confined to *one* individual, there is no difficulty in drawing a correct conclusion from the premises. But if she has exposed herself to the embraces of several, at or about the time she became pregnant, she has placed it out of her power to draw any safe conclusions on the subject. Where two causes are shown to exist, either of which is adequate to produce the effect, and there are no circumstances to determine the mind in favor of either, the cause must necessarily remain uncertain; and in that case there is not sufficient evidence to justify a conviction."(*j*) In trials for this offence, the defence is frequently rested upon the period of time which elapses between the alleged criminal connection and the birth of the child, in cases of material departures from the usual period. In a case of this description, *Com.* v. *Hoover*, the President of the Court of Quarter Sessions of Lancaster County (Lewis) gave the following charge to the jury: Com. *v.* Elisha F. Hoover. "The defendant is indicted for fornication and bastardy. The prosecutrix, Catherine E. Rife, is a competent witness, but her credibility is for the jury. According to her account, the child was begotten on the 23d of March, 1845. It was born on the 30th of January, 1846; a male, fine, large, and healthy. The period of gestation was 313 days. It is conceded that the defendant had no intercourse with the mother after the 23d of March, 1845, and the time of delivery is fixed with equal certainty. A question of science has arisen, respecting the possibility of protracted gestation. The usual period is nine calendar months, or 273 or 275 days. What has been denominated the *extreme* of the *usual period* is 280 days, or ten lunar months. But whether any, and, if any, what longer time may be allowed as possible, are the questions which this case presents for decision. Medical writers of celebrity and authority are arrayed on both sides of these questions. And the medical witnesses upon the stand are in like manner divided in opinion. In constructing this evidence, so far as respects the *facts* narrated by each, it is proper to consider that writers and witnesses are respectively relating only the results of their own knowledge; and when one states that no case of protracted gestation has fallen under his observation, it is but negative testimony, and cannot justly be relied upon to invalidate the negative evidence of others, equally entitled to credit, who enumerate cases of the kind, which they positively affirm to have come within the range of their practice and knowledge. In the most familiar transactions of life, witnesses will differ in their narration of circumstances. In narrating a simple assault and battery, the bystanders frequently vary in their statement of the facts. Some narrate incidents which others omit. Conceding all the witnesses to be equally worthy of credit, the rule is to reconcile their evidence so that all will stand consistently together, if this be reasonably practicable. Some witnesses observe circumstances which others have not seen. Negative evidence is therefore deemed insufficient to outweigh affirmative statements from witnesses equally entitled to credit. One gentleman, in a very long course of practice,

(*j*) Com. *v.* M'Carty, 3 Penn. L. Journ. p. 140.

may have failed to observe any case of the kind. Another, in a very brief period, may have noticed several. And it is reasonable to believe that where such a diversity of opinion exists, each will be in some measure influenced by his own professional experience, and that this will also, to some extent, affect his belief in the cases reported by others. There are, doubtless, many of these cases where the struggle for character and property, and the circumstances of the parties whose interests have been involved, have furnished temptations to falsify, and may have influenced the decisions of the tribunals. But, after making all proper allowances for cases of this description, the whole evidence on the question, when fairly considered, appears to show that cases of protracted gestation are not impossible, although their existence is very unusual. The heads of wheat in the same field do not all ripen together. The ears of corn on the same stalk do not all come to maturity at the same time. Even the grains of corn on the same ear ripen at different periods. The fruit on the same tree shows a like deviation. A portion will ripen and fall, while other portions remain comparatively green upon the parent stalk. The eggs of the fowl, under process of incubation at the same time, are subject to the same variation. In quadrupeds, if the testimony of M. Teissier be believed, we have proof of the like irregularity. Whatever may be the causes operating in each case to divert nature from her accustomed course, to accelerate or delay her usual progress, the human species, like the rest of creation, seem occasionally under their influences. The developments of puberty, although generally shown at a certain age, are far from regular. Some individuals approach it earlier, others later in life. Intellectual maturity is subject to like irregularities. Some are precocious, others astonishingly tardy in arriving at the usual degree of discretion. The intervals between the catamenial visits, although in general regular and fixed, exhibit remarkable deviations. Their final departures, although generally to be expected at a certain age, are as irregular as their first approaches, and as subject to variations as were their periodical returns. A certain period of life has been usually assigned for the terminations of a mother's perils, but the instances of extensive deviations from this general rule are numerous and well established. The gestation of one child at a time is according to the usual course of nature, but the birth of twins, triplets, &c., furnish indubitable proofs of astonishing departures from the usual course. The sensations of the mother, produced by the elevation of the fœtus from the cavity of the pelvis (called quickening), although usually occurring at a certain period, are known to be subject to the like departure from the usual time. It has been said that human life does not generally extend beyond seventy years. But if this be the general rule, the departures are numerous. The most distinguished jurist perhaps now living in the whole world (Chancellor Kent) will be eighty-three years old on the first of July next; and yet, within a few days, I have been honored by the receipt of a letter from him, under the date of the 18th instant, in which he states that he is still in good and active health, that his relish and ardor for studies and legal learning continue unabated, that he has the blessing of good eyes, and that he is still an observer of what passes with lively sensibility. This instance may serve to illustrate not only the occasional deviations from the general rules respecting

the duration of human life, but the like variation in respect to intellectual vigor, by which one individual attains a pre-eminence over the generality of mankind. All nature abounds with occasional departures from her general customs. Even the compass, which guides the mariner on the trackless ocean, which enables science to fix with reasonable certainty the boundaries of kingdoms and farms, and the truthfulness of which to its accustomed law has been perpetuated by a proverb, is subject to mysterious but acknowledged variations. From analogy, and from the statements of distinguished authors and eminent witnesses, after making every allowance for mistakes and the operation of unfavorable influences, we are led to the belief that although nature delights in adherence to her general usages, she is occasionally retarded in her progress, and otherwise coerced, by causes not always apparent, into extensive deviations from her accustomed path. And we are induced to believe that protracted gestation for the period of 313 days, although *unusual* and *improbable*, is not *impossible*. The evidence to establish the existence of such a considerable departure from the usual period should be clear, and free from doubt. The witness should possess a character beyond reproach, and her testimony should be consistent and uncontradicted in all material facts. If the jury are satisfied that the evidence for the commonwealth is of this character, the unusually long period of gestation does not require them to disregard it. The law fixes no period as the *ultimum tempus pariendi*. The *usual* period has been stated, but longer time may be allowed, according to the opinions of the physicians and the circumstances of the case. The question is, therefore, open for the decision of the jury. If they believe the witness, they may find the defendant guilty." The jury found the defendant guilty. The prosecution was conducted by Messrs. Frazer and Mathiot, and the defence by Mr. Stevens. The case is fully reported in the *American Journal of the Medical Sciences*, No. 24, new series, Oct. 1846, p. 535, accompanied with a communication from Professor Atlee, in which he mentions two cases within his own practice where the period of gestation was about a year.(*k*) This latter period has received the sanction of the legislature of Pennsylvania as the longest period of indulgence which the law allows to a married woman who has a child in the absence of her husband. If she cannot show that he was in her company, or was within the colonies between the easternmost parts of New England and the southernmost parts of North Carolina, within twelve months next before the birth of the child, she is deemed an *adulteress* under the 4th section of the act of 1705.

§ 323. 4th. *Early Viability.*—From the uncertainty which attends the establishment of the date of conception, and from the unequal development of the fœtus in different cases at different periods of gestation, the difficulty of knowing the actual age of an immature child is often very great. When born at the eighth month, the weight and size do not differ materially from what is often met with at maturity, but yet there are marks of imperfect development which are generally conclusive as to its immaturity, and which enable us to judge that but a few weeks were wanting to complete the development. (Vid.

(*k*) Amer. Journ. of the Med. Sciences, Oct. 1846, p. 535.

ABORTION.) Thus, at the *eighth* month its length is only two or three inches, and its weight one to two pounds below the average. The pupillary membrane has disappeared, the testicles are found in the internal abdominal ring, and the middle point of the body is nearer the umbilicus than the sternum. In the fœtus, at *seven* months, however, the length hardly exceeds a foot, nor its weight four pounds. Children born at this age are often reared, if they have not been neglected. There can be no possibility of mistaking a fœtus of seven months for a mature child, while this error might readily be made with one at eight months.

§ 324. The most important epochs, however, relative to questions of viability and paternity are the *fifth* and *sixth* months. A great discrepancy will be found in the statements of authors as to the weight and length of the fœtus in these months. The weight of a six months' fœtus is, for example, set down by Burns, Hamilton, and Devergie at one pound, and by Maygrier at two pounds; while the last-mentioned writer states its length to be twelve inches, the others make it from eight to ten inches. The length of a five months' fœtus is usually considered to be from six to seven inches, but Maygrier and Sömmering allow as much as ten inches. In forming an opinion, therefore, as to the exact age of a child between the fifth and seventh month of uterine life, this variation in the estimates, by different authors, should inspire caution and reserve. It is better to acknowledge the impossibility of certifying the exact age, than to attempt to give precision to a point incapable of receiving it.

§ 325. The period mentioned may be regarded as the debatable ground relative to the viability of the child. Mr. Whitehead says, that when abortion takes place before the *end* of the *sixth* month, it is invariably fatal to the offspring, either before birth or in a short time after, and at any period before the completion of the full term, it is more or less injurious to its well-being. Instances are, however, on record which disprove the correctness of this statement. Dr. Erbkam, of Berlin, has reported a case in which a fœtus only six inches long, and weighing eight ounces, was born alive, and survived half an hour. It moved its arms and legs, turned its head from side to side, and opened its mouth. The action of the heart continued after all other movements had ceased. The child was shown to the celebrated Müller, who expressed the opinion that it was not more than *four* months old.(*l*) A case, which is remarkable, and of great interest, on account of the accuracy with which the date of impregnation, and therefore the true age of the child, was ascertained, is reported by Dr. Barrows, of Hartford. Mrs. J—— miscarried on the 18th of May; her lochial discharges were profuse and long continued. Dr. B. was called to prescribe for her on the 18th of June, when she had increased vaginal discharge, probably the menstrual flow; this continued for a week or two, before it wholly subsided. She went from home, on the 27th of June, to spend some days in the country, and at this time, she first indulged in sexual intercourse subsequent to her miscarriage. On the 18th of November, in consequence of over exertion, she again miscarried. Dr. Barrows attended her on this, as on the previous occasion. The ovum was expelled entire.

(*l*) Am. Journ. Med. Sci., 1838, p. 244.

The sac contained at least two pints of fluid. "The membranes were not ruptured for some little time, during which the movements of the child were active and vigorous. On rupturing the membranes, and exposing the child to the air, it instantly gasped, or, perhaps I ought rather to say, uttered a cry so loud as to be heard distinctly at a distance of several feet, it being at the same time covered with the bedclothes. The cord was tied on its ceasing to pulsate, at the end of two or three minutes, then separated, and the child wrapped in warm flannels. As it continued to manifest the ordinary appearances of life, its condition was watched with much interest and care. It breathed with a kind of convulsive gasp at intervals of one or two minutes, for a period of forty minutes. The heart beat regularly for forty-five minutes. . . . . The child repeatedly opened its mouth, and thrust forward its tongue." It measured (it was a female) *ten* inches in length, and weighed *fourteen* ounces. The integuments were, for the most part, firm and of a light color; the portion covering the abdomen was thin, and of a reddish hue. The hair of the head was like down, the rudiments of the nails were plainly discernible, and the iris was entirely closed by the *membrana pupillaris*. The head was tolerably firm, but the frontal and parietal bones were imperfect, and widely separated.(*m*) Dating from the first intercourse after the previous miscarriage, the age of this child was 144 days, or less than five calendar months. There is nothing in its size, weight and development, as reported, inconsistent with the mother's reckoning and the facts related by her physician.

Another case, in which a living child was born on the 179th day, is interesting from the fact that the child lived four months, and then died of an epidemic disease. When born, it was so feeble that it was not thought possible that it could live. Its cry could be heard only at a few yards' distance; it had no nails, its hair was downy, its skin florid and thin, and its extremities imperfectly developed. The bones of the head were soft and easily compressed, and the sutures wide. The pupillary membranes were entire. It was placed near the fire, in a basket, wrapped in soft cotton. It could not suck, but milk was dropped into its mouth through a quill. Forty days after birth it was found to be thirteen inches long, and weighed three pounds. The centre of the body was nearly an inch above the umbilicus.(*n*) A somewhat similar case, is that of Dr. Barker, of Dumfries, in which the child was born on the 158th day of gestation; it weighed one pound, and measured eleven inches. Three years and a half afterwards it was still living, and weighed twenty-nine pounds and a half.(*o*)

In the case related in great detail by d'Outrepont, of Bamberg, a child which was not more than twenty-seven weeks, or six months old, when it was born, was still living at the age of eleven years. It was not larger at that time, however, than a boy of eight years.(*p*) Another curious instance, in which the life of a very premature child was preserved, is narrated by Dr. Rodman, of Paisley. The child's uterine age could not have been more than five months, since, three weeks after birth, it weighed only one pound thirteen ounces, and

(*m*) Am. Journ. Med. Sci., April, 1853, p. 380.
(*n*) Lancet, April, 1852. (*o*) Med. Times, Sept. and Oct. 1850.
(*p*) Henke, Zeitschrift, vol. vi.

measured between eleven and thirteen inches. It survived its birth one year and nine months.(*q*)

§ 326. Nothing need be said upon the possibility of premature development, except that it is not sustained by any authentic facts, and that it is disproved by daily experience, which shows that the fœtal development is regular and progressive, except when retarded or arrested by disease. That a child can anticipate, as it were, its maturity, acquiring, *e. g.*, at six or seven months the development it obtains usually only at nine, is far more difficult to credit than that the mother or her physician should be mistaken in their reckoning. In our remarks upon protracted gestation, we have exposed the difficulty, not to say impossibility, of fixing the date of fruitful intercourse or of conception, and the mistakes which the female is apt to commit by the ordinary manner of calculating the duration of pregnancy. Those remarks are equally applicable here, and perhaps, indeed, more so; for if it is rare to find the child at the close of a seemingly protracted pregnancy over-mature, it is still more contrary to experience that a fœtus should be a month or more further advanced in its development than belongs to the period of uterine life which it has reached.

§ 327. It is sometimes of importance to determine the momentary life of the child, even although the possibility of its surviving is out of the question. The question as to *what constitutes live birth*, although of less importance at this time than at the natural term of gestation, has, nevertheless, some bearing upon civil rights and relations. Every spontaneous movement is an evidence of life. To what degree these must be carried, to constitute evidence of life before a court of law, it is not for us to determine. The following case will serve, however, to show that a child may be born alive, in this sense, in the fourth month: A fœtus was born which weighed exactly nine and a half ounces, and measured eight inches in length. On touching the feet and hands, the limbs were immediately drawn up and moved about. On blowing on the face, the lower part of it was tremulously moved, and the mouth at each time opened, and three or four times an attempt to respire or gasp, accompanied by an apparently respiratory movement of the chest, took place. The pulsations of the heart through the thin walls of the chest could be readily observed. After the umbilical cord was cut, these movements became more feeble, and soon ceased. On opening the chest, the situation and appearance of the lungs and other organs were characteristic of its apparent age. The lungs, in color and volume, resembled those of an early fœtus; and, with the exception of one or two ecchymosed spots, no color or other evidence of developed air-cells were noticed, all the appearances indicating that no air whatever had ever reached the tissue of the lungs. The brain was afterwards minutely examined, and also found to be characteristic of the apparent age, as were also the other fœtal organs. The calculations of the mother corresponded with the age given to the fœtus.(*r*)

(*q*) Guy's Med. Jur. p. 180.

(*r*) Dr. Keiller. Read before the Edinburgh Obstetrical Society. Ed. Month. Journ. Sept. 1854.

CHAPTER IV.

SUPERFŒTATION.

§ 328. CONCEPTION during pregnancy is termed superfœtation. The early physicians accorded a ready belief to its frequent occurrence; but modern inquiries have led to a more precise and restricted application of the term. There are cases of apparent and of real superfœtation. They may all be conveniently considered under the following divisions:—

1st. Twin pregnancies in which the children, by certain physical peculiarities, prove that they have had different fathers.

2d. Parturition of children nearly at the same time, but differing much in the degree of their development.

3d. After the birth of a mature child, a second one equally mature is born, after an interval which may amount to four months.

1st. Under the first division, may be ranged all those cases, of which now a great number have been recorded, where women have given birth to twins of different colors. In some of these the fact of cohabitation at short intervals with men of different colors was admitted by the woman. A case, very frequently quoted, is that related by Buffon, as having occurred in South Carolina, in which a white and a mulatto child were born to a white woman, who, immediately after having had commerce with her husband, was obliged to receive the embraces of a negro. A similar case is related by Dr. Lopez, in which the mother was a negro woman, and the twins were, the one black and the other mulatto.(*s*) Dr. Tyler Smith refers to a case occurring in the Brazils, where the indigenous race is copper-colored, but where there are negroes and whites, in which a creole woman had three children at a birth, of three different colors, white, brown, and black, with all the features of the several races.(*ss*)

§ 329. The same fact has been observed in animals. Mende relates that a mare, which had been covered by a stallion, and shortly afterwards by an ass, produced at the same birth both a horse and a mule. Dr. Read, of Andover, reports a similar case, except that the mare was covered by the horse two or three days after the ass.

§ 330. Up to what period, after one conception, a second impregnation is possible, cannot, in the present unsettled state of our knowledge respecting the early phenomena of fecundation, be determined with exactness. While some eminent physiologists continue to maintain that the ovum is fecundated in the ovary itself, more recent researches tend to show that it takes place, in normal cases, in the uterus or in the Fallopian tubes, the ova being detached

(*s*) Am. Journ. Med. Sci., Oct. 1845, p. 315. For a large number of similar cases, vide references in Beck's Med. Jurisprudence, i. 265; also a case by Dr. Carter, of Va., in Phil. Med. Ex., 1849, p. 523, and another by Dr. A. F. Attaway, of Geo., Am. Journ. Med. Sci., July, 1854, p. 290.

(*ss*) Lancet, April 1856, p. 388.

at the menstrual periods, and finding their way into the womb, independent of fecundation. It will be readily seen, therefore, how many questions must be answered before this one can be solved. In addition, the period at which the deciduous membrane is formed in the uterus is not known with sufficient precision to enable us to judge how soon an efficient obstacle is placed against the penetration of the seminal fluid into the uterus, or to an additional impregnation. Dr. J. M. Duncan denies that the plug of viscid mucus in the cervix of the uterus during the early stage of pregnancy, is a sufficient barrier against a second impregnation, as he has found it in the non-menstruating *unimpregnated* uterus. He does not, however, prove that in the latter case impregnation can take place. He also is led to believe, from an inspection of an ovum *in situ* of about eight weeks, that sufficient space exists between the decidua vera and reflexa at this time, and an open communication to the Fallopian tube, to permit impregnation. He believes that the decidua is formed by the development of the normal mucous membrane of the uterus, without closing the tubes or the cervix uteri.(*t*) This was the doctrine of William Hunter, and it has received the weighty sanction of Dr. Tyler Smith. In all the known cases of undoubted superfœtation, such as those above cited and referred to, the time which intervened between the separate acts of coition was very short; in fact, where the circumstance has been confessed by the woman, it appears that one sexual act followed almost immediately upon the other. In a case related by Moseley,(*u*) a negress brought forth two children at a birth, one a negro, the other a mulatto. She confessed that a white man on the estate came to her hut one morning before she had risen, and she suffered his embraces, *almost instantly* after her black husband had quitted her. In another in which the children were the one black and the other mulatto, the negro mother admitted having cohabited *during the same night* with a negro and an European.(*v*)

A case of superfœtation by Dr. Taylor, of Miss., forms an exception apparently to the rule. Here a negress brought forth at one birth a black and a mulatto child. The latter appeared to be "three weeks younger than the negro," but as the woman admitted having cohabited with a white man one week after the cessation of the catamenia, and upon a *night succeeding* an act of intercourse with her husband, the case cannot, we think, be viewed differently from the preceding.(*w*) The same may be said of Dr. Attaway's case, before referred to; but in this the date of the conception of the white child might have been nearer that of the negro than three days—the interval assigned by the woman.

§ 331. 2d and 3d. The cases of *apparent* and pseudo-superfœtation may be embraced in the second and third divisions, which will here be considered together. They are all of them explicable upon the supposition of unequal development of twins; this inequality being due often to some natural defect in one placenta or one fœtus, but frequently also to a direct compression exercised by one child upon the other. In cases where this compression has

(*t*) Ed. Month. Journ., April, 1853. (*u*) Diseases of Trop. Climates, p. 111.
(*v*) Casper's Wochenschrift, Jan. 8, 1842.
(*w*) Am. Journ. Med. Sci., April, 1849, p. 549.

been so great as to cause the death of one fœtus, it may be easily recognized after birth by the appearance of the body. Thus, in a case referred to by Dr. Beck,(*x*) Mr. Ingleby says: "A few weeks ago, on examining a mature placenta, the expulsion of which was attended with severe hemorrhage, a fœtus of four or five months, flattened but not putrid, was found within the membranes, closely adherent to the uterine surface of the mass, and yet a full sized living child, in connection with this placenta, had just been expelled." Duvernoy(*y*) also relates an instance in which the mother gave birth to a living female child, healthy and mature, and immediately afterwards to a dead fœtus of about six months, with its head and face extremely flattened and deformed. Pouchet(*z*) gives the history of a most interesting case communicated to him by Dr. Merrielle. A lady was delivered of a healthy and mature female child, which was soon followed by the placenta. Her labor pains continued notwithstanding, and the next morning she expelled an entire ovum, containing another fœtus. This fœtus presented all the characters of a child of four months; it was seven inches long. Almost every part of its body bore evident traces of compression. Its head was flattened transversely to such a degree, that the sinciput presented a sharp edge, and at the temporal region its diameter was not more than six lines. The chest was also very much compressed. The upper extremities, and particularly the left hand, were greatly flattened. The appearance of the skin showed that the fœtus had been a long while dead. It was of a pale brown color, and denuded of epidermis over a great part of the body. Dr. Streeter related a case to the Westminster Medical Society, in which one fœtus was alive at full term, and the other blighted, having apparently perished at the third month. It had undergone very little decomposition, and was squeezed quite flat.(*a*) Dr. Perkins, of New London, in a letter to Dr. Porter, May 16, 1840, relates as follows: That he delivered a woman of a healthy male child, at full term. The same night she expelled a fœtus enveloped in its membranes, between four and five months old, entirely undecomposed and uninjured, except the head, which was compressed.(*b*) Dr. Lopez presented to the Medical Society of Mobile a specimen of a blighted fœtus of the third month, discharged with a living child at full term. The skull was so completely compressed, that the opposite parietal surfaces were in close contact. The whole body, in fact, was distorted and flattened by the pressure exercised by the other child upon it. It was not at all decomposed.(*c*)

§ 332. Having thus seen the compression which one fœtus in a twin pregnancy may exercise upon the other, it is not difficult to understand that the pressure may be sufficient to retard its growth without actually destroying

(*x*) Med. Jur. i. p. 269.
(*y*) Note sur une grossesse double parvenue à terme. Strasbourg, 1834.
(*z*) Théorie positive de l'ovulation spontanée. Paris, 1847.
(*a*) Lancet, Oct. 30, 1841.
(*b*) Lopez, Am. Journ., Oct. 1846, where other cases will also be found illustrative of this fact. Dr. J. B. Davis gives a case of the unequal development of fœtuses in the same uterus. A woman, seven months advanced in pregnancy, miscarried with twins; one was of seven months' growth, the other of not more than as many weeks. Ohio Med. and Surg. Journ., Sept. 1850. Another case in N. W. Med. and Surg. Journ., Nov. 1850, and another in the New Orleans Med. and Surg. Journ., Sept. 1850. Consult also Montgomery, op. cit., art. Secondary Ovum.
(*c*) Loc. cit.

its existence. If this compression becomes at a certain period so great, that without destroying the vitality of the fœtus, it only permits the blood to reach it in an insufficient degree, one twin becomes arrested in its development, while the other goes on increasing until its maturity, when it is expelled. The remaining fœtus, now relieved from the compression, grows with facility, and is born in its turn when it has reached maturity. If, for example, a fœtus, in consequence of the compression of the placenta, have at nine months a no greater development than is usual at five, it follows that after the birth of its fellow it must remain four months longer in the womb. Where the placenta is common to the two children, this cannot, of course, occur, since the birth of one child would render the intra-uterine existence of the other impossible.(*d*) Among the more remarkable cases illustrating the unequal development of twins, may be mentioned that communicated to Foderé by Desgranges, at Lyons, relative to the wife of Raymond Villard. She was delivered, on the 20th January, 1780, of a living seven months' child; but the delivery was not accompanied with the usual symptoms: no milk appeared; the lochia were wanting, and the abdomen did not diminish in size. Three weeks after the delivery, she felt the movement of the fœtus, and on the 6th of July, 1780 (five months and sixteen days after the first birth), she was again delivered of a living female child. The milk now appeared, and she was enabled to nurse her offspring.(*e*) There was an interval of one month in the birth of two mature children in a case related by Dr. Irvine.(*f*) In another case, a woman, 35 years of age, was confined on the night of the 30th of March, 1848. The placenta came away without difficulty. The size of the abdomen remained very considerable; the lochia did not flow, and nevertheless the surgeon did not conceive the possibility of another child. Dr. Prival, of Bedarrieux, was called in, and at once ascertained the presence of a second child. The one already born was full-sized, healthy, and took the breast with avidity. The mother would not remain in bed; she arose and occupied herself with her household cares. Twenty-one days after the birth of the first child, labor-pains again came on, and another child was born, as strong and healthy as the first.

Instead, therefore, of attempting to explain those cases, in which, on account of the birth of mature children at an interval varying from a few days to several months, upon the hypothesis of superfœtation, it appears far more easy and rational to believe that they are examples of twin pregnancy, in which one fœtus has grown at the expense, as it were, of the other, and is first expelled; the second remaining until it has acquired the necessary maturity. Conclusive evidence of the fact of compression is afforded in those cases of double monsters in which the fœtuses differ considerably in size. Such an one, it is stated by Dr. Duncan, exists in his pathological collection.(*g*)

(*d*) *Vide* Pouchet, loc. cit.

(*e*) Foderé, vol. i. 484.

(*f*) Med. Times, Dec. 28, 1844.

(*g*) Am. Journ., July, 1849, p. 247, from Med. Times, May 26. For other cases, *vide* Med. Times, Dec., 1844; Henke's Zeitschrift, 1837—case by Dr. Möbus; Beck's Med. Jur. i. p. 266. A similar case, with the exception that the second child was not born until forty days after the first, is reported in Month. Journ. of Med., Ed., Ap. 1855, from Gaz. des Hôpitaux, Dec. 1854.

§ 333. It has been suggested by various authors that superfœtation can be explained upon the supposition that the uterus was double; but although not a few instances of double uteri are on record, yet, in all, pregnancy, where it existed, occurred on one side only.(*h*) We have succeeded, however, in finding a remarkable case which has been hitherto strangely overlooked. A woman, native of Modena, became pregnant for the seventh time in 1817. Nine months afterwards, she was delivered of a male child, healthy and fully developed. The placenta was expelled and the woman recovered her health and strength entirely. Still, one-half of the abdomen remained enlarged, and the movements of a fœtus were distinctly ascertained. One month after her last labor, she was again confined of a living male child, also well formed. A few years after, she was again pregnant, and bore a child now living. This woman died afterwards of apoplexy. On examination, the uterus was found to be double, but with a single cervix;(*i*) hence this may have been either a case of real superfœtation—the children occupying each one horn of the uterus, and conceived at the interval of a month—or, on the other hand, it may have been really a twin pregnancy, but whether in the same or different cavities does not appear.

The following are the conclusions of Casper upon this subject: 1. The great majority of all the cases of alleged superfœtation have their origin in fraud or in self-deception. 2. Very many of them are nothing more than twin pregnancies. 3. The occasional occurrence of a second conception within a few days after a first, cannot be rejected upon scientific grounds. 4. It is not to be believed that a new conception can take place in a female who is several weeks or months pregnant. 5. The possibility of a double pregnancy in a double uterus is not to be denied.(*a*) Prof. Kussmaul, of Heidelberg, who has thoroughly examined this subject, concludes that the condition of pregnancy offers no real hindrance to a second conception within the first two or three months. He holds, however, that true superfœtation, or the result of the fecundation of separate ova within different menstrual periods, if judged of by the cases that are recorded under this title, are simply examples of multiple conception, followed by the death or arrested growth of one or more of its products.(*b*)

§ 334. It may be necessary to state, that where extra uterine pregnancy takes place, the uterus may receive a new ovum. Mende(*j*) gives two cases of this kind, and Horn(*k*) relates a case of coexistent uterine and extra uterine pregnancy, in which the woman was safely delivered of the child which was contained in the uterus.

(*h*) Dr. Oldham (in Guy's Hosp. Rep. vol. vi. p. 551) gives several instances, one of which is particularly remarkable, since not only the uterus, but the vagina also was double. "It was divided," he says, "by a septum of dense organized tissue, sufficiently loose and elastic to stretch without causing pain, so that both canals were equally capacious." The duplicity of the uterus was acertained beyond a doubt. The woman was safely delivered. In the unimpregnated half, menstruation did not occur during pregnancy.

Another remarkable case of double uterus and vagina is reported by Dr. Kelly, of N. York (Am. Journ., Oct. 1852, p. 328). He furnishes references, also to other cases.

(*i*) Encyclographie Médicale, Fev. 1849.

(*a*) Gericht. Med. ii. 228. (*b*) Brit. and For. Med. Chir. Rev., Jan. 1860, p. 113.

(*j*) Gericht. Med. p. 355. (*k*) Siebold's Jour. für Geburtshülfe, 8 Bd. s. 330.

CHAPTER V.

ABORTION AND FŒTICIDE.

§ 335. 1st. *Natural Causes.*—The *natural causes* of the premature expulsion of the fœtus from the womb are extremely numerous. They are found in certain morbid conditions of the system, either original or dependent upon pregnancy—in diseases of the ovum and its appendages, and in a class of causes usually called accidental, but which might, perhaps, in reference to the present subject, be termed *direct* or *immediate*. We refer our readers, for an enumeration of the predisposing causes of abortion, to those works on midwifery which treat directly and at length upon the subject. It is not our purpose to dwell upon them here. The consideration of them has, we conceive, but a slight bearing upon criminal cases, since the object in these is to ascertain the employment and mode of action of some medicinal substance, or culpable manœuvres, in reference to their tendency to produce the premature expulsion of the fœtus. In estimating the legal criminality of attempts to produce abortion, we should not, without sufficient grounds, impute the occurrence of this event to the designs and attempts of the accused party; for however criminal the intention, if the means employed were wholly inadequate to fulfil it, there is no room for the intervention of the law. In this connection it should not be forgotten that abortion is an accident of common occurrence, to which many women are peculiarly subject, and which may depend upon disease of the placenta or fœtus, the death of the latter, syphilis, small-pox, or other constitutional disease of the mother, or which may be occasioned by various causes accidentally producing weakness, or, finally, which, relatively to the strength of the female, are violent and sufficient to bring on uterine contractions, although innocuous under ordinary circumstances. At the same time a natural tendency to abortion would not, we presume, mitigate the criminality of the act of procuring it. In truth, abortion can rarely be designedly effected, unless by mechanical means, where there is not a predisposition to it; hence the violence and fatality of the measures which are sometimes used to accomplish it. The cases are, indeed, too familiar to be deserving of special record, in which, after the most violent bodily injuries, women have not aborted, but carried their children the full time and been safely delivered. Mr. Whitehead, for example, mentions the case of a poor woman, in the fourth month of pregnancy, who received a severe fracture of the skull, from a blow with a hatchet, for which she was under treatment nine weeks. She was delivered of a healthy child at the full term of utero-gestation.

§ 336. 2d. *Drugs.* (1.) *Ergot.*—Most authors assert that there are no specific medicinal substances by which abortion can be produced. The only drug which has any claim to be considered as specific in its action upon the uterus is the *ergot of rye*. Some writers allege that it is only capable of

increasing the energy of the uterine contractions when these have already begun, and deny to it the power of originating them. We need, however, in this place, only show that it has this power. Thus, Mr. Whitehead (who by no means favors the view of its specific character) states, that in a case under his care, where, owing to deformity of the pelvis, it was necessary to get rid of the fœtus in the fifth month of pregnancy, the ergot alone was employed, and at first with desired effect. It was given in three successive pregnancies, and in each instance labor-pains came on after eight or ten doses had been administered, and expulsion was effected by the end of the third day. Tried in a fourth pregnancy in the same person, it failed completely.(*l*) Hoffman has collected the experience of others with this substance. Out of forty-seven cases of premature labor in which the ergot was employed, it produced it, without the necessity of, or the employment of other means, in thirty-two, while in the remaining fifteen cases, it was given in addition to other means.(*m*) Dr. Ramsbotham says: "*Egomet ipse tamen permulta vidi exempla, in quibus partus prematurus inductus fuit septimo vel octavo graviditatis mense peracto, solo secalis cornuti usu, ovuli membranis integris servatis, ore uteri occluso neque digito, neque ullo alio modo ad patefactionem excitato.*"(*n*) The same author has recently published a valuable paper on the induction of premature labor by the ergot, in which, we think, the reader will find conclusive evidence of the specific power of this drug. Premature labor was artificially induced by it in three successive pregnancies in one patient. A table of *fifty-five* cases is given in which it was successfully used.(*o*) Dr. Churchill says: "Ergot of rye is now pretty generally supposed to have the power of originating uterine contractions."(*p*) Much of the difference of opinion with respect to the uterine tendency of ergot depends no doubt upon the inertness of certain samples of the drug gathered at the wrong period, since it appears, upon good authority, that it should be collected during its stage of formation, being powerless afterwards. It is now well ascertained that, independently of its exciting uterine contractions, ergot directly affects the life of the fœtus by a depressing action upon the heart, and thus may indirectly become a cause of abortion. Instances of the sort are numerous during epidemics of *ergotism*, or the poisonous effects of ergot produced by eating bread made of flour containing this product.

§ 337. (2.) *Savin and oil of tansy* are more frequently used than ergot. They have both unfortunately a popular reputation as emmenagogues and as agents for producing abortion. Whatever good effect their stimulant properties may have in cases of amenorrhœa dependent upon feeble development, it is very certain that they have no direct power of instituting uterine contractions. Their action as abortives is solely due to their poisonous properties, since when given in proper medicinal doses they are merely aromatic and stimulant, and may prove emmenagogue, without necessarily exciting uterine contractions. In fact, tansy is in common use as an agreeable bitter

(*l*) On the Causes and Treatment of Abortion and Sterility. Am. ed. 1848.
(*m*) Neue Zeitschrift für Geburtskunde, Bd. 23.
(*n*) Parturition. London, 1841. Appendix, p. 639. (*o*) Med. Times, Jan. 1854.
(*p*) Syst. of Midwifery, p. 279. See also Shapter, Prov. Med. Journ. April, 1844.

for promoting the appetite. We think, however, that the administration of either of these drugs to pregnant women, should always be looked upon with suspicion, for we cannot imagine any condition which, at this time, would require or justify their employment. In a case, in which probably from one to two ounces of the oil of savin had been swallowed, a most violent inflammation of the stomach was excited, followed by softening and perforation of this organ, peritonitis, and death. The uterus was empty; it was of the size usual at the third or fourth month of gestation, and, judging from the state of the parts and the lochial discharge, the fœtus had been expelled, it was supposed, from two to three days. Morphia and chloroform had both been taken by the unhappy woman, but the violent inflammatory results found at the post-mortem examination were, no doubt, properly ascribed to the action of the savin.(*q*)

Dr. Lee states that he has known an instance where sixty drops of the oil of savin were taken every morning for a week, for the purpose of procuring abortion in the sixth month of pregnancy. It brought on violent pain in the abdomen and region of the uterus, and the woman died on the third day after the delivery of a still-born fœtus; on dissection, the uterine organs as well as the pelvic viscera generally were found to be in a state of high inflammation. Another case is mentioned in which an infusion of savin was taken for a similar purpose. It brought on violent and incessant vomiting, extreme pain and uterine hemorrhage, and death in a few days.(*r*)

Dr. Taylor met with a case in which death was caused by powdered savin—abortion having first taken place. Eight ounces of green liquid were found in the stomach, which, with the œsophagus and the small intestines, was highly inflamed. The poison was identified by observing the minute portions of the leaves under the microscope.(*s*)

A case of poisoning with oil of tansy is reported by Dr. Dalton, of Boston, in which death, after the most violent convulsions, took place at the end of three hours and a half; the quantity swallowed was more than an ounce. The uterus contained a well-formed fœtus about four months old, and there was not the least appearance anywhere of the fœtus or membranes having suffered any disturbance.(*t*) In another fatal case of poisoning with this oil, reported by Dr. Hildreth, the quantity taken was half an ounce, and death followed in less than two hours. Pregnancy of a few weeks' standing existed, and the drug was, as in the former case, undoubtedly taken for the purpose of producing abortion, but nothing of the kind took place.(*u*)

§ 338. The leaves and unripe fruit of the common *rue*, most probably, act like the foregoing drugs, solely by their irritant properties, which have been used with the hope of procuring abortion. The only cases which we have met with, where this was successfully induced, are those reported by Dr. Hélie. The constitutional symptoms were, in them, very alarming, resembling such as are produced by poisons of a narcotico-acrid character.(*v*)

(*q*) Am. Journ. Med. Sci., April, 1851, p. 529. Communicated to Dr. T. R. Beck by James H. Salisbury, M. D., of Albany, N. Y.
(*r*) Copland's Med. Dict., Am. ed., art. "Abortion."
(*s*) Med. Gaz. xxxvi. 646.
(*t*) Am. Journ. Med. Sci., Jan. 1852, p. 140.
(*u*) Ibid. May, 1835.
(*v*) Ann. d'Hyg. pub. vol. xx. p. 120.

§ 339. Powerful purgative medicines, such as aloes, jalap, croton oil, and elaterium, given repeatedly, or in doses capable of setting up violent action of the lower bowels, may produce abortion by a secondary action upon the uterus. The same may be said of cantharides and turpentine. All of these drugs are capable of producing a great degree of active congestion and inflammation in the pelvic viscera, and hence the uterus is not always exempt from their action. At the same time, they can hardly produce this result without seriously endangering the mother's life. It is certain that in the greater number of cases, where abortives are criminally employed, the life of the mother is more readily sacrificed than that of her offspring.

§ 340. 3d. *Venesection* has seldom a tendency to produce abortion. On the contrary, there is no remedy more in vogue for warding off a threatened abortion than this, and numerous authors testify that pregnant women have been bled many times in succession without this result ensuing.

Nevertheless, when pushed to the extent of causing syncope it may have that effect. M. Dépaul(*w*) relates an instance in his own practice, where a woman, apparently suffering with severe headache, in two successive pregnancies, applied to him for the purpose of being bled. He afterwards discovered that the bleedings in these and on one previous occasion had destroyed the fœtus, and that he thus had ignorantly seconded the intentions of the mother. Suction of the nipples by the mouth or by cupping glasses has occasionally been resorted to for the production of premature labor.(*a*)

§ 341. 4th. *Mechanical means.*—In some instances the woman seeks to rid herself of her burden, by making use of violent exertion, by direct injury to the abdomen, or by the introduction of instruments into the womb. These attempts are often unsuccessful when made by the female herself, and even by an ignorant accomplice. A tailor's apprentice attempted to produce abortion in his mistress, by thrusting into her vagina the large scissors used in his trade, and cutting with them. He wounded the vagina, but failed in his purpose.(*b*) Although the use of instruments generally indicates the intervention of another person, yet cases are known in which the woman has herself succeeded in introducing them. Thus, in a case in this country, a female brought on abortion by "probing herself with a piece of whalebone," and she declared that she had miscarried five times previously by the use of drugs.(*x*) More frequently, however, the abortion is accomplished through the culpable assistance of persons who make a trade of this nefarious practice. While, for the most part, the persons who are ready to degrade their humanity to this occupation are exceedingly ignorant and wholly unskilled in medical knowledge, it cannot be denied that occasionally medical men lend their skill to the accomplishment of the woman's purpose. Such conduct cannot be too strongly condemned, and is the more deserving of receiving the punishment awarded for the criminal offence in question than are the blundering and reckless attempts of those less skilled, and who may, in many instances, be scarcely aware of the

(*w*) Traité d'Auscultation Obstetricale, p. 270.
(*a*) Scanzoni, Med. Times and Gaz., Oct. 1853.
(*b*) Casper's Gericht. Med. ii. 251.
(*x*) New York Journ. of Med. vol. vii. p. 199.

probable results of the operation to the mother.(*y*) In the one case, the practice may be carried on for a considerable time with impunity, and hence a

(*y*) "We blush, while we record the fact, that in this country, in our cities and towns, in this city, where literature, science, morality, and Christianity are supposed to have so much influence; where all the domestic and social virtues are reported as being in full and delightful exercise; even here individuals, male and female, exist, who are continually imbruing their hands and consciences in the blood of unborn infants; yea, even *medical* men are to be found, who, for some trifling pecuniary recompense, will poison the fountains of life, or forcibly induce labor, to the certain destruction of the fœtus, and not unfrequently of its parent.

"So low, gentlemen, is the moral sense of the community on this subject, so ignorant are the greater number of individuals, that even mothers, in many instances, shrink not from the commission of this crime, but will voluntarily destroy their own progeny, in violation of every natural sentiment, and in opposition to the laws of God and man. Perhaps there are few individuals, in extensive practice as obstetricians, who have not had frequent applications made to them by the fathers or mothers of unborn children (respectable and polite in their general appearance and manners), to destroy the fruit of illicit pleasure, under the vain hope of preserving their reputation by this unnatural and guilty sacrifice.

"Married women, also, from the fear of labor, from indisposition to have the care, the expense, or the trouble of children, or some other motive equally trifling and degrading, have solicited that the embryo should be destroyed by their medical attendant. And when such individuals are informed of the nature of the transaction, there is an expression of real or pretended surprise that any one should deem the act improper, much more guilty; yea, in spite even of the solemn warning of the physician, they will resort to the debased and murderous charlatan, who, for a piece of silver, will annihilate the life of the fœtus, and endanger even that of its ignorant or guilty mother.

"This low estimate of the importance of fœtal life is by no means restricted to the ignorant, or to the lower classes of society. Educated, refined, and fashionable women —yea, in many instances, women whose moral character is in other respects without reproach, mothers who are devoted, with an ardent and self-denying affection, to the children who already constitute their family—are perfectly indifferent respecting the fœtus in utero. They seem not to realize that the being within them is indeed *animate*—that it is, in verity, a *human being*, body and spirit; that it is of importance; that its value is inestimable, having reference to this world and the next. Hence they in every way neglect *its* interests. They eat and drink; they walk and ride; they will practise no self-restraint, but will indulge every caprice, every passion, utterly regardless of the unseen and unloved embryo. They act with as much indifference as if the living, intelligent, immortal existence lodged within their organs were of no more value than the bread eaten, or the common excretions of the system. Even in cases where mothers have suffered from repeated abortions, where fœtus after fœtus has perished through their neglect or carelessness, and where even their own health is involved in the issue, even in such cases every obstetrician can bear testimony to the great difficulty of inducing our wayward patients to forego certain gratifications, to practise certain self-denials, and to adopt efficient means for the salvation of the child.

"This is not all. We can bear testimony that in some instances the woman who has been well educated, who occupies high stations in society, whose influence over others is great, and whose character has not been impugned, will deliberately resort to any and every measure which may effectually destroy her unborn offspring. Ashamed, or afraid, to apply to the charlatan, who sustains his existence by the price of blood, dreading, it may be, publicity, she recklessly and boldly adopts measures, however severe and dangerous, for the accomplishment of her unnatural, her guilty purpose. She will make extra muscular efforts by long, fatiguing walks, by dancing, running, jumping, kept up as long as possible; she will swallow the most nauseous, irritating, and poisonous drugs; and, in some instances, will actually arm herself with the surgeon's instrument, and operate upon her own body, that she may be delivered of an embryo, for which she has no desire, and whose birth and appearance she dreads.

"These facts are horrible, but they are too frequent and too true. Often, very often, must all the eloquence and all the authority of the practitioner be employed; often he must, as it were, grasp the conscience of his weak and erring patient, and let her know, in language not to be misunderstood, that she is responsible to her Creator for the life of the being within her."—*On Criminal Abortion;* a Lecture introductory to the Course on Obstetrics, &c., in the University of Pennsylvania, by Hugh L. Hodge, M. D. Philadelphia, 1854.

In an article upon this subject (Annales d'Hygiène, 1856, v. 121), M. Tardieu, after referring to the crime as one allowed to go unpunished, and as a source of wealth to

larger number of children be secretly sacrificed; in the other, the career is usually short or interrupted, for its murderous consequences become too soon apparent.

It is not necessary to describe the manner in which the operation is performed. The deplorable results of the clumsy manœuvres usually practised are sometimes, though rarely, brought to light. An inquest was held at Nottingham in a case of abortion which had been produced by the introduction of a wooden skewer into the uterus. The child's head had been perforated by this instrument; it was four and a half months old. A verdict was rendered, in accordance with the surgical evidence, that the woman had died of peritonitis, caused—by the rupture of an abscess in the ovary!(*z*) A female, a single woman, went to the house of the prisoner, and, having informed her of her pregnancy, underwent an operation, as described by witness, of having a pin thrust up into the womb. This was repeated for several days, and it ended in the delivery of a male child of about six months' development. The child was born alive, but died about five hours afterwards.(*a*) Dr. Channing relates the case of a woman who, believing herself to be pregnant, attempted to produce abortion by introducing into the womb a piece of soft wire bent upon itself for an inch or more at the further end. She succeeded in thrusting the wire into the uterus, but was unable to withdraw it, and, after suffering severe pain, she called in medical aid, but the wire could not be removed. Her attending physician then cut it off as high up as possible, and six years afterwards the wire was still there. In this case the female was not pregnant.(*aa*)

§ 342. The operation required is one of an exceedingly delicate and difficult nature, and even those who are conversant with the anatomical arrangement of the parts interested require to be careful in their manipulations. The operation of inducing premature labor in this way has been sometimes attended with accidents. Thus, Dr. J. B. S. Jackson reports an instance in which the internal iliac artery was opened by an instrument introduced for the purpose of expediting labor.(*b*) A similar case is recorded, in which the left common iliac was punctured. In this case, which was brought to trial, the jury returned a verdict that the woman had died of a spontaneous rupture of the artery.(*c*) In France an attempt was made recently to produce abortion by the injection of a corrosive and irritating substance into the vagina.

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more than one midwife in New York, says (p. 125): "In common with the magistrates and the mortality inspectors of Paris and its environs, I am convinced that criminal abortion constitutes a trade as free as it is immoral. So well is this fact known, that houses are openly shown where women may be sure of meeting with the wicked accomplices they require, and which are notorious even beyond the frontiers." Statistical reports, analyzed by Dr. H. R. Storer (N. Amer. Med. and Surg. Journ., 1859), render it probable that the prevalence of this crime in the United States and in Europe is greater than those who have not examined the subject could conceive to be possible. Dr. Walter Channing, of Massachusetts, refers to the difficulty of obtaining a conviction for abortion, and adds: "I believe there has never been one in this State, this moral State by eminence, and perhaps in none is this crime more rife." (Boston Med. and Surg. Journ., April, 1859, p. 135.)

(*z*) Lond. Med. Gazette, xlv.

(*a*) Am. Journal, April, 1851, p. 526, from The Queen *v.* West, Carrington and Kirwan's Nisi Prius Reports, vol. ii. p. 784.

(*aa*) Boston Med. and Surg. Journal, April, 1859, p. 137.

(*b*) Dublin Med. Press, Aug. 1848. (*c*) Ibid.

§ 343. It is evident that in all these cases of local violence, should death result, a careful anatomical inspection would reveal the crime. In case, however, the woman survive the operation, a medical examination would probably be superfluous.

We do not recollect to have met with any case of criminal abortion more horrible than that reported in one of the English medical journals.(*d*)

A man named Asher, known as an "herb doctor," undertook, for the sum of two sovereigns, to procure abortion upon the person of a woman named Elizabeth Fletcher, who, in the absence of her husband, had become pregnant. The operation was performed upon the woman at his own house, and from that moment she began to suffer pain, which increased, and she became seriously ill. Asher being called upon to see her, "introduced *his hand and arm into the vagina*, and kept them there from five to ten minutes, during the whole of which time the woman was in frightful agony." From this time the pain increased greatly in severity, and vomiting commenced. Her death ensued in less than a week from the operation. An examination of the body was instituted. There were marks of contusions extending from about two inches below the umbilicus, on either side, to the symphysis pubis. The muscles of the abdomen, at this part, were infiltrated with pus, and coagulated blood was found between them. Recent adhesions united the omentum to the surface of the intestines, and blood was extravasated in the vicinity of the uterus and bladder. The bladder was almost black, and in a state of gangrene. In its posterior wall was a large lacerated opening, and an aperture of considerable size in the corresponding part of the anterior wall of the neck of the uterus; two-thirds of the neck of the uterus were detached from the body of the organ. Through these openings the fœtus had escaped *from the uterus into the bladder*, in which latter viscus it was found, together with some coagulated blood. This criminal, who is described as a "gray-headed old man, upwards of sixty years old," and who appears to have had much experience in performing these iniquitous operations, was sentenced to transportation for fourteen years only.

§ 344. (1.) *Premature labor* is frequently induced in *legitimate medical practice*, for the purpose of avoiding the risks which in some cases attend parturition at term. The pelvis is sometimes so much deformed, that a mature child cannot possibly be born alive. The choice, in such cases, lies between the Cæsarean operation and an artificial premature birth. The proportion of children born at seven months that live, is, of course, smaller than if they were carried to the end of gestation, and could be delivered; but as, in the cases of deformity alluded to, the child's life must inevitably be sacrificed by birth through the natural passages, it becomes a vital question how its life may be preserved with the least risk to the mother. The statistics of the results of the Cæsarean operation give no cheering view of its value; the danger to the mother's life is infinitely greater than in the induction of artificial labor, which, in fact, in competent hands is a trifling operation. The average number of children saved by this means is rather more than one-half of the cases ope-

(*d*) Med. Times and Gazette, March, 1855.

rated upon. The practice which, when first proposed, awakened some doubts as to its morality, has now received the sanction of the highest medical authorities, and is universally regarded as justifiable and beneficent. Although deformity of the pelvis is usually the motive for the operation, it may be properly employed in other cases, as, for example, in women whose children habitually die before the term of gestation is reached, or who are suffering from diseases the danger of which is much heightened by the continuance of pregnancy. Yet the propriety of its employment in the latter case must be admitted with some reserve; the sympathetic phenomena of pregnancy are often far more alarming in appearance than in reality, and will rarely justify any interference with the natural progress of gestation. In all cases, the physician should consult with one or more of his colleagues before inducing premature labor; in this manner, his humane intentions will not expose him, in case of failure, to reproach, suspicion, or prosecution.

§ 345. (2.) *Blows upon the abdomen* are often designedly given with the view of causing a woman to miscarry. It is impossible to define the degree or mode of violence required to effect this purpose. Where uterine hemorrhage occurs shortly after ill-usage of this nature, it is reasonable to attribute it, and the abortion which follows, to the violence used. Great circumspection is, however, necessary in giving a positive opinion when the hemorrhage preceding the miscarriage is not the immediate consequence of the injuries received, since a woman may happen to abort from other causes, or she may be near her confinement. In such a case, it may be necessary to determine whether labor has been spontaneous, or been provoked by the ill treatment. Ordinary labor does not commence with free hemorrhage (except in the case of placenta prævia), while, on the contrary, that which is brought on by blows upon the abdomen does so because the placenta becomes, by this violence, partly or wholly detached from the uterus. If the violence has, however, been inflicted upon other parts than the abdomen and loins, this criterion cannot be safely relied upon, and the dependence of the premature labor upon the injury must be established by other means.

§ 346. 5th. *Signs of abortion.*—The *signs of abortion* having taken place, are obtained, (1.) From an *examination of the object expelled.* This is necessary, in order to determine *its human character* and *its probable age.* Other bodies are expelled from the womb which bear a greater or less resemblance to the human embryo, but are not always the products of conception. Most frequently, however, they are the products of conception, but in a diseased condition.

§ 347. The substances called *moles*, which are not unfrequently met with, fall under this denomination. The fleshy mole (also called "false germ") is composed of layers of fibrous matter inclosing a central cavity, in which sometimes fragments of the embryo can be recognized, but in others it appears to have been dissolved in the amniotic liquor. This body is supposed to be a hypertrophy of the placental surface of the chorion. The hydatid mole, or *môle vesiculaire*, is certainly a morbid alteration of the placental surface of the chorion. Velpeau and Mad. Boivin(*e*) have given so clear and accurate a

(*e*) Nouvelles Recherches sur l'Origine, la Nature, &c., de la môle vesiculaire.

description of the real character of this pathological product, that there remains but little of the mystery which formerly enveloped it. It consists of a dilatation of the cellular spongioles of the chorion. These increase, until they form a mass inclosing the ovum more or less completely. The remains of the fœtus are sometimes found;(*f*) at others, again, the disease would seem to have originated at so early a period, that the embryo has become dissolved in the amniotic fluid. In this case, a trace of umbilical cord is sometimes found. These hydatids may remain in the uterus a much longer time than the usual duration of pregnancy; and hence, as they are the result of conception, an opinion as to their probable age should be given with great caution, lest unjust aspersions should be thrown upon the character of the woman. The principal obstetrical authorities relate instances of the expulsion of hydatids from the uterus at ten, eleven, and fourteen months after conception, and some agree in admitting that they may be retained many years. Dr. Montgomery says, that he has not met with any instance of such long retention.(*g*)

§ 348. In cases of difficult menstruation, there are sometimes expelled substances which by some persons might be mistaken for an early ovum. These are, in some cases, false membranes, occasionally discharged entire,(*h*) preserving the shape of the uterine cavity; in others, again, they are membranous concretions, originating from coagula of blood. The first variety is distinguished from the ovum by the absence of the flocculi of the chorion, to which the outer surface of the menstrual membrane, however rough it may be, bears no resemblance.(*i*) In the other, the central cavity is wanting, and no trace of umbilical cord or placental surface can be found; besides this, it differs from the ovum in shape, being longer, thick in the middle, and pointed at either end. Of these productions, Dr. Denman says: "As the first cases in which this membrane was discharged were those of married women, a doubt arose in my mind whether it was not really a consequence of early conception, but I have lately had the most undoubted proofs that it is sometimes discharged by unmarried women, and may be found previous to and without connubial communication; and that the uterus has occasionally, or constantly, in some women, the property of forming it at or in the interval between the periods of the menstrual discharges. It seems particularly necessary to establish this fact, as the appearance of this membrane has more than once given rise to erroneous opinions and unjust aspersions."(*j*) In examining doubtful masses expelled from the womb, they should be carefully cleansed and macerated in water, to dissolve the coagula.

§ 349. In conclusion, it may be mentioned that there can be no danger of mistaking for ova, the *polypi* which are sometimes discharged from the uterus,

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(*f*) Dr. J. B. S. Jackson exhibited to the Society for Medical Improvement in Boston, a specimen, showing uterine hydatids connected with the membranes of a four months' fœtus. Am. Journ. Med. Sci., April, 1850, p. 359.

(*g*) Pregnancy, &c., 2d ed., p. 267.

(*h*) Dubois, of Neufchâtel, gives the case of a girl who, at every menstrual period, expelled a hollow membranous body corresponding exactly with the shape of the uterus. Gaz. Méd., 1847, p. 729.

(*i*) Churchill, Dis. of Females, p. 103.

(*j*) Introduct. to Midwifery, p. 161.

since these are easily recognized by the remains of the pedicle, as well as by their structure.

§ 350. The brief description given above of the various substances which may be discharged from the uterus, will suffice, we hope, to show that those which are called *moles* and hydatids are diseases of the appendages of the embryo, and that even if no trace of the latter remain, yet the existence of these peculiar degenerations places the fact of impregnation beyond question; while, on the other hand, the products of a disordered menstrual function are so different in character, as to be recognized as such without difficulty.

§ 351. The probable age of the ovum, or of the fœtus, is ascertained from a consideration of the degree of its development. It is impossible to declare with positive accuracy the dimensions, weight and degree of development of the fœtus at any given period of its intra-uterine life. The date of conception can never be known with certainty, and even if it could, and the age of the fœtus be ascertained, yet the weight and length, as well as the development, depend upon individual peculiarities. The same variety that is found in the bodily proportions of adults, must prevail in the fœtus. Hence, the statements which follow, must be looked upon as averages only.

§ 352. At the earliest period at which the human embryo can be recognized, it is of a somewhat crescentic shape, with the cephalic extremity large and rounded; it is a semi-transparent viscid mass, and from the lower portion of its concave side the umbilical cord takes its origin. The whole ovum presents a loose, shaggy appearance, arising from the tufts of the chorion. A few weeks later, this is confined to only a portion of the surface of the ovum, from which the placenta becomes afterwards developed.

In the course of the *fourth and fifth week*, the rudiments of the several parts of the fœtus become distinct. The mouth is the first feature which is observed, and is very large, and of a triangular shape; the eyes are like two black specks, and the liver occupies the whole of the abdomen. A moving point can be seen where the heart is afterwards developed, but the blood is not yet of a red color.

By the *sixth week* the forearm and leg are distinct, and the former is detached from the side, to which it was bound. The rudiments of fingers and toes can be discerned. At the *eighth week* the head forms more than one-third of the body, the features are more distinct, but the sex is not yet manifest. Red blood is found in the vessels of the cord.

At *three months* the fœtus has attained the length of two to two and a half inches (Devergie), and the size of the whole ovum is about that of a goose's egg. The fingers are separated, the toes are connected together by a soft substance, the soles of the feet are turned inwards, and the genital organs are quite distinct, having indeed a size and prominence disproportioned to their subsequent development.

At *four months* the length is from five to six inches (Devergie, Velpeau), and the weight, as given by the best authorities, is very various, ranging from two and a half to eight ounces. At this time the pupillary membrane is more distinct than before, the skin is rosy but very delicate, and covered with a fine down, while the hair of the head is short, and of a silvery white appearance.

At *five months*, the fœtus is from six to seven inches long, and weighs from five to seven ounces (Devergie). The head forms one-fourth of the body. The large intestines contain meconium in their upper portion. Quickening takes place usually at the beginning of the fifth month. In case of abortion at this period, the fœtus usually escapes first through the ruptured membranes, these, with the placenta, following it.

At *six months*, the head is no longer so disproportioned to the size of the body, and the umbilical cord arises a little above the pubis. The length is from nine to ten inches, and the weight one pound (Devergie). Fat is found in small quantity under the skin; the latter is of a purplish color, especially in the palms of the hands and soles of the feet, as well as in the lips and ears. The scrotum, however, is of a reddish color; the testicles are still in the abdomen. In females, the external labia project, but do not conceal the clitoris, which is large and prominent. The pupillary membrane is distinct and firm. The nails look like folds of skin. The hair is still scanty and short, and of a silvery white color.

At *seven months*, the fœtus is found to have increased in all its proportions. It measures in length from twelve to fourteen inches, and weighs from two to three pounds. The bones of the head are still yielding on pressure; the frontal bone consists still of two parts; the ears lie close to the head; the arms and legs are bent in the position which they had in the uterus, if the child be born alive. At the *eighth* month, the length is from sixteen to eighteen inches, and the weight three or four pounds. The skin, in color and thickness, is more like that of a child at term; it is covered with a fine short hair, and the hair of the head is of a darker color. Sometimes one of the testicles (generally the left) has descended into the scrotum; usually, however, they have not passed the abdominal ring. The pupillary membrane begins to disappear towards the close of this month. During the *ninth* month the fœtus gradually increases its length, until it attains from eighteen to twenty-two inches, and in weight on an average about seven pounds. The characteristic marks of maturity are considered to be the following:—

§ 353. The average length of a healthy, mature child is about eighteen inches, and its weight from six to seven pounds. Its skin is of a reddish white color; the hair is pretty thick and strong; the nails of the fingers perfect, and the ears cartilaginous. The limbs are firm and rounded, and the testicles of the males usually are found in the scrotum. According to Moreau, the navel string is inserted a few lines below the centre of the body—a statement which is confirmed by the observations of Dr. Taylor,(*k*) Ollivier, and Elsässer, although opposed to the opinion formerly held, that its point of attachment at the end of gestation was exactly the centre of the body. It is, moreover, firm and elastic. The child breathes and cries immediately after birth, unless the third stage of labor has been protracted; is able to take the

(*k*) Med. Jur. p. 285, Am. Ed. Dict. des Sci. Med. Art. *Œuf*. Henke's Zeitschrift Bd. 42, p. 256. Dr. Elsässer also states, that in the well proportioned adult, the middle of the body is not at the navel, but at the rising point of the *mons veneris;* a fact which, he says, is generally received by artists and confirmed by a measurement of the best antiques.—S. Tabelle für bildende Künstler von Joseph Mattersberger (nach Antiken), 1805.

breast and swallow, and within a few hours passes its urine and meconium. The meconium, however, is often not passed for two or three days; and in some cases is voided unobserved during birth. The presence of the *vernix caseosa*, a sebaceous secretion upon the skin, is found, according to Elsässer, upon about one-half of newly-born children.

§ 354. The several signs of *immaturity* may be thus stated in general terms. The body is small, lean, and flaccid; the skin tender, wrinkled, red, and upon the palms and soles, purple; and the lips, ears, and genitals bleed very easily. The head is out of all proportion to the body, as is also the skull to the face; the bones of the skull are widely separated by membranous sutures, and very movable; the hair of the head is scanty, short, and silvery; the eyelids and lashes are downy. The face has an old and painful look; the pupillary membrane is present, and the ears are thin and membranous. The navel string is attached near the pubes; the scrotum is very red, and not much wrinkled; the testicles are still in the abdomen; the lips of the vulva stand apart from each other, and the disproportionate clitoris protrudes between them.(*l*) The immature child, moreover, breathes with difficulty; its voice is weak and whimpering; it sleeps continually, cannot suck, and shows no desire for food.

§ 355. (2.) The signs of abortion, as obtained by an *examination of the female*, are not very certain in their character. It is seldom, indeed, that an examination of the living female is had, and especially at a period early enough to afford any valuable indications. When abortion occurs in the early months, it leaves but slight and evanescent traces behind it. A relaxed condition of the parts, which at the same time are covered with blood proceeding from the womb, resembles so closely the condition present during the catamenial flow that, practically, they could hardly be distinguished. The open state of the mouth of the womb may, in some cases, throw light upon the question. All these signs are, however, more distinct in the latter half of pregnancy, and, as the term of gestation approaches, closely resemble the signs of "delivery." (See § 292.)

We also refer the reader for a consideration of the value of the *corpora lutea*, as indicative of pregnancy, to the chapter on the Signs of Delivery. We would merely repeat here, that although there is, in our opinion, sufficient evidence of a marked difference between the *corpora lutea* of pregnancy and those of menstruation, it requires more general assent and more complete substantiation to allow positive inferences from their discovery to be put forward in criminal, or other important cases, without reserve.

CHAPTER VI.

INFANTICIDE.

§ 356. 1st. *Characteristics of still-born and living children.*—In the following considerations upon this subject, we shall restrict our remarks to the

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(*l*) Bock, loc. cit. p. 241.

medical testimony required in the determination of questions arising out of the doubtful causes of death in *new-born* children. By this phrase we propose to designate those cases in which doubts concerning live birth may fairly be entertained. Those which do not require the solution of this question as preliminary to a judgment upon the fact or the manner of criminal interference, cannot, with strict propriety, be classified under the head of Infanticide. The degree of criminality of the offence is determined by the period at which it was committed, whether before or after birth; but manifestly this point is, at a certain period after birth, no longer subject to doubt. The mode of death at this time, whether criminal or otherwise, will be determined by the same general rules that are applicable in adult life. Hence the first purpose of medical investigation in cases of alleged infanticide, is to ascertain whether the child was born alive.

The evidences of the child having died before birth have been sought in the cessation of the intra-uterine movements and the sounds of the fœtal heart, and in certain changes in the mother, such as a tendency to fainting, nausea and vomiting, loss of appetite and foul breath, a dull, pale, and dejected look, a sense of pressure upon the bladder and rectum, or of the falling of the contents of the womb from side to side, or, finally, the discharge of meconium or blood or the protrusion of the umbilical cord. But however probable these phenomena may render the death of the child they do not demonstrate it.

More certain signs are furnished by the condition of a child born dead, provided its birth have taken place three days or more previous to its expulsion from the womb. These will be described in another place.(*ll*)

§ 357. In order that the reader may have a clear view of the evidence required to establish the fact that a child was born alive, it will be necessary to prefix to it a comparative sketch of the still-born child and that which is born living. The visceral and other changes which indicate that a child has survived its birth, derive all their importance, as evidence, from a contrast with the condition and peculiarities of the same organs in the fœtus; and the degree to which the change has been accomplished, corresponds in general with the energy and extent of the new functions. Hence, before we can safely determine that a new-born child has been criminally destroyed, we must be prepared to show, as a necessary preliminary, and beyond the shadow of a doubt, that the essential fœtal characteristics no longer exist.

A child which is born dead, having perished immediately before its birth, will be usually found, in medico-legal cases, owing to the hurry of concealment, to be still covered with the sebaceous secretion called *vernix caseosa*. Its hair is closely agglutinated; its ears lie closely to the head; the eyes are closed, and the eyelids when raised do not remain open. The mouth also is closed, and a drop of watery blood is often seen trickling from the nostril. The thorax, being unexpanded by respiration, appears flat and contracted, and the remnant of the umbilical cord has a fresher look than in a child which has lived for a few hours. The trachea is flattened, and often contains a viscid mucous secretion. *The lungs* lie in the posterior part of the thorax, and the rest of this cavity is often filled with a yellowish fluid of a slightly glutinous

(*ll*) See § 491.

consistence. They are of a brownish red color, more or less spotted in some cases, have a granular structure, and do not crepitate upon incision. Their length is greater than their breadth, and their edges are rounded. Their absolute weight is less than after respiration has occurred, since upon their expansion by this process, an active circulation of blood takes place through them; but their specific gravity is greater, their vesicular structure being undistended with air.

§ 358. A child which has been *born alive* presents the following characteristics; the period of survivance, the mode of death, and the time after it, at which the examination is made, have of course a considerable influence upon these. As a general rule, however, if the body be fresh, the remains of the *vernix caseosa* will be found under the armpits, behind the ears, &c., the hair will be dry and clean, the ears not so closely applied to the head as in the still-born child, and the eyes remain half open, in spite of all efforts to close them. The swelling upon the back of the head which is common in new-born children (*caput succedaneum*), in whom the head has been the presenting part, is far more marked in the child which is born alive than in the still-born; provided death has occurred before the expulsive pains of labor have begun. In the one case, it also contains a glutinous bloody serum, while in the other, the small quantity of liquid effused is colorless. The thorax is higher and more arched than in the fœtus, and the diaphragm is depressed in a corresponding degree by the expansion of the lungs. As a general rule, according to Casper, the highest level of the diaphragm will be found between the fourth and fifth ribs in still-born infants, and between the sixth and seventh in the living.

§ 359. The *umbilical cord* affords more valuable proof extra-uterine life, as well as of the period of its duration, than any other of the external marks. It is generally of a bluish pearly-white color, of the thickness of a finger, and within twelve to twenty-four hours after birth, loses its polish and becomes dry and flaccid. The process of desiccation begins at the severed end, and in the course of twenty-four hours reaches to within half an inch of the navel; this portion of it still remaining pulpy and of an amber color. About this time the skin of the abdomen, around the attachments of the cord, becomes red and swollen, and is pushed up around it in the shape of an inverted cone. During the second and third day the cord dries gradually away, becomes twisted and flattened like a ribbon, while the preparatory stage of separation is seen in the suppurative process which attacks the still moist portion by which it remains attached to the navel. On the fourth day, the cord is found to have acquired a yellowish brown or black color, and in those parts of it not traversed by the umbilical vessels has the transparency and appearance of glue. The separation takes place more frequently on this than on the third day, but the time of its falling off is subject to great variation. According to the observations of Dr. Elsässer,(*m*) out of one hundred and thirty cases, it occurred—

On the	4th	day	in 10	cases,	on the	7th	day in 16	cases, on the 10th day in 1 case.
"	5th	"	40	"	"	8th	" 5	"
"	6th	"	55	"	"	9th	" 3	"

Cicatrization of the navel is generally complete by the fourteenth day.

(*m*) Henke's Zeitschrift, 1852, 4 Heft. p. 262.

§ 360. The process of desiccation above described is not invariable. Occasionally where the navel string is thick and pulpy, instead of withering and drying away, it will putrefy, even in the healthiest children. Elsässer has often made this observation in his hospital at Stuttgart, and the fact is fully confirmed by the observations of Sömmering and Osiander.(*n*) Moreover, the process of desiccation is not confined to the cord of living children alone. In two still-born children, Elsässer found the cord still remaining on the fifteenth and twenty-eighth day respectively after birth. It had undergone complete desiccation into a horny substance, while the bodies of the children were at the same time considerably advanced in putrefaction. Pieces of umbilical cord cut off and exposed to the open air, at 40° to 60° Fahrenheit, underwent the same withering and desiccating process as in the living child, and without the least foul smell. These observations may appear to invalidate the statement of Billard, which has been generally accepted as correct, viz., that the desiccation of the cord is an act of vitality, and consequently cannot and does not occur in the still-born child. That they do not, however, materially affect its truth is evident, when we reflect that the process in the living child commences immediately after birth, and is completed generally within three or four days, whereas, in these observations, actual desiccation did not commence until much later, in one case on the ninth day, and in the other as late as the twentieth day. Furthermore, in neither case was there any indication of the cord becoming detached, a process which is alone of no trifling significance, both as evidence of life and of its duration. Hence, the withering and desiccation of the cord gives a fair presumption that the child has lived and the degree to which the process has advanced, a valuable indication of the length of time it has survived its birth.

Several other subordinate signs of live birth may be alluded to before we consider those derived from the condition of the lungs. One of these is *suggillation*, or a discoloration resembling a bruise, and which has been held to be a proof that respiration occurred. But it is now admitted to furnish no reliable evidence of life after birth. The same remark is applicable to the difference of color, which, it is said, theoretically, must be presented by *the blood* in the opposite cavities of the heart. The absolute or relative weight of the *liver* is also a fallible test. For although it is true that this organ diminishes in size in proportion as the lungs assume their function, yet it is impossible by its means to determine in any particular case in what degree, if at all, the lungs have expanded, because the degree of contraction of the liver, not being referable to any fixed standard, can neither be measured nor estimated. The discharge of meconium, or of urine, as tests of breathing are also unreliable.

§ 361. The *lungs* are the source from which the most reliable proof of live-birth is derived. In the child which has perfectly respired, the lungs occupy a larger space in the thorax than in the still-born fœtus. They fill up, in general, its cavity completely, and partly cover and conceal the pericardium. Their color is of a pale red, shading into blue on the posterior surface, and becoming brighter upon exposure to the air, or else irregular light-red spots

(*n*) Uber die Nabelbrüche. Lehrbuch für Hebammen.

appear upon a bluish-red ground. This gives them a marbled appearance, a peculiarity which cannot be given to fœtal lungs by inflation. Their edges are sharp, here and there curved inwards or projecting in tongue-like processes. They feel tough but not solid when handled, and retain slightly the impression of the finger. They crepitate also when pressed or cut, and upon incision yield a small quantity of frothy blood. They are heavier than the fœtal lungs, but specifically lighter than water, floating upon it both with the heart and thymus gland attached, and also when cut to pieces. When pressed between the fingers under water, air bubbles rise from them to the surface. The thorax is wider and more arched than in the fœtus, and the diaphragm is lower than before respiration, its convexity not reaching above the seventh or eighth rib. As the conditions thus described belong to lungs which have fully respired, a less perfect degree of them may be expected to be found when the respiration has been incomplete, and cases may even occur in which very small portions only of the pulmonary tissue have been penetrated by air, and consequently are capable of floating when subjected to the hydrostatic test.

The condition of the *larynx* before and after breathing is not the same. In the former case it is narrower, is occupied by mucus, and is closely in apposition with the epiglottis; but in the latter this covering no longer closes the opening to the larynx. None of these conditions, it will be observed, affect the question *when* the child breathed? They are equally consistent with breathing before and after birth.

§ 362. Certain changes take place in the *fœtal channels* for the circulation of the blood, upon the occurrence of respiration. As, however, these changes are gradual in their nature, they can hardly with propriety be enumerated among the signs of live-birth. They are only considered in this place from the fact that they *commence* at birth, although not perfected until a later period. From the cases reported by Elsässer,(*o*) it will be seen that the obliteration of the fœtal channels occurs in a very indeterminate manner. In forty-eight out of fifty-two mature stillborn children they were all open except in four, in which the *foramen ovale* was closed. In ninety-two who died in the first month, they remained open in two-thirds. Later researches on a still more extensive scale by the same indefatigable author prove, as the result of the examination of three hundred and seventy cases, the little reliance which can be placed on so variable a test. In illustration of this fact, we may remark that in one stillborn child the *ductus venosus* was found closed, and in a child which lived only a quarter of an hour, the *foramen ovale and ductus arteriosus were both closed.* On the other hand, in a child thirty-nine days old, he found *all* the fœtal channels remaining open. Dr. Norman Chevers(*p*) substantiates this statement by the facts which he has collected respecting the frequent contraction and obliteration of the foramen ovale and the ductus arteriosus before birth. It is evident that if but one authentic case exist in which any of the fœtal channels have been found closed at birth, it is enough to throw doubt upon any case in which its closure is assigned as a proof that the child must have survived its birth. Moreover, the continued

(*o*) Henke's Zeitsch., 1841 and 1852. (*p*) Med. Gaz. xxxv. and xxxvi.

patency of these channels is of still less importance in a medico-legal sense than their closure, since the foramen ovale and ductus arteriosus are found open in certain cases in adult life. We have ourselves elsewhere brought abundant proof of this fact.(q)

§ 363. Professor Bernt,(r) of Vienna, has endeavored to determine, by means of the progressive closure of the foramen ovale and ductus arteriosus, the period during which the new-born child has survived, and his views have heretofore met with considerable attention, and been adduced as authority. He says: "1. If the child has lived only a *few seconds*, the aortal end of the duct appears contracted, and the vessel, instead of being cylindrical throughout, acquires the form of a truncated cone. 2. If the child has lived for *several hours* or a *whole day*, the duct becomes again cylindrical, although shortened and contracted in diameter. Its size is about equal to that of a goose-quill; it is, therefore, much smaller than its root, and about as large as either of the two branches of the pulmonary artery, which have in the mean time become increased in size. 3. If the child has lived for *several days* or a *whole week*, the duct contracts to the diameter of a few lines, about equal to a crow-quill, while the two branches of the pulmonary artery are equal in size to a goose-quill. 4. The duct is met with, perfectly closed, and quite impervious at a much later period, *i. e.*, after the lapse of a very uncertain number of weeks, or even months." That these phenomena are far from being constant, is attested by the experience of other writers(s) as well as by my own. I have never succeeded in finding the peculiar condition of the arterial duct, under the circumstances described by Professor Bernt. As has been before stated, the great irregularity in the process of obliteration, renders any dependence upon signs, which are at least neither constant nor well marked, highly fallacious. In fact, the alteration in the form and calibre of the fœtal channels is not noticeable immediately after birth; the closure of the foramen ovale, and the obliteration of the several canals, is gradual; they are not closed in any determinate order, although, as a general rule, the foramen ovale is the last to be obliterated. These signs are, therefore, too inexact to be depended upon as proof of respiration having taken place, and have at most, only a secondary importance in the question as to the period of survivance.

§ 364. We have now to consider the characteristic marks by which a child which has respired *imperfectly* may be known from one that has not breathed at all, and also the pathological and extraneous causes of imperfect respiration.

The external aspect of a child which has breathed imperfectly, is not strikingly different from that of one which has fully respired. During its life, such a child will exhibit signs of feebleness, its cry will be weak and whimpering, its color pale, and its movements languid. If the imperfect expansion of the lungs be due to compression of the head or neck, owing to

(q) On Cyanosis. Am. Journ. Med. Sci., July, 1844.
(r) Das verfahren bei der ger-med. Ausmittelung zweifelhafter Todesarten der Neugebornen, von Joseph Bernt. Wien. 1826. Vid. Taylor, Med. Jur. p. 319.
(s) Vid. Elsässer. Also Taylor, loc. cit.

a tedious labor, or from some obstacle to delivery, the surface will be found of a livid hue, especially the face, and the child will gasp for air. In the lungs, however, will be found the principal indication of incomplete respiration. They will not reach as far forward as the pericardium; the brownish red color of the fœtal lungs will be replaced, in part only, by the lighter and clearer red due to the presence of respired air, and these aerated portions will be found chiefly in the upper lobe of the right lung, owing to the size of the bronchial tube which opens into it being larger than that on the left side. These portions will float in water, while other parts of the pulmonary substance will sink, and the degree of buoyancy of the whole lung will depend upon the amount of air contained in it. As a general rule, it may be stated that a very small quantity of respired air is sufficient to cause the whole lung to float.

§ 365. The principal pathological cause of imperfect respiration is the condition called by Jörg, who first correctly described it, *atelectasis*. This word means *defective expansion*, and is appropriate, since a portion of the lung remains in the fœtal condition. We borrow the following accurate sketch from the valuable work of Dr. J. F. Meigs, on the Diseases of Children, p. 115: "In congenital atelectasis, the parts of the lung most frequently affected are the posterior portion and lower edge of the inferior lobes, the middle lobe of the right lung, and the languette and lower edge of the upper lobes. In some instances, as in one examined by myself, the greater portion of the lower lobes of both lungs, while in others still larger portions of these organs, have been found to present this condition. The imperfectly expanded portions of the lung are of a dark red, or purplish color, and are diminished in size, so as to be depressed below the level of the healthy parts. They are solid to the touch, and yet they have not lost their cohesive properties, as they are neither friable, easily torn, nor readily penetrable by the finger, and no air bubbles are seen in the fluid squeezed out by pressure: they sink when thrown into water. They, in fact, resemble exactly the fœtal lung. The most convincing proof of the real nature of this condition, is obtained by the inflation of the lung. When this is done, the depressed, hard, and dark-colored portions, unless the subject from whom the specimen has been taken may have lived long enough to have allowed the different tissues of the lung to become adherent, rise to their natural level, become elastic, soft and crepitating, and change, under the influence of the entering air, from a dark and livid tint, to the rosy or pink color of healthy pulmonary tissue."

§ 366. The distinction between this condition and that of hepatization of the lung from inflammation must at once be evident to the physician. The only similarity is found in the increased density of the inflamed lung, in consequence of which it sinks in water. But we need hardly remind the reader that the occurrence of pre-natal or congenital pneumonia is very questionable, and that its immediate development after birth must be excessively rare. Should it, however, exist, it will not be difficult to distinguish it from atelectasis, except perhaps in those cases where a portion of the lung still remaining in the fœtal condition is attacked with inflammation. Such a case, however, would have no importance in a medico-legal point of view, since the phenomena observed

on trial of the hydrostatic test would not be affected by it. Pneumonia attacks indifferently all portions of the pulmonary structure, but preferably, perhaps, the inferior and lower parts. In atelectasis, the parts affected are usually the margins of the lobes, or those portions most remote from, or not so readily accessible by, the air. The color of the hepatized portions of the lung is of a yellowish or mahogany red, the surface is homogeneous, the contours of the vesicles are not visible, the hepatized structure is granular and friable, and, upon incision, there exudes from the surface a thin sanguinolent pus.(*t*) Finally, it cannot be inflated, the vesicular structure having become consolidated by a plastic effusion; whereas, in the case of atelectasis, the lung being merely in the fœtal condition, readily expands upon the insufflation of air.

§ 367. The most interesting *causes of imperfect respiration* are those which act by impeding the free access of air to the lungs. They may be divided into two classes, according as they act *before* or *after* birth.

The fact that respiration may take place *before* birth, comes to us attested by too respectable authority to be discarded as fabulous. However improbable it may seem that a child should breathe and cry while yet in its mother's womb, and however much the establishment of the possible occurrence of this phenomenon may perplex the question of infanticide, rendering evidence apparently the most convincing of no avail, we cannot hesitate to admit that this singular fact has been really observed. We find few writers at the present day denying it. It is reported that Velpeau has said that "he believed it, since it was asserted by learned and credible men, but that he would not believe it if he observed it himself." We subjoin the following cases in illustration. The first is related by Marc,(*u*) as communicated to him by Dr. Henry. "The 10th of October, 1824, I was desired by M. Jobert to assist him in an *accouchement* in which the pelvis was deformed in such a manner as to interfere with the delivery. Madame G—— was twenty-seven or twenty-eight years of age, and of a good constitution. Her two previous pregnancies were unfortunate; in both she miscarried. Upon our arrival, we found her in great suffering; the membranes had broken about forty-eight hours previously. I found the head of the child above the superior strait, the occiput turned to the right iliac fossa. The parietal bones alone had descended into the superior strait, and projected slightly into the pelvis; the *os uteri* was open to the extent of two inches. The deformity of the pelvis consisted in a very great prominence of the sacro-vertebral angle, and absence of curvature in the pubis, so that the antero-posterior diameter was diminished one inch, while the transverse was increased to the same extent. M. Jobert and I concluded to turn the child; but, however, as the head did not appear to be of a large size, we hoped to be able to disengage it by means of the forceps. This instrument was applied. At the moment that Dr. Jobert commenced to make traction, the fœtus cried distinctly for a dozen seconds, so as to be heard by all present. The head remaining impacted, in spite of all our efforts, the forceps were removed. While we were conversing upon the necessity of performing the operation of version of

(*t*) Legendre, Maladies de l'Enfance, Paris, 1846; Jacquemier, Accouchemens, vol. ii.
(*u*) Dict. des Sciences Médicales (en 30 vol.), art. Infanticide.

the child, cries were again heard as distinct as the first, which could only be the result of several inspirations. And again, when I introduced my hand to search for the feet, in slipping it over the left shoulder, the fœtus, for the third time, gave vent to several cries, not so loud as the first, but sufficiently so to be heard by all the persons present. The delivery was accomplished with a great deal of difficulty, and the child breathed no longer; still, as the pulsations of the heart were pretty strong, we tried various means to restore it to life, and I endeavored to inflate its lungs. Our efforts were, however, of no avail, and the circulation ceased after a few minutes. I regret my inability to describe the condition of the lungs; but of what importance could it have been, as I had already introduced air into them?"

Landsberg gives a case of *vagitus uterinus* which occurred in his own practice. The first stage of labor had been unusually protracted, lasting, indeed, for nearly a week. At last, however, the membranes broke, and the child presented in the first position of the head. "At this time I, as well as some women standing at the bed-side, heard plainly repeated cries of a child, as if one were covered by the bedclothes." This was not the case, however; the room was searched, to ascertain if, perchance, a cat could be found, and finally all convinced themselves that the sounds really came from the yet undelivered child. The labor was brought to a termination by the application of the forceps. "The child was apparently dead, but soon revived, and is now living."(*v*)

No mistake could be possible in the following case, reported by Dr. Kennedy, formerly Master of the Dublin Lying-in Hospital. He says: "I was called up one night by an intelligent pupil in the hospital, who informed me that a very strange sound was observed to come from a patient in labor, resembling exactly the whine of a child. On going into the labor-ward, I found the nurses and pupils surrounding a patient's couch, with outstreched necks, listening with great intensity and amazement; and on approaching within about six feet of the bed, I distinctly heard a low moaning whine, resembling the faint and painful cry of a delicate seven months' child; this became more distinct the nearer I approached the patient, and there could be no doubt whatever that it came from the abdomen of the woman on the couch, however produced. Still skeptical, I applied the stethoscope, when the fact was proved beyond a doubt, as not only the cry mentioned, but the labored respiration of the fœtus was perfectly audible. A vaginal examination was instituted, and the head was found presenting, but high in the pelvis. The parts were only partially dilated, although the membranes were ruptured, and the waters had drained off shortly before. This woman was not delivered for four hours, and the above phenomena were observed by several of the pupils up to the time of the child's birth. The patient's name was Morell; the date of her delivery, 2d of December, 1830."

Two other cases, of more recent occurrence, are related.(*w*) One of these

(*v*) Neue Revision der Lehre von der Athemprobe. Henke's Zeitsch. Erg. Heft. 38, 1849.

(*w*) Brit. and For. Med. Chir. Rev. Jan. 1850, from Med. Zeitung, Nos. 20 and 30. Another case has been still more recently reported by Dr. Knüppel. In consequence of

occurred to Dr. Falkenbach, who, during the operation for turning for a cross birth, and while the child was undoubtedly within the uterus, heard it cry loudly several times, as did other persons in the room.

The other case is of still more importance, and occurred also during an attempt at version. The tone of voice was like that of a new-born child, only dull, as if it came from a cellar. It continued crying at intervals for two or three minutes. After this, delivery progressed rapidly, until the shoulders arrived in the pelvis, which was rather narrow, while the child was a large one. The child was born dead, beyond recovery. Its cries, while in the womb, were heard by three other people in the room, as well as by the midwife, who was hard of hearing. The chest was examined twenty-four hours afterwards and was found to be well expanded. The lungs partly covered the pericardium. They were removed, in connection with the heart and thymus gland, and being placed in a vessel of cold water, *swam* completely. The lungs were of a bright red color, with bluish spots here and there. They crepitated on incision, and some foam and a little blood flowed out. When cut under water, large air-bubbles rose to the surface: not the smallest portion of the structure sank. This last case is, except that in note (*w*), we believe, the only one in which the lungs, in a case of uterine vagitus, have been submitted to the hydrostatic test; and hence, from it, we have undoubted proof of the possible occurrence of uterine respiration, and an increased probability of the observations in the previously related cases having been accurate.

We have assumed that uterine respiration must be *imperfect*, a position which seems to be contradicted by this case; but we find it stated by the author that "the air cells of the periphery had not become completely filled with air," a fact which we will not undertake to reconcile with the statement that no part of the lungs sank in water.

The extreme rarity of uterine and vaginal respiration and *vagitus* is evident from the few authentic cases upon record, as well as from the incredulity with which the fact has been received by some authors. Moreover, certain obstetricians of most extensive experience state that they have never witnessed this phenomenon, and Baudelocque and Capuron declare that even in cases where the face and mouth of the child presented at the vulva, giving a favorable opportunity for the access of air, they have never observed it. We are not able to define the causes which favor its occurrence in some cases and not in others, nor explain how the air could gain access to the lungs in cases like those above narrated, and in others which might be referred to. All that can be safely asserted is, that this phenomenon never occurs before the rupture of the membranes and the dilatation of the mouth of the womb, and that it has been observed, as yet, only in tedious labors, or when the hand of the accoucheur has been introduced to assist the delivery. Dr. Beck relates two cases in which it was distinctly perceived under this latter contingency. It is not, however, a necessary element for its production.

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a cross position, the child was turned, during which operation vagitus was distinctly heard. It was, however, born dead. The lungs were of a pale red color, filled the chest completely, crepitated on incision, and swam in water. Canstatt's Jahresbericht für 1853. VII. Bd. p. 19.

§ 368. Another, and in its practical bearings more important condition, under which imperfect respiration may take place before birth, is after the delivery of the head, while the body yet remains in the vagina and the womb. It is undeniable, that in this position the child often breathes and cries. The delivery of the body may be retarded by various circumstances, the principal of which are a too great size of the shoulders, a sudden cessation of the expulsive pains, and compression of the neck of the child by the umbilical cord. The fact, as above stated, is beyond all cavil, and Ritgen, a German obstetrician of high standing, from the frequency with which he has observed it, considers it not even exceptional. It will be readily seen how much doubt this fact may cast upon the question, whether the child has been born alive. It may breathe before it is fully born, and yet, as it is not accounted by the law to be born until *fully expelled* from the mother, fatal violence exercised upon it in this situation has been adjudged not to constitute the crime of infanticide. We shall allude more in detail to this fact under the "*Causes of death in new-born children.*" (§ 379 *et seq.*) In the same place will be found an account of those causes of imperfect respiration which act *after* birth. It sometimes happens that after the delivery of the head of the child, and after it has breathed and cried, its respiration is impeded, and may be arrested by the pressure of the umbilical cord encircling the neck. The cord may be wound several times around the neck, so tightly as to render its disengagement without severing it, impossible, and hence, after the delivery the child may be incapable of resuscitation, and, in some rare cases, even bear upon its neck the marks of strangulation, and in its lungs the evident signs of its having respired. If, under such circumstances, the birth is not witnessed by a competent person, suspicions of having inflicted a violent death upon her offspring, may unjustly attach to the mother. (Vid. *infra*, § 380.)

2d. *Tests of Live-birth.*

§ 369. The most important of the proofs of live-birth, which, from their general application, have been called "tests," are derived from an examination of the absolute and the specific weight of the lungs. Although the data yielded by them are said to prove *life*, they do so only incidentally, by proving respiration; and although, in criminal practice, it is requisite that the fact of respiration should be established, yet it is important to bear in mind that there may be *life without respiration*. The circulation may go on, and the child may make various muscular movements, after it is separated from the mother, without respiring. Sometimes, owing to congenital feebleness or to its being in an asphyxiated condition, it makes no effort to breathe; and again, all its efforts may be fruitless, from the obstruction of the fauces and larynx with viscid mucus. Hence, paradoxical as it may seem, a child may live and die without having breathed. In such a case, the lungs will, of course, reveal no trace of respired air.(*x*) The attempt too strictly to define the essential con-

(*x*) This fact was urged as an objection to the hydrostatic test by the Wittemberg Faculty (Valentin's Pand. Med. Leg. p. ii. sec. vii. chap. 12, p. 583, ed. 1701), at the very beginning of its application to medical jurisprudence. We have ventured to de-

ditions of life has led to some absurd conclusions. In Germany, a distinct vocal sound is required by law as the evidence of life. But this appears to be modified in practice by the substitution of breathing for vocal sound, and the doctrine is accepted that respiration and life are reciprocally evidences of one another. According to this doctrine, intra-uterine life is not life in the sense of life after breathing. Plants, and those animals which breathe by the skin or by gills, do not, according to it, really breathe. But if we admit that breathing essentially consists in the act or acts by which the effete circulating fluids of a living creature are renovated, we shall see that life is consistent, not only with very dissimilar modes, but also with very irregular degrees of that renovation. The fœtus in utero, while still inclosed in its membranes, has its blood renovated by juxtaposition with that contained in the maternal blood-vessels, and thus, indirectly but substantially, it breathes through the lungs of its mother. Although the mechanism of its respiration is different from that which will exist after birth, its essence and effect are the same. Again, even in the adult, examples are constantly met with of life without perceptible breathing, as in syncope and trance, states in which it is true that life is probably sustained by the exchange of the foul air in the lungs with the pure external air, under those laws which regulate the diffusion of gases. Yet in the popular sense there is no respiration, although there is life, and a life which, indeed, is generally manifested by the sound, however feeble, of the heart's pulsation. The new-born child, therefore, although it presents the aspect of death, is not necessarily dead; its near approach to lifelessness may even become the means of saving its life under circumstances which would infallibly have produced suffocation and death, had respiration been complete.

The following may serve as illustrations of the statement just made. Weese reports the case of a female who was rapidly delivered of a child in a tub, and believing it to be dead, buried it in a sand-pit, where it remained for half an hour, but was then disinterred, and restored to life. In another case, at Berlin, the child supposed to have been born dead, was buried for the space of an hour, but was resuscitated. In a third instance, a child apparently born dead, and so considered after an hour vainly spent in efforts to resuscitate it, was then abandoned for several hours, after which it was inclosed in a coffin and placed in a cold chamber (it was the month of January), near an open window. Twenty-three hours after its birth the body was quite cold, but free from discoloration or stiffness. Owing to the latter circumstances the heart was examined, and being heard to pulsate, renewed attempts at resuscitation were made. But finally all signs of life ceased. On dissection the lungs sank in water both in mass and in fragments. Another instance is still more remarkable, from its result. A woman buried her illegitimate child, which she supposed to be stillborn, nine inches under ground, and with the face downwards. It remained thus between four and five hours, when it was exhumed, resuscitated, and lived three days.(*y*) A case nearly identical with this is

part from the custom of medical writers on this subject in treating of it under this head, because the object of the hydrostatic test is to ascertain whether the child has breathed, and not to determine the fact of its having lived without respiration.

(*y*) Maschka, Prager Vierteljahrs., 1854, iii. s.

referred to by Briand, who, however, states that the life of the child was preserved.(*z*) It is, then, quite possible that life may have existed in spite of every reasonable presumption of its absence, founded upon an inspection of the child both before and after its certain death.

If the argument should ever be used in any case of infanticide, that the violence was inflicted upon a child which had lived without breathing, it would have to be sustained by other testimony or evidence than that of a medical expert; since there is no medical proof of extra-uterine life, independent of respiration. Hence, the commission of infanticide, by submerging a child in water before it has breathed, or the exclusion of air from it, in any other way in which no external mark is left, deprives the medical examiner of the means of deciding whether the act was committed upon a living child; because, we repeat, the lungs remain in the same condition after as before birth, provided respiration has not taken place, and in the short interval of existence possible under such circumstances, no other change could occur, which could be relied upon as an indication of extra-uterine life.(*a*) It would appear that the effort to breathe, although unsuccessful in inflating the lungs, may, nevertheless, modify the circulation of the blood so as to leave certain proofs of the fact. These, which were first pointed out by Tardieu,(*b*) are what Casper has denominated *petechial suggillations*, and which he describes as capillary extravasations of blood beneath the pleura and the lining membrane of the aorta and the heart. In a case quoted from Hecker, there was prolapse of the cord, and the introduction of the hand to effect version of the child having necessarily compressed the cord, and thereby suspended the circulation through it, several inspiratory movements of the child could be distinctly felt. It was not, however, born alive, and extravasations like those just described, were discovered on dissection. Similar observations have been made by Hohl, in cases of foot and breast presentation when the head was detained in the uterus or vagina; the inspiratory movements of the chest were frequent and vigorous, the children nevertheless were born dead, and the pleura and heart presented the ecchymoses referred to, and the lungs sank when placed in water.(*c*) It may naturally be inferred from what has now been stated, that if any cause interrupts the fœtal circulation during labor, an inspiratory effort will be made, and if the mouth and nose of the child are still immersed in liquor amnii, this fluid will tend to enter the respiratory passages. Dr. Briesky has published four cases,(*d*) in which the heart of the fœtus was heard during labor, but life was extinct at birth. In all of them the air-passages were filled with liquor amnii more or less tinged with meconium. In the first case the cord had prolapsed, as in the example already cited, and had been subjected to pressure, so as to favor the inspiration of the liquid; in the remaining three an analogous cause within the uterus may be surmised to have existed, but could not be demonstrated. In all of these cases extra-uterine life was rendered impossible by a physical obstacle in the lungs preventing the access of air to these organs.

(*z*) Médecine Légale, 6ème éd., p. 209.
(*a*) Henke's Lehrbuch, 12th ed., p. 341.
(*b*) Annales d'Hygiène, 2ème sér., iv. 379.
(*c*) Gericht. Med. i. 706.
(*d*) Prager Vierteljahrs, 1859, iii. 175.

§ 370. (1.) *Hydrostatic lung test* (*Docimasia pulmonum hydrostatica*). This is an experiment in which the lungs of a new-born child are placed in a vessel containing water, in order to judge from their *specific gravity* whether or not the child has breathed.(*e*) Its first application in medical jurisprudence was made by Dr. Schreyer, of Zeitz, although the principle was known, it is said, by Galen. The experiment is conducted in the following manner. The lungs are carefully removed from the chest, with the heart attached or not, but always in connection with the trachea. They are then placed upon the surface of pure water. If they float, the evidence is very clear that they contain air, and the higher they float the more perfect has their expansion been. If, on the contrary, they sink to the bottom, the evidence is equally plain that they contain air to a very imperfect extent, if at all. In order, however, to judge fairly of their degree of buoyancy, and to ascertain how much and what parts of the organs contain air, a further investigation is required. The thymus gland, with the heart and pericardium should be removed with care, to avoid injuring the pulmonary tissue, after which the lungs should be again put in the water. Each lung should then be tried separately, and finally divided into small pieces, and each of these thrown by itself into the water, before and after compression between the fingers. By carefully observing the results elicited by this experiment, satisfactory proof of the presence or absence of air in the lungs may be acquired. At this stage of the inquiry no further inference is allowable; we can neither say that the child has lived and breathed, because its lungs float on the water, nor deny that it has lived if they sink to the bottom of the vessel. And yet this experiment must always retain its great importance in cases of presumed infanticide. Restricted within its proper limits and sources of error properly guarded against, there is no medical test so simple and conclusive.(*f*) As Dr. Taylor remarks, "the law holds, under the decisions of its expounders, that respiration is only *one*, and not an exclusive proof of life."(*a*)

§ 371. The objections made to the hydrostatic test are founded upon two facts:—

1st. That the air which gives buoyancy to the lungs may have been derived from other sources than natural respiration; and,

2d. That notwithstanding the absence of demonstrable air from these organs, the child may have lived. The sources from which the air may have been derived are, Putrefaction, Emphysema, and Artificial Inflation.

Putrefaction.—At an undetermined stage of the putrefactive process, gas is disengaged by the decomposition of the blood contained in the lungs, and sometimes in sufficient quantity to give buoyancy to the whole or a portion of them. The air thus evolved is, however, not contained in the pulmonary vesicles, but in the cellular tissue, and chiefly between the lobes and on their margins. Here it is seen collected in rows of bubbles, much larger than the air-vesicles, prominent, and easily disappearing under slight pressure. At the

(*e*) Valentin, Pand. Méd. Lég., Par. ii. sec. vii. p. 502. "De infanticidio per-pulmonum in aquam project. subsident. elidendo."

(*f*) De usu partium corp. human. lib. xv. cap. 6.

(*a*) Med. Jurisp. 6th ed. p. 451.

same time, the lungs present other signs of the putrefactive process, in their greenish color, diminished consistence, and fetid odor. The period at which the putrefactive vesicles are developed is not accurately known, and is influenced by circumstances, as, indeed, are all the other incidents of putrefaction.

It is a fact, however, worthy of remark, that this process is set up later in the lungs than in most of the other organs of the child. This fact is attested by many writers, and particular stress is laid upon it by Dr. Casper. In four cases examined by this author, where the child's body was already greatly decomposed, the lungs retained their firmness and dark brown color, and sank in water. In one case the heart and liver were both covered with putrefactive vesicles, and swam upon the surface of the water, while the lungs, which were firm and brown, sank to the bottom.(*b*) I have, myself, frequently found the lungs of new-born children entirely unchanged in color, consistence, and appropriate hydrostatic relations, when at the same time the brain was reduced to a mere pulp, the abdomen thoroughly putrescent, and the epidermis peeling from the whole body. The striking changes which attend the commencement of decomposition in the lungs cannot permit an error on the part of the examiner. Should the buoyancy of the lungs be due to putrefaction, by the development of spurious air-vesicles upon the pulmonary tissue, the fact may be easily recognized, and ascribed to its real cause. Should, however, no signs of putrefaction in the lungs be found, and yet these organs float, the objection is theoretical merely, and not at all pertinent. The obvious inference is, that the objection cannot be urged, when there is no proof of its applicability to the case in hand. It is not unnecessary to press these apparently simple truths upon the attention of the reader, for every day's experience in forensic medicine attests the false importance attached to irrelevant objections. When the above-mentioned changes have supervened in the lungs, they can no longer be used in evidence, since the buoyancy of these organs may be due to air derived either from decomposition or from respiration. A discrimination between the two at this period is manifestly impossible.

Emphysema was formerly distinguished from putrefaction, as a condition giving buoyancy to fœtal lungs. It may safely be asserted that no such condition is found in lungs which have not respired. It is probable that the older authors mistook for it the appearances presented by putrefaction. Drs. Cummin and Lecieux(*c*) speak of a "sort of contusion suffered by the lungs in difficult labors, to which they attribute the development of air in large vesicles on their surface," while the lungs presented at the time no signs of putrefaction; but these observations have not been confirmed by others. Mr. Taylor(*d*) says, that in examining the bodies of many still-born children, he has never met with any appearance resembling what has been described as a state of emphysema, independently of respiration and putrefaction.

§ 372. The last objection to the inference that the lungs must have respired if they float on water, is found in the fact that *Artificial Inflation* will cause

(*b*) Casper's ger. Leich. öff. 1 and 2 Hundert, Fälle 67, 68; 65, 66.

(*c*) The Proofs of Infanticide, by Wm. Cummin, M. D., p. 61. Consid. Méd. Lég. sur l'Infanticide par Lécieux; vid. also, Schmitt, loc. cit.; Versuch 32; S. 41 and 212.

(*d*) Loc. cit. p. 303, Am. ed.

the lungs to float. If the lungs of a still-born child be fully inflated by means of a tube, they increase rapidly in volume and acquire a dirty yellowish-red color; when the insufflation is discontinued, they immediately collapse, but still retain enough air to enable them to float. The effect of strong pressure in expelling this air, is, according to my own experience, which corresponds very nearly with that of Dr. Guy, almost similar to that in lungs which have respired. Nothing short of a strong and continued pressure will cause them to sink; and the compression in the one case is so nearly what is required in the other, that the difference is practically unimportant. If, however, an attempt be made to introduce air into these organs, in the only manner in which it is important to consider its effects, viz., by insufflation through the mouth of the child; the greater part of the air passes into the stomach, while a very inconsiderable portion, and sometimes none at all, reaches the lungs. Mr. Taylor says that he has had several opportunities of examining the lungs in children, where inflation had been resorted to, not for the express purpose of creating an objection to the hydrostatic test, but with the *bona fide* intention of resuscitating them. In some of these instances a tube had been used, in others the mouth. In the first case it was found, on inspection, that only about one-thirteenth part of the structure of the lungs had received air. In the second, no part of the lungs had received a trace of air, although inflation had been repeatedly resorted to; the air had passed entirely into the abdomen. In a third, attempts were made for upwards of half an hour to inflate the organs; but, on examination, not a particle of air was found to have penetrated into them. In a fourth, no air had entered the lungs; and in a fifth, although a small portion had penetrated into the organs, it was readily forced out by compression. In repeatedly performing the experiments upon dead children, the results have been very similar; the lungs, after several attempts, were found to have received only a small quantity of air.(*e*)

On the other hand, Schmitt, of Vienna,(*f*) has made numerous experiments, from which he has drawn the following conclusions:—

1. That it is possible to inflate the lungs of stillborn or asphyxiated children.
2. That the insufflation succeeds easily and completely, if done in the proper manner, and if there is no mechanical obstruction to the entrance of the air.
3. That the inflation is imperfect and difficult, and even entirely fails, when the respiratory passages are filled with mucus.
4. That the increase of volume, the spongy texture, the rosy color, and the buoyancy of the inflated lungs, vary according to the degree of success of the operation.
5. That lungs, properly inflated, are crepitant, like those which have respired, and yield frothy blood on incision.
6. That inflation increases the convexity of the thorax.
7. That it does not increase the weight of the lungs in a child which has not respired, and that, in the great majority of cases, the same relation exists

(*e*) Med. Jur. p. 305, Am. ed.
(*f*) Neue Versuche und Erfahrungen über die Ploucquetische und hydrostatische Lungenprobe, Wien, 1806.

between the weight of the lungs and the body after insufflation as in the fœtus which has never breathed.

The results obtained by Mr. Jennings(*g*) are equivalent to those of Schmitt.

Dr. Elsässer concluded, after a large number of carefully conducted experiments, that the insufflation of the lungs through and by the mouth is possible. We find, however, that he really succeeded only in one instance out of fifty-two cases, and in this one case it is stated *that the child made six distinct efforts to respire.*(*h*)

Dr. Browne, of King's College Hospital, endeavored to resuscitate a stillborn child by artificial respiration, having failed with other means. He closed the nostrils with the thumb and forefinger of the left hand, and grasped the breast and body of the child with the right. Placing his own mouth upon that of the child, he continued to breathe into it for ten minutes, imitating by pressure with his hand the natural movements of respiration. He failed, however, to revive the child. Upon inspection of the body, the lungs were found fully expanded, of a pale red color, buoyant, and frothy upon incision. Cut into pieces, however, and subjected to compression, they sank in water.

Dr. Roth(*i*) performed this experiment upon a stillborn female child, twenty-four hours after birth. Having previously removed the anterior wall of the thorax, in order to observe the changes produced by the insufflation of air by the mouth, he saw that upon the first insufflation the lungs began to expand, and that they acquired a clear red color in spots upon their surface. By continuing the inflation, this color spread all over the lungs. At the same time the stomach became so distended with air, that he was obliged to discontinue the experiment, from the fear that this organ would burst. The difference between these lungs and those which had breathed, he states, consisted in the fact that their expansion was less, the color of a brighter red, and the buoyancy and crepitation less. He succeeded in expelling the air from them by compression, and then they sank in water.

§ 373. Our own opinion upon the possibility of a successful inflation of the *lungs in situ* does not differ from that of the most recent and best authorities upon the subject, viz., that the lungs cannot be fully inflated by this means in such a manner as to resemble, in their appearance and hydrostatic relations, lungs which have perfectly respired. Those cases where the resemblance appears to have been very close may be explained upon the assumption that the child was not completely passive under the experiment, but retained sufficient vitality to make, during it, and unperceived by the physician, one or more efforts at inspiration. That the lungs of a dead child can be wholly inflated *in situ*, and made to resemble those which have naturally and fully breathed, is, we believe, at variance with the experience of the great majority of those who have given their attention to the subject.

The fact that pressure will expel the air from lungs which have been inflated *through the mouth*, while no compression less than what would destroy com-

(*g*) Trans. Prov. Med. and Surg. Association, vol. ii. p. 440.

(*h*) Untersuchungen über die Veränderungen, &c., durch Athmen in Lufteinblasen, Stuttgart, 1853.

(*i*) Henke's Zeitschrift, 1850, 4 H.

pletely the pulmonary tissue will avail to force it from those which have fully inspired in the natural way, is the chief and most reliable distinction which can be made between the two cases. The most reliable test of breathing, derived from an examination of the lungs, is, however, that which has been given by Briand and by Casper. However successful the inflation of these organs may be, their surface will never present the peculiar dark marbling described above as a sign of respiration, unless this act have been performed by the natural mechanism. The reason of the difference between the appearances in the two cases is a simple one. Natural respiration is an act which tends to create a vacuum in the lungs, and consequently to draw into them the blood of the pulmonary arteries, which gives them the comparatively dark bluish and marbled aspect alluded to; but artificial respiration, by which air is forced into the lungs, tends, by the pressure of that air, to exclude the blood, and consequently to render the color of the lungs still lighter than before. But in judging of the value of this test, it is important to recollect that its applicability is limited to cases in which the distension of the lungs is considerable. The less they depart from the fœtal state, the less does its value become.

§ 374. It must be admitted, however, without the least reserve, that the effects of artificial inflation cannot be distinguished from those of *imperfect respiration*. Although the distension of the stomach and intestines with air is an inevitable accident in artificial inflation, it cannot be relied upon as a diagnostic sign, since it may be merely a cadaveric phenomenon. Its *absence*, indeed, in a case where it is supposed that these means had been used, would, of course, disprove the supposition. A distinction might, perhaps, be hoped for from the employment of Ploucquet's test, since the artificial filling of the lungs with air increases their volume alone, without altering their absolute weight; while natural respiration, being attended with a circulation of blood through the pulmonary vessels, increases their weight and volume together. But it will be seen further on that the results attained by Ploucquet are too variable and uncertain to be used where a distinction of so delicate and momentous a nature is required. The question can be disposed of only in one manner. If other evidence can establish the presumption that artificial inflation has been attempted, the physician must then be ready to answer whether the results of his examination are such as to justify and support this presumption. But if, on the other hand, no such evidence is offered, we do not see how it can be required of the physician to take into consideration the possibility of a manœuvre which he knows can be effected only by skilful and careful professional management, and which, moreover, the nature of the alleged crime renders in the highest degree improbable. From the prominence usually given to this objection to the hydrostatic test, one might be led to suppose, as Mr. Taylor justly remarks, "that every woman tried for child-murder had made the praiseworthy attempt to restore a stillborn child, although circumstances may show that she had cut its throat, severed its head, or strangled it while the circulation was going on."

§ 375. Having now examined the conditions which will cause the lungs of a new-born child to float when submitted to the hydrostatic test, it remains

for us to notice briefly those which will cause them to sink and to remain at the bottom of the vessel, as in the fœtal condition. *Disease* of any kind, which increases the density of the pulmonary structure, will cause them to sink, or rather that portion of them affected thereby. *Pneumonia*, or inflammation of the lung, so increases the density of pulmonary structure as to cause it to sink in water. It is rare, however, that pneumonia occurs congenitally, and it does not necessarily involve the whole lung; hence portions of it may be found to be buoyant. It has been asserted that a very great *congestion of lungs* which have already respired will destroy their buoyancy, but this fact has been clearly disproved.(*j*) We need hardly say that if the structure of the lungs be so diseased that they will sink in water, the cause cannot fail to be evident. Reference has been previously made to that condition of imperfect expansion of the lung, called *atelectasis*. Occasionally the lungs contain such a trifling amount of air, that it is not sufficient to float the whole of the organ, and life and respiration may exist without bringing about the usual changes in the pulmonary tissue. We are obliged, moreover, to admit, on the authority of credible writers, the fact that life and respiration may be prolonged for a considerable time, and yet, on *post-mortem* examination, the lungs, either whole or divided, sink in water. Such instances have been met with by trustworthy German writers.(*k*) In two cases which came under Böcker's observation the children were born by the head, and without difficulty. Movements of the limbs, the sounds of the heart, and the pulsations of the umbilical arteries were perceived, but no act of breathing; and after death, which took place speedily, the lungs sank in water even when cut into small pieces. In a third case no movements were made by the child, but the heart and the cord pulsated for two minutes, and the lungs gave the same results, on being tested, as in the previous cases. These results have been strikingly confirmed by the experience of Dr. Taylor. He says:(*l*) "I may add to these instances two which have occurred under my own observation. In one, the case of a mature male child, the lungs sank in water, although the child had survived its birth for a period of *six hours*. In the other, the case of a female twin, the child survived *twenty-four hours*, and after death the lungs were divided into thirty pieces, but not a single piece floated; showing, therefore, that although life had been thus protracted, not one-thirtieth part of the structure of the lungs had received, from respiration, sufficient air to render it buoyant." Now, although these results conflict with general experience, and are not clearly explicable upon any known physiological ground, they must be allowed to have their weight. Hence, if a child's lungs sink in water, and no disease be found by which the fact can be explained, we cannot infer that the child has not lived, nor even that it has not breathed, although the respiration must have been exceedingly restricted. Hence, in this case the hydrostatic test can give us no positive proof of the non-occurrence of respiration. This certainly is a matter of regret; but although it does not always enable us to attain the truth, and detect criminality, it does not, on the other hand, cause the life of an innocent

(*j*) *Vid.* Schmitt, *loc. cit.*
(*k*) Remer, Bernt, Schenck, Osiander, Meckel, Böcker.
(*l*) Medical Jurisprudence, Am. ed. p. 300.

person to be placed in jeopardy. It is merely an imperfection in the test, and affords no ground for an objection to its application in other cases in which it undoubtedly is capable of affording positive and useful knowledge.

§ 376. (2.) *Static tests* are founded upon the observation that the lungs of children who have breathed are heavier than the fœtal lungs. This fact has been ascertained by direct experiment, and is attributed to the blood, which, as soon as the child makes the first attempt to breathe, enters the lungs. In proportion, therefore, to the degree of the pulmonary expansion will be the weight of these organs. Now, it is obvious that if a constant average weight of the lungs before and after respiration could be ascertained, drawn from numbers which fluctuated but slightly, it would afford a useful standard of comparison by which we could judge whether a child had really lived and breathed. For if, as was estimated by Daniel, the weight of the lungs after respiration was constantly augmented to the amount of two ounces, and this could be established as the general rule, there would no longer be any difficulty in deciding the knotty question of live birth. Observations, however, have satisfactorily shown that no such constant average weight of the lungs exists. These organs in some mature stillborn children actually weigh *more* than in those who have enjoyed full and complete respiration, and in this respect the difference is not more singular than is the great variation in size and weight of the whole body in healthy children born at full time.

§ 377. The second form of the static test, advocated by *Ploucquet* in 1782, and usually named after him, is quite as uncertain as the foregoing one. It is founded on a comparison of the absolute weight of the lungs with the weight of the body. Ploucquet having made a few experiments respecting the proportion existing between them, fixed the average at 1.70 before respiration, and at 2.70 after it; in other words, he considered that the lungs, after breathing, weighed nearly twice as much as they did before. The repeated and numerous observations since made by Jäger, Schmitt, Lecieux, Chaussier, Orfila, Taylor, Guy, and Beck, have clearly proved that any constant ratio, like that assumed by Ploucquet, is illusory and inexact.

According to Elsässer, the congenital differences in the absolute weight of the lungs are far greater than those in the absolute weight of the body. Thus, in 68 stillborn mature children, he found the average weight of the lungs to be 13 drachms 18 grains. The *maximum* weight (in perfectly normal lungs) was 20 dr. 35 gr. The *minimum*, 8 dr. 35 gr. Hence the difference or variation was 12 drachms, which almost equals the average weight. The average weight of the body in these 68 children was 7 lbs., and the difference between it and the greatest weight did not amount to *one*-half of the average weight.(*m*)

The relative weight of the lungs and body varies in different individuals, according to sex, peculiarities of conformation, and other circumstances. Almost every author who has experimented with a view of ascertaining a fixed average ratio, has adopted a different one from his predecessor, and the conclusion appears to be generally admitted that the test is not reliable. In

(*m*) Loc. cit. p. 96.

conclusion, we may remark, that if these static tests are not worthy of dependence in those cases where the child has *fully* respired, still less are they to be relied upon where the function of respiration has been *imperfectly* established. It is in the latter cases, that, practically, the great difficulty of a correct judgment lies; the former are much more satisfactorily determined by the hydrostatic test.

§ 378. The following are the chief points which have now been demonstrated:—

1st. That although respiration is conclusive evidence of life, it may take place previous to birth.

2d. That life for a brief period is compatible with absence of respiration.

3d. That none of the mere anatomical proofs of live-birth are satisfactory, when taken singly.

4th. That even when combined, they fall short of demonstration.

5th. That the result of the hydrostatic test may (in some as yet unexplained cases, as where the lungs sink in water although the child has breathed) be negative in its character.

6th. That the hydrostatic relations of the lung afford evidence in reference to respiration which, especially when confirmed by the static tests, is exposed to few real sources of error.

7th. That the objections to the hydrostatic test are mainly theoretical.

8th. That the burden of showing their applicability rests with the objector.

From an analysis of the evidence furnished by an examination of the lungs in the cases which have been considered in the present article, Casper arrives at the following conclusions. A child may be regarded as having breathed during or after birth,

1. If the upper surface of the diaphragm is between the fifth and sixth ribs.

2. If the lungs fill the cavity of the chest more or less completely, or at least do not require a separation of the incised ribs to render them visible.

3. If the predominant color of the lungs is not mottled by patches.

4. If the lungs, on careful trial, are found to float upon water.

5. If moderate pressure of incised portions of the lungs causes a bloody froth to exude.(*a*)

It has been proposed to draw certain inferences as to the life of the child from the contents of the stomach. If this organ contains milk, starch, or sugar, there can be no doubt of its having lived after birth. In other cases innutritious substances have been found in it, affording an equally positive reason for concluding that the child was born alive. In a case reported by Märklin(*b*) of an infant's body found in the Rhine, its stomach, intestines, and air-passages contained a certain quantity of the sand which the water of this river holds in suspension, and, although its lungs were completely empty of air, it was concluded that the sand could not possibly have reached the organs in which it was found without an active movement of swallowing, and therefore not without the child had lived.

(*a*) Gericht. Med. i. 767. (*b*) Casper's Vierteljahrs. xvi. 26.

3d. *Causes of Death in the New-born Child.*

§ 379. These causes are usually divided into accidental and criminal, and also into causes of death by commission and by omission. The necessity, however, of constantly keeping in mind the fact, that the imputation of a criminal purpose rests upon the explanation given to the marks by which the various modes of death can be distinguished from one another, induces us to consider them from another point of view—viz., according to the *time* at which they are brought into operation. By this arrangement, the reader will be able to see at a glance that accident and design will often produce the same physical results, and will be enabled to obtain a correct view of the cause in proportion to the closeness of the apposition in which the effects are placed. For the sake of convenience the causes of death in the new-born child may be divided, into those which act *before* or *during* birth, and those which act *after* birth.

§ 380. (1.) *Causes of death before or during birth.*

(*a.*) *Compression of, and by, the umbilical cord.*—The umbilical cord suffers compression during birth unavoidably in breech presentations, and also when it is prolapsed in these and in presentations of the head. In the latter case, if the labor be not brought speedily to an end, or the cord replaced, the obstacle to the circulation of the blood is such, that the child will soon perish. A curious case is referred to by Dr. Elsässer, in which the hand of the child was found grasping the cord firmly and holding it against its face. The child was nearly asphyxiated, and recovered only after a quarter of an hour. There are no distinctive and certain marks proving that death is owing to compression of the cord. Great turgescence and lividity of the features, with a congested state of the head and thoracic viscera, would, in the absence of any marks of violence, afford a fair presumption of it. The converse of this accident happens, when the cord becomes the direct instrument of the child's destruction by being wound around its neck.(*n*) In this case, when death results, it is not brought about exactly in the same manner as in strangulation after birth, the child having then respired; but ensues, either from an interruption in the current in the cord itself, from the tightness with which it is wound around the neck, and the stretch put upon it in the latter stage of labor, or probably, also, from its constriction of the vessels of the neck, causing congestion, and even extravasation of blood in the brain.(*o*) It does not appear that this accident occurs only when the cord is of unusual length; in fact, in many cases, this circumstance is doubtless that to which the child owes its escape, because it is probably wound around the neck but loosely and is not rendered tense by the descent of the child. As, however, fatal results occa-

(*n*) The average frequency of this complication of labor is, according to Elsässer as one to five. Its danger to the child is variously estimated. According to Mayer, it was the cause of death in only 18 out of 685 cases in which it occurred, while Scanzoni attributes 408 out of 743 cases of still-birth to this cause. Casper, who furnishes this statement, alludes to a mode in which it may prove fatal besides those given in the text, viz., by causing the child to make inspiratory efforts, and thus draw the liquor amnii into its lungs, after the manner already referred to in § 369.

(*o*) Casper, Gericht. Med. 343 Fall.

sionally happen from this cause, and as, in unassisted labors, there is greater probability of their occurrence, we cannot dispense with a consideration of the marks by which it may be distinguished from intentional strangulation before birth. The cases in which intentional strangulation may be effected before birth, are those in which the head alone is born, while the body is not yet expelled. Children are not unfrequently strangled while in this position, and it is therefore important to know whether this violence has really been inflicted, or whether they may not have perished accidentally by constriction of the neck by the umbilical cord. A case is reported by Ritgen, in which a child, whose head was born and who had breathed, died of apoplexy, from strangulation by the umbilical cord.(*n*)

§ 381. The statement, that marks similar to those of wilful strangulation are often produced in this manner, has, we think, been too readily accepted. Instances have indeed been met with, which support this view, but a very large and careful experience has shown, that the occurrence is far from being a necessary or a common one. Dr. Elsässer,(*o*) in his capacity of superintendent of a large lying-in hospital in Stuttgart, instituted a series of observations which have given much greater exactitude to our previous knowledge on this subject.

In the space of seven years, there occurred in that institution 327 cases of labor in which the umbilical cord was twisted around the neck. Of this number, there was one fold of it around the neck in 228 cases, two folds in 82 cases, three in 13, and four in 4 cases. Yet, in the whole series, there was not a single instance in which the least mark, impression, or ecchymosis was visible. In some cases, the cord was so tightly wound around both neck and body, that it was necessary to divide it before birth could be accomplished. Dr. E. adds, that in a private practice of twenty-four years (1835) he had never met with a case in which any mark was left by the cord. These observations establish satisfactorily the great rarity of the occurrence.

Yet it would be impossible to maintain that no mark *ever* is left. The author quoted above admits it freely, upon the authority of Carus, Wildberg, Mende, Albert, and other obstetricians. The marks are described as very various in their character; sometimes being merely furrows in the skin, without color, and sometimes red or blue stripes crossing each other and occasionally extending a short distance over the breast or back. Mr. Foster(*p*) reports a case in which the child was born dead, the labor being very tedious. The umbilical cord was twisted around the neck, leaving three parallel colored depressions. Dr. Döring(*q*) examined a new-born child found dead, in which the navel cord was coiled twice around the thigh, passed across the front of the body, and crossing the shoulder blades, formed a tight loop around the neck. On the left side of the neck, beginning at the ear, there was a purple discoloration of the skin in two directions, viz: towards the nape of the neck

(*n*) Gemein. deutschen Zeitschrift. Bd. I.

(*o*) Henke's Zeitsch. 1835. Uber Umschlingungen der Nabelschnur um den Hals der Kinder bei der Geburt, in forensischer Hinsicht. Also, Henke's Zeitsch. 31 Erg. H. 1842.

(*p*) Med. Gaz. xxx. vi. 485. (*q*) Henke's Zeitsch. Erg. H. 23, p. 29.

and towards the breast, corresponding to the parts which were pressed upon by the cord. There was no indentation nor ecchymosis, and the death of the child was found, upon examination, to be due to violence. Two cases are given in the same journal by Dr. Albert(*r*) in which the cord left a groove upon the neck, three or four lines wide, and of a dark blue color. The face in both cases was livid and turgid; and in one, in which the child had partially breathed, the eyes and tongue protruded, the latter being blue and swollen.

§ 382. A real ecchymosis, or extravasation of blood under the skin, has probably been observed but seldom in accidental strangulation by the umbilical cord.(*s*) A livid mark does not always indicate an effusion of blood, but is frequently caused by simple congestion—a fact which is proved by its rapid disappearance if the child survives.(*t*) It would not be safe to assume that the existence of ecchymosis disproves the possibility of this accident, because, in addition to the possible occasional occurrence of extravasation, it must be remembered that the marks remaining after intentional strangulation are not always accompanied by it. Even in hanged persons, an extravasation of blood under the mark of the cord is not always found. Nevertheless, if ecchymosis be found under a deep and discolored mark upon the neck, and at the same time there is abrasion of the cuticle or laceration of the skin, such an injury cannot possibly be attributed to the umbilical cord. This opinion is held by Dr. A. S. Taylor,(*u*) and is fully substantiated by a large number of recorded cases. In order that the reader may form an approximate estimate of the proportion of children born dead, in consequence of strangulation by the umbilical cord, we may state that Elsässer reports, that out of 318 children born with the cord around the neck, three died, or one in 106; Carus found one in 43; and Siebold, one in 61 cases. Two points, however, must not be forgotten in connection with these data, viz: that they were all cases of labor where the best assistance was at hand, and that a certain number of the children were born apparently dead, but revived under the use of proper restoratives. The mortality in concealed and unassisted deliveries would certainly be much greater. Hence a woman, secretly delivered, may be unjustly accused of infanticide whose child has perished from a purely accidental, and by her, irremediable cause. In fact, the cord may be twisted around the child's neck or body during pregnancy, and its death is thus sometimes accomplished before the occurrence of labor.(*v*)

§ 383. The child is not unfrequently wilfully strangled before it is completely born. When a ligature is found upon its neck, there can of course be no longer a question whether the impressions made were due to the umbilical cord. The defence is usually that the ligature was placed upon the neck by the woman herself, with the object of assisting her delivery. No medical evidence can disprove such a statement. If, however, the child has been strangled by the hand, whether wilfully or by accident, in attempts at self-delivery, the im-

(*r*) Ibid. Bd. 42, p. 207. (*s*) Elsässer, loc. cit. 1842, p. 7.
(*t*) Windel, Henke's Zeitsch. Jahrg. 1836, 1 Heft.; Heyfelder, Med. Annal., Heidelberg, 1838, S. 258; Eichorn, Med. Cor. Bl. bayer, Aertze, 1840, Aug. 8.
(*u*) Med. Jur. p. 343.
(*v*) Daubert, dissertat. de funiculo umb. fœtu circumvoluto. Götting. 1808. Freyer, de partu diffic. propter funic. umbil. fœtûs collum obstringentem. Halle, 1765.

pressions left will be of a different character from those produced by the constriction by the umbilical cord. A consideration of these will be found under the head of *Strangulation after birth.* We may, however, mention in this place, as the chief characteristic, that the indenture or discoloration made by the umbilical cord surrounds the neck entirely, which is never the case in death from hanging. The mark made by the umbilical cord is moreover broad, the depression is cylindrical, and its edges are soft, and it is not excoriated as when a string or other hard substance has been used. Moreover, this depression is rarely single, as in cases of violence, but oftener double, and occasionally triple, nor is it, as in the other case, hardened at the edges, or accompanied by subcutaneous ecchymosis.(*a*) It may be sometimes important to remember that, in fat children especially, if the neck be short and the body have been kept or found in a cold place, that the fat, becoming congealed in the folds of the skin upon the neck, will give rise to furrows, which, to those who may disregard the other signs of strangulation, may suggest the suspicion of a ligature having been used.(*b*)

§ 384. (*b.*) *Protracted delivery.*—The child frequently dies solely in consequence of the protraction of the labor, and this is especially the case in first labors, or where the membranes have broken early in the first stage. In such cases, death takes place usually from congestion of the brain, in consequence of the compression it suffers. After such tedious labors, the head becomes apparently elongated, and over the occiput a tumor forms, often called *caput succedaneum*, caused by a congestion of the vessels of the scalp and an exudation of bloody serum into the cellular tissue under it.

§ 385. (*c.*) *Debility.*—The child may die, also, from constitutional feebleness, inherited from its parents, or produced by causes acting upon it during its intra-uterine existence. It may survive its birth a few hours or days, and then perish from inherent debility or the neglect of some trifling precaution, which in a healthy child would be of little importance. The inspection of the body will often warrant this judgment when there is no other evidence to show the cause of death.

§ 386. (*d.*) *Hemorrhage from the umbilical cord.*—If the body of a newborn child present the evidence, in its blanched and waxy hue, and in the paleness and dryness of the internal organs, particularly of the heart and lungs, of a great loss of blood, the hemorrhage will have proceeded, when no wounds are found which will otherwise account for it, from the umbilical cord. This rule, which is generally admitted, is, however, not applicable when the body of the child is already decomposed; since, during the putrefactive process, according to Casper, the body parts with a considerable portion of its blood. The hemorrhage may have been accidental,(*c*) or permitted with a criminal design. In either case, it may arise from laceration of the cord, or from neglect

(*a*) Casper, op. cit. i. 804.

(*b*) The degree of pressure which the cord may exert during fœtal life is illustrated by those cases in which deep impressions and consequent malformations of limbs have resulted from this cause. Even the amputation of a limb has been observed as an effect. Such a case is recorded in Virchow's Archiv. x. 110, by Dr. Frickhœffer, who also cites three analogous instances.

(*c*) From an imperfectly applied ligature, or from a morbid condition of the child's blood. See a valuable Report by Dr. J. F. Jenkins, Trans. Am. Med. Assoc. xi. 263.

or omission to tie it. The question of the necessity of tying the umbilical cord, although one which we, in common with the majority of writers, would unhesitatingly decide in the affirmative, is not necessary to be discussed in this place.(*w*) As has been very justly remarked by Dr. Beck,(*x*) the whole question rests upon a simple matter of fact, viz., whether the omission to tie the cord has ever been attended with fatal hemorrhage. "That it has been so, cannot be questioned." Dr. Beck quotes cases in illustration from Foderé and from Dr. Campbell. Many other examples(*y*) might be added to these, but we do not suppose that the least instructed practitioner would neglect this precaution, since even if hemorrhage should not immediately ensue, there is no guarantee against its occurring at any time within the first two days. Yet Casper, in his long and ample experience, never met with a single instance of the sort, although not less than four cases came under his observation in which the cord was divided close to the navel, and, as he adds, examples of the cutting or laceration of the cord at various distances from the body, and without death by hemorrhage, are of every day occurrence.(*yy*)

§ 387. The cord may have been left untied in a *first* labor, through excusable ignorance upon the part of the woman. Such ignorance cannot, however, be plausibly urged in subsequent labors. That a woman, in an unassisted labor, who had neglected placing a ligature upon the cord, should be convicted of infanticide in consequence of the child dying from a neglect of this precaution, is of course hardly supposable.

In many cases, however, of precipitate labor, in positions other than the horizontal one, the cord frequently breaks. Hemorrhage, under these circumstances, would not be surprising. The result of observations on this point is, that in the great majority of cases it does *not* take place. In twenty-six cases given by Dr. Klein, where the cord was torn off close to the navel, no hemorrhage resulted. In Pyl's Aufsätze the account of a child is given which had been placed in a close box, and covered with wool, where it remained six hours, and was taken out perfectly sound and healthy, although its navel string had been torn and no ligature applied. In eleven cases reported by Elsässer, in which the child had fallen from the mother, upon the hard ground or pavement, and the cord was ruptured, no hemorrhage resulted except in two.(*z*) In these, the life of the child was saved by timely help. In two cases, in which the cord was ruptured at the navel, a very small quantity of blood escaped. In two other cases, in which the cord had been cut and no ligature applied to it, no hemorrhage resulted from the omission. One woman is reported to have followed the animal instinct, and divided the cord with her teeth.(*a*) Others

(*w*) It is worthy of remark, that it is the habit of the Indian squaws to *break* the cord, and then bind the fœtal end with a strip of bark. This fact we have on the best authority. (*x*) Med. Jur. vol. i. p. 511.

(*y*) Haller, Elem. Physiol. tome viii. p. 443. Nägele, Salzb. Med. Zeit. 1819, N. 88, S. 151. Cederschjöld, Med. Chir. Zeit. N. 11, S. 181—seven days after birth. Klose, Henke's Zeitsch. Bd. 40, S. 105. Dolscius, ibid. Erg. H. 34, 1845, S. 180. In this case the fragment of the cord remaining attached to the child was sixteen inches long. The cord has been torn, not cut, by the mother. The child had breathed.

(*yy*) Gericht. Med. i. 824. (*z*) Henke, Zeitsch. Erg. H. 31, p. 38.

(*a*) This is not the practice with all the domestic animals, as is erroneously supposed, but only with the dog, cat, and pig, which, moreover, devour the after-birth. But in the horse and in the ruminant animals, the cord is generally broken by the fall of

broke it in two with the hands. In one case the mother (who had previously borne children) was suddenly delivered in the street, in a squatting position. The child, which weighed seven pounds, fell upon the pavement. The mother immediately broke the cord in two, about four inches from the navel, and without tying it, put the child in her apron and ran with it to the hospital. There she was delivered of the placenta, with considerable hemorrhage, from which she soon, however, recovered. The child showed no signs of loss of blood. The general opinion, undoubtedly, is correct, that a ruptured or lacerated cord will be much less apt to bleed, than one which has been divided by a clean incision.

§ 388. (*e.*) *The length of the umbilical cord* is an important element in the consideration of those cases in which it has been broken, from delivery taking place in the standing position. An example may be cited from Siebold's Journal, vol. XVI. p. 3, where a woman was overtaken by labor and the child born, while she was in a standing posture. It fell with its head upon the stone floor and sustained no injury. The cord did not give way: it was twenty-nine inches long. A similar case by Heyfelder is referred to by Elsässer.(*b*)

The usual length of the cord is from eighteen to twenty inches,(*c*) and the average distance of the vulva from the ground, in a woman standing, is according to fifty accurate measurements made in Dr. E.'s hospital, twenty-six inches, and in a woman in the squatting posture, one-half or two-thirds of this distance. The distance from the child's navel to the top of its head, is from nine to ten inches. Hence, if we add this to the whole length of the umbilical cord, in consequence of the head being the heaviest part of the body, it will be seen that the child can fall from twenty-eight to thirty inches without putting a strain upon the cord. But this distance will necessarily be diminished by the unavoidable separation of the limbs during the descent of the child, it being clearly impossible that a woman can be delivered in a *perfectly* erect position. The cord may, however, be unusually short or wound round the neck, in which cases, of course, its rupture will readily take place. The point at which the cord breaks is, in the great majority of cases, near the navel, the distance varying from one to six inches, occasionally, however, it occurs at other points. This circumstance admits of explanation upon the ground, that the greatest resistance is at the fœtal end of the cord, the placental portion being more yielding. When the cord does not break, the placenta is sometimes dragged out by the weight of the child. A curious and important case in which the cord was ruptured while the woman was in the *recumbent* posture, is given by Elsässer.(*d*) The cord was unusually short, and the child forcibly expelled, immediately after the rupture of the membranes. When taken up it cried loudly, and was found to

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the young when the mother is in a standing position, or, when delivered in the recumbent posture, by her suddenly springing up. The rupture occurs in general near to the navel. When it is not broken in either of these ways, assistance is usually at hand to make the separation. (*b*) Loc. cit.

(*c*) Dr. Tyler Smith exhibited to the Westminster Medical Society (Jan. 12, 1850), a funis which, measuring from the attachment at the umbilicus, to its insertion into the placenta, was *fifty-nine* inches and a half in length. In the Boston Med. Surg. Journal for July, 1850, one is mentioned which measured *sixty-nine* inches.

(*d*) Henke, Zeitsch. Erg. H. 31, p. 39.

be bleeding freely from the umbilical cord, which was ruptured about three inches from the navel. The cord was from thirteen to fourteen inches long, and not thicker than the little finger, although healthy. The woman had previously given birth to six children.

§ 389. (*f.*) *Fractures.*—Where fractures are found on the head of a new-born child, they may be attributed as well to accidental as to criminal causes. If a woman have received, in the latter portion of her pregnancy, a violent blow or fall upon the abdomen, the child's head may be fractured by the same force. J. P. Frank relates the case of a woman, six months pregnant, who received, on the abdomen, a blow from the butt of a musket, in consequence of which she was prematurely delivered.(*e*) The child's skull was crushed and the navel-cord broken. Another case(*f*) may be referred to, where a woman near her confinement fell upon an angular stone. The skull of the child was completely crushed, and the woman herself died. Other intra-uterine fractures, it may here be stated, are occasionally met with, besides those of the head. Dr. Keller has given an account of a fracture of the clavicle, which was caused by the fall of the mother from a carriage during the fourth month of pregnancy. At birth, which took place at term, the evident marks of a consolidated fracture, with some deformity were apparent.(*a*) Two other cases of intra-uterine fracture of this bone are related by Mr. John Ewens.(*b*) Basmer relates a case(*c*) in which the right arm and forearm, and both thighs and legs of the fœtus, which died immediately after birth, were broken. The earthy matter in the bones formed one-third only of their weight instead of one-half, as it should have done. Three cases are quoted by Dr. Gurlt,(*d*) from d'Outrepont, Löwenhardt, and Ozajewski, in one of which the skull of the fœtus was fractured by a shot, in a second by a scythe, and in the third, the shoulder-blade was broken by a sickle. In all three cases the children were born dead; in the first two, immediately after the injury, and in the third, at the end of two days. In the first case only did the mother die. In all of these cases the mother was of course wounded. The same author cites eight cases in which falls or blows experienced by the mother produced fractures of the bones of the fœtus. The accident usually occurred in the latter half of pregnancy, and generally the lower limbs were the parts injured. Union of bones so broken is stated to be slower than in extra-uterine life; but on this point the evidence is not very clear. Such cases, however, have little practical bearing upon the subject; the child is born dead in consequence of the injury, and if not putrid, an inspection of the lungs will at once show that it has not respired. Hence there can be no question of infanticide.

§ 390. Again, however, fracture of the skull may occur *during* labor, in consequence of the relative disproportion of the head to the pelvis, or of a deformity in the latter, arising from osseous projections or tumors. The child

(*e*) For another similar case by Callenfels, vid. Fröbel, Die Nabelschnur in ihrem pathol. Verhalten während der Geburt.
(*f*) Gaz. des Hôp. Nov. 7, 1846.
(*a*) N. Amer. Med. Chir. Rev., July, 1859, p. 687.
(*b*) Med. Times and Gaz. May, 1860, p. 482; consult also Ibid. Apr. 1860, p. 353.
(*c*) Brit. Med. Journ. 1857.
(*d*) Lehre von den Knochenbrüchen, Frankfurt a. Main, 1860, p. 211.

may survive these injuries a sufficient time to breathe,(*g*) and, indeed, may recover from them altogether. It becomes necessary, therefore, to take the circumstances into consideration, in all cases of fracture of the skull in new-born children, that it may have occurred *accidentally during labor.*(*h*) Fractures produced in this way are certainly of very rare occurrence, for the child's head often sustains extreme compression, both from the uterus and in forceps deliveries, without being injured. They are found most frequently in the parietal bones, sometimes in the frontal, and never, as far as we know, in the occipital bone. Usually they are mere fissures, unattended with depression and laceration of the integuments. Cases, however, are related by Landsberg,(*i*) and by Danyau, and Ollivier d'Angers,(*j*) in which there was depression. M. Lizé mentions the case of a young woman who was three days in labor, and who was delivered without instruments after great efforts on her part. The child was dead, and the parietal bone of the left side severely fractured.(*jj*)

§ 391. Although respiration may have taken place, the fact being established by the hydrostatic test or direct evidence, it will not serve as a criterion of the time at which the fracture was produced, since the child may have received it during the labor, and yet have survived the injury until after it was born and had breathed. In such a case we have nothing left to guide our judgment, but an examination of the extent, situation and appearance of the fracture. In the majority of cases, in which criminal violence has been used, the fracture is stellated, depressed, and the scalp contused and lacerated. It is plain, however, that slight fractures, productive of fatal results, may be inflicted by violence, and in such cases no reliable distinction can be made between them and those which are caused by compression of the head during labor. The following will serve as an example of fracture without injury to the integuments, but still in all probability caused by criminal violence. An inquest was held in Islington, before Mr. Wakley, on the body of an infant, whose death, there was reason to believe, had been caused through violence wilfully inflicted by the mother. Over each orbital ridge, the frontal bone was fractured horizontally, to the length of about an inch. On the right frontal protuberance, the bone had been driven in to the extent of three-quarters of an inch, in the form of an acute wedge-like fracture. The parietal bones were both fractured vertically, to the length of an inch and a quarter, and there were several minor fractures of all the bones forming the superior and lateral portions of the skull. There was, with all these fractures, no trace of injury to the scalp. No evidence was obtained as to the manner in which they were produced. The child had been born alive, and the mother alleged that its death was caused by its having fallen into the pan of the water-closet, where she asserted she was seated at the moment of its birth. The extent of the

(*g*) Klein. (Bemerkungen über die bisher angenommenen Folgen, &c., 1817, § 193.) The child lived forty-six hours. The parietal bones were fractured, and there was extravasation of blood in the brain and spinal canal.

(*h*) For cases vid. Deventer, Röderer, Baudelocque. E. v. Siebold (his Journal, xi. 3), Schwörer (Beiträge zur Lehre von der Schädelsbrüche, &c.). Begasse (Preuss. Med. Vereinschrift, 1841, No. 37, sec. 181). Mende (Gutachten über einen Zweifelhaften Fall, &c. H. Z. Bd. 3, sec. 277). Casper (Wochenscrift, 1837, 1840, 1851). Osiander, loc. cit.

(*i*) Henke, Zeitsch. 1847.

(*j*) Ann. d'Hygiène, 32, 121.

(*jj*) Lancet, Feb. 1860, p. 180.

injuries, and the small distance of the alleged fall, disproved the truth of this statement.(*k*)

The physician should be aware that a *defective ossification* of the bones of the head may be mistaken for a fracture. The distinction is, however, not a difficult one. This condition, when observed, is usually found in the parietal bones, and consists in an absence of one or more of the osseous *spiculæ*, which radiate from the central point of ossification. The gap is filled up by a membrane which unites the bony portions together. The edges of the bone on each side of this membrane are thin and bevelled, sometimes shading off insensibly into it. A fissure, however, which is the result of violence, is indicated, on removing the pericranium by a red line, the edges of the bone are jagged and bloody, and no membrane intervenes. More or less blood is effused in the neighborhood of the fracture, under the scalp and on the dura mater. If no bone is lost, the edges of the fracture can be adjusted closely together.(*kk*)

§ 392. Fractures which are occasioned by the *fall of the child* upon the ground, when the mother is delivered in a standing, sitting, or kneeling posture, are deserving of particular attention in a medico-legal point of view. The fractures thus produced present, indeed, no peculiar features by which they may be distinguished from others, caused by direct violence, but the probability of their being due to this accident becomes often a question of extreme delicacy. Landsberg gives a good illustration of this accident in the following case:(*l*) A woman who had already borne children, was taken in labor, as she ran from her house which was on fire; the child fell from her upon a heap of broken bricks and stones. Fourteen days afterwards there was found upon the left parietal bone of the child, a swelling of the size of a pigeon's egg, without any discoloration of the skin, and with slight fluctuation. The fragments of bone and crepitation could be easily distinguished by pressure of the finger upon this spot. The child got well.(*m*) Numerous other cases might be quoted; the curious reader will find many referred to by Henke.(*n*) Dr. Klein collected one hundred and eighty cases of delivery in the erect posture, in none of which the head of the child was fractured. It is contrary to reason, however, to adduce this as proof (as has been done by some authors) that fractures are not occasioned by the accident in question. The instances which demonstrate its occurrence are perfectly authentic, and if we were reasoning abstractly, it would be far more credible that the fractures should occur under the circumstances referred to, than that they should not.(*nn*) The possibility

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(*k*) Brit. and For. Med. Rev. April, 1854.

(*kk*) The period at which the fontanelles close has been made a subject of inquiry by M. Roger (Union Med. Nov. 1859). They generally close between the second and third year. In three hundred children, the anterior fontanelle was never found closed before the fifteenth month, and never open after the age of three years.

(*l*) Henke, Zeitsch. 1847, 3 Heft.

(*m*) Dr. Swayne reports a case in which a woman, twenty-nine years of age, in her third labor, at full time, bore a child in the erect posture. The umbilical cord was torn, and the child, though much bruised, lived to the sixth day, when it died of convulsions. The parietal bone was fractured, and a coagulum was found on the membranes of the brain. Another case is reported by Casper (Ger. Leichenöff.) (Assoc. Journ. Oct. 14, 1852, p. 401.)

(*n*) Handbuch der Gericht. Med. 12th ed. by Bergmann, 1851.

(*nn*) Casper speaks in deservedly severe terms of some writers who, on merely

of the accident may therefore always be taken into consideration, in cases of concealed birth, when fractures of the cranium are discovered. Other evidence will be of course required to confirm the supposition.

§ 393. (2.) *Causes of death after birth.*—The modes in which a new-born child may meet its death shortly after birth are very numerous. A child may be born with such a degree of *malformation or disease* as to incapacitate it from sustaining life. In all such cases an examination by a competent person will be sufficient to expose the reason of death. It must be remembered, however, that there is hardly any malformation which *necessarily* prevents the child from existing for a brief period, even though it should at last be fatal as a natural consequence. Anencephalous children frequently survive for hours and days, and perform most of the animal functions perfectly well. If violence should be inflicted upon such an unfortunate being, it may be judged according to the ordinary rules; the aim of the physician being only to ascertain what share the injury had in its death. The question of the degree of criminality attached to the destruction of a monstrous child is not, of course, within his province. Minor degrees of malformation are not infrequent, such as extroversion of the bladder, displacement of the viscera, spina bifida, occlusion of the intestine, imperforate rectum, abnormal communications between the cavities of the heart, &c.; many of them are remediable, others are not inconsistent with the attainment of adult life, and none can interfere with the judgment of a medical examiner in any case of infanticide. The same remark will apply to *congenital diseases*. Their actual existence can be ascertained, and allowance made for any influence they may possibly have exerted in causing the child's death.

§ 394. (*a.*) *Exposure.*—Under this name may be included all those modes of death which result from the abandonment of the child. The new-born child, unlike the young of many other animals, speedily perishes if uncared for. It requires both warmth and nourishment, and if deprived of either, cannot maintain its existence. The period of time for which a child may survive, exposed to hunger and cold, is uncertain. Instances are on record, which show a remarkable tenacity of life. A case is related,(*o*) in which a child, in the middle of the night, was thrown out of a window nine feet from the ground. It was still attached to the placenta. It fell upon a pavement which was covered with

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theoretical grounds, deny the reality of this accident. He also mentions the following instances of delivery under circumstances fitted to occasion it. In one a serving woman carrying a heavy burden on her head was seized with labor in the street, and the child was seen to fall from her upon the frozen ground. In a second case, both child and afterbirth were discharged simultaneously in the presence of witnesses. In a third the mother was getting into a high bed, having one foot upon it and one upon the steps leading to it, when the child fell from her. In a fourth, a female prisoner gave birth to a child which fell upon the floor, while she was dressing and in the erect posture. In a fifth, a married lady in her third pregnancy was thus unexpectedly delivered. Finally, a woman expelled her child while seated in a privy, and the infant fell upon the firmly frozen substances beneath. With such examples before us, concludes Casper, we may safely lay it down as a general law, that sudden delivery while the mother is in an erect posture is altogether possible, and that the child is susceptible of being wounded in the head, and even mortally. (Gericht. Med. i. 811.) For other illustrations, see §§ 402, 403; also, Lond. Times and Gaz. Jan. 1860, p. 98.

(*o*) Henke's Zeitsch. Erg. Heft. 31.

straw and dung. It remained there, naked and exposed to the night air (in the month of April), for three-quarters of an hour. It was then found, and lived twenty-four hours afterwards. It had received no injury from the fall.

A peasant woman delivered herself of a mature child, in the vicinity of a wood, on the 18th of August, 1842, and fearing discovery, she concealed it in the hollow of a tree, thrusting it, head forwards, into the portion of the cavity which led towards the root, so as to exert considerable compression on the body, doubling it up, as it were. She then laid two stones of three or four pounds' weight upon its buttocks, and concealed the hole in the tree with a larger stone. By a lucky accident, a passer-by, on the 21st, heard its moaning, and withdrew it from its prison, covered all over with fir spiculæ and ants. There were numerous contusions and lacerations upon different parts of the body. Its respiration, at first very rapid, soon became more tranquil, and, although much emaciated, it cried with some vigor, and very readily partook of food. Its temperature was normal. Any change of position called forth screams, due evidently to the pain of the various excoriations of the surface. It continued until the 25th to take nourishment, but the sores on the surface put on an ill character, and it died on the 29th. It seems almost incredible that life should have been prolonged during the exposure of this naked infant, without food, for three days and nights, the temperature of the air varying from 50° to 80° Fahr. Probably its close quarters within the tree protected it in some measure from cold; but the privation of food ought, according to the generally received opinions, to have proved fatal before the period of its discovery. Foderé states that danger to life is imminent after twenty-four hours; and, at most, that the infant can fast from one to two days only.(*p*)

§ 395. Cases of such long survivance are, of course, exceedingly rare. The judgment of the physician must therefore be founded not only upon an examination of the body, but also from concurrent evidence. He must be aware of the length of time the child had been exposed, and the temperature of the locality in which it was found, before he can rely with confidence upon the signs of death from cold. These signs are far from being positive, unless the child has been actually frozen. In this case the skin will be found of a purplish color, the hands and feet swollen, the nails blue, and the face of a bright red color. The brain is greatly congested, and the lungs and right cavities of the heart contain more blood than usual. When the body is brought into a warm place, it putrefies rapidly. The same remarks will apply in cases where death is supposed to have resulted from starvation. It is necessary to know approximately how long the child has been deprived of nutriment, before the absence of food from the stomach, and the general signs of death from this cause, can warrant the opinion that the child has perished for want of food. The signs usually given are, a shrivelled and wasted body, a pale and wrinkled countenance, expressive of suffering, and a dry, tough, and yellowish skin. The mouth, tongue, and fauces are dry, the stomach and intestines empty—the surface of the former inflamed in points, the latter distended with air—

(*p*) Brit. and For. Med.-Chir. Rev. Jan. 1850, from Henke's Zeitschrift, 1847, 3 H.

the heart flaccid, and the great vessels containing but little blood.(q) It is evident that a child may be given unsuitable food, or in insufficient quantities, with a view of destroying its life. Such a fact can hardly come under the cognizance of the physician in a criminal case, except in reference to the general effects of such treatment.

§ 396. (*b.*) *Suffocation.*—This word is used here to signify any means by which access of air to the lungs is cut off. It includes, therefore, death by smothering, heavy pressure on the chest, strangling, and drowning, as well as the purely accidental modes of death immediately after delivery. The general signs of suffocation are the same in these various cases; but if wounds have been inflicted upon the child, causing hemorrhage, or if it has lost blood from the navel cord, the signs alluded to will mostly disappear. They consist in congestion of the brain, but particularly of the lungs and right side of the heart, which are filled with dark blood.

Besides these appearances, which are common to asphyxia in the adult and in the child, there are in the latter, often observed, numberless sanguineous extravasations very much like petechiæ, in the pia mater, upon the pleura, surface of the heart, and the aorta. These have been carefully described by Casper and by Mr. Canton, of London, as occurring in children which have been overlain, or which have been intentionally suffocated. All the cases upon which these observations were founded, were subjects of judicial inquiry.

The *accidental* causes of suffocation are present after delivery. Frequently the woman, being either unconscious or unable to help herself, neglects to remove the child from the pool often made by the discharges in the bed. Lying in this, with its mouth downward, the child will perish from want of attention. Again, the membranes may interpose between its mouth and the air, or its mouth be so filled with viscid mucus, that unless some little help is given it, it may easily be suffocated. Children are often designedly or accidentally smothered under the bedclothes, in boxes, &c.

The following is a curious example of accidental suffocation of an infant. Mr. Llewellyn, surgeon, found the child dead; the tongue protruded, the face was very livid, and it had all the appearance of having been suffocated. He questioned the mother, and she told him she had dreamt that a mad bull was attacking her, and had squeezed up the child to protect it, and when she awoke, as she found the child cold, she called her husband. The child had been properly taken care of. The parents had three other children, were very industrious people, and kind to their children. The child was lying on her arm, and its death might very probably have occurred as she described it.(r)

If much pressure have been made upon them, the body and head will be found flattened, the eyes and lips remain half open, blood flows from the nose, the tongue protrudes, frothy mucus is present at the corners of the mouth, and the excrements have been voided. The limbs are generally extended, the skin is not uniform in color, and presents here and there violet ecchymoses, the lips look blackish, and the nails livid.

(q) Bock, p. 257.
(r) Brit. and For. Med. Chir. Review, Jan. 1855, p. 292.

§ 397. Sometimes the child is suffocated by stopping its mouth with foreign substances. Hence the necessity in every case presenting signs of suffocation, of closely examining the mouth and fauces, although, indeed, instances are not wanting where all traces have been carefully removed previously. A very interesting case is reported, in which the child was immersed living in a pot of ashes. The woman's confession confirmed the result of the medical examination, which showed that the child had been gradually asphyxiated. The ashes were found in the nostrils, mouth, fauces, and pharynx. There were none in the windpipe.(*s*) A case is reported by Dr. Littlejohn, in which the child was suffocated by dough forced into its pharynx and larynx; and another is quoted by the same writer, in which a plug of newspaper had been used to produce suffocation.(*ss*) Another case,(*t*) instructive in this connection, is also of interest from the uncertainty whether or not the child was living when the outrage was inflicted upon it. A child was found, in which the fauces, the upper portion of the œsophagus, the larynx, and the trachea, were tightly packed with a coarse greenish-black sand. At the same time the child's lungs evinced no sign of respiration, and sank to the bottom of the water when subjected to the hydrostatic test. While it is difficult to imagine for what purpose, if the child were already dead, the substance found so tightly wedged into the entrance of the respiratory passages and throat could have been forced there, it is no less strange that such an act of violence could have been perpetrated upon a living child, without its lungs showing signs of, at least, imperfect respiration. The case unfortunately remains without solution; but in whichever light it may be viewed—whether as an unaccountable act of violence after death, or an unique case of successful prevention of *respiration*—it cannot fail of being of great interest to the medical jurist. A child may also be destroyed by being exposed to noxious vapors, as those of burning charcoal or sulphur, the exhalations of privies, &c., and no trace will remain of the cause of its death, except, in some cases, the odor of the deleterious gas or vapor which destroyed its life. Cases bearing upon this point will be found in § 369.

§ 398. (*c.*) *Strangling.*—The marks of strangulation differ according to the means by which the violence is effected. As a general rule, more violence being used than is necessary to accomplish the purpose, distinct marks of a cord or of the fingers, with abrasion of the skin, will be met with. These marks will be irregular in shape and size, being either spots, furrows, or indentations, red or livid in color, with sometimes subcutaneous extravasation. In the absence of these signs, we may be at a loss to explain the manner in which suffocation was accomplished. But even if the marks spoken of exist, it may be alleged that they were produced accidentally by the umbilical cord, as we have before explained (§ 382), or, as some authors affirm, by the efforts of the woman to assist herself in her delivery. Such an idle assumption will frustrate the best medical evidence, if received, since the physician can only determine whether the marks are those of strangulation or not; he can seldom decide

(*s*) Ann. d'Hygiène 47, p. 460, 1852.
(*ss*) Edinb. Med. Journal, i. 521.
(*t*) Casper's Vierteljahrschrift, 1852, H. 2.

with certainty how they were made, and much less whether before or after complete birth and respiration. It is sometimes necessary to know whether the marks of strangulation could not have been produced *after death.* This, upon good authority,(*u*) may be answered in the affirmative, if the body be still warm when the constricting force is applied. The question as to whether the umbilical cord had been severed before the strangling was attempted, is of no importance in a medical point of view, since this circumstance will not in any manner affect the signs of the mode of death, and respiration may have been perfectly well established long before the cord is cut.

A case is related in the Lancet,(*v*) where a child, with the placenta attached to it, was buried in the ground, and covered one inch and a half deep with earth. It was found that at least half an hour had elapsed since the earth had covered the child, and yet when it was taken up, respiration was still going on.

§ 399. (*d.*) *Drowning.*—The signs of death by drowning in the new-born child, do not differ from those found in the adult, and elsewhere fully considered. Generally, however, children which are found dead in the water, have been thrown into it, for the purpose of concealing the body, after they have already perished by natural or criminal means. Hence it is not often that the peculiar signs of death by drowning will be met with, but in all cases where children are found dead in the water, search should be made for traces of other violent injury, and it should be especially noted whether respiration has occurred. If marks of violence are found upon the body, particularly fractures, they must be carefully examined for the purpose of ascertaining, if possible, whether they could have been accidentally produced by substances in the water, or whether they were not rather due to criminal violence, and inflicted during life. Such a question will very naturally arise, when, for instance, a large stone is found in the bag in which the child has been thrown into the water. A case of this kind has been reported in Henke's Zeitschrift. The general rules elsewhere detailed, by which a distinction may be made between wounds inflicted before or after death, are applicable here. If, for instance, there be found, under a contused wound of the scalp, an extravasation of blood; if, moreover, one or more fractures be found, and blood effused upon the cerebral membranes below them, the inference will be reasonable, that they must have been produced during the life of the child. These signs will not be affected by the submersion unless putrefaction has taken place.

§ 400. (*e.*) *Wounds.*—The general distinctions between wounds inflicted before and after death, are considered in the chapter on WOUNDS, Book V. Part II. The remarks there made, are equally applicable in the case of new-born children.(*vv*) Wounds inflicted upon them being very rapidly fatal, the

(*u*) Casper's Wochenschrift, 1837; Ollivier (d'Angers) Ann. d'Hyg. vol. xxix. p. 149.

(*v*) Am. edit. 1850, p. 513.

(*vv*) Wounds found upon a child may have been inflicted in utero, just as the fractures are which have already been referred to. Mr. Lynch (Brit. Med. Journ. and Abeille Méd. xv. 95) reports the case of a child born dead at the eighth month with a contused wound of the back, looking as if the skin and muscles had been violently torn from the occiput to the sacrum, and also as if the part had begun to heal. A week before the mother had met with a fall upon a piece of wood. In another case,

signs which show that they were made during life, drawn from the ensuing inflammation, rarely come under notice. The character of the blood effused is, however, a diagnostic sign of great value. If this is found coagulated, there can be little doubt that the child was living when it received the injury; but if, on the contrary, blood be found extravasated under the wound, or effused around it, and still remaining liquid, we may be equally sure that the wound was made shortly after death, and while the body was still warm. A recent observation by Ollivier d'Angers, will illustrate this fact. In this case the child was murdered before it had breathed, but while the circulation was still going on, as was proved by the examination of numerous wounds made by a cutting instrument in the back of the throat, as well as of other injuries. Coagula were found upon the orifices of the wounds. An incised wound may be accidentally inflicted upon a child by the knife or scissors, in severing the umbilical cord. When this happens, it will generally be found that the fingers or toes, or some part of the limbs, which have been suddenly elevated by the child at the moment of the incision, are injured. Where there is any suspicion of the wound having been produced in this way, the physician must carefully examine the situation, extent, and shape of it, and assure himself that the cord has really been cut, before assenting to the probability of this explanation. A peculiar mode by which the new-born child is often destroyed, is the introduction of pointed instruments, such as pins or knitting-needles, into the fontanelles, the ears, the nose, and between the vertebræ. In a superficial examination, these injuries may be overlooked. Hence, in doubtful cases, attention should be carefully given to this point. By dissecting out the suspected portion of skin, and stretching it against the light, the finest puncture can be detected. Sometimes a multiplicity of wounds is inflicted. The following cases will serve as examples. A young woman becoming pregnant, concealed her situation with great care. Her parents could not prevail upon her to acknowledge it, but it was finally ascertained by a midwife. She was confined alone. She seized a pocket-knife, thrust the blade into the child's head, back, abdomen and limbs, cut off its head, and concealed the bleeding fragments under her paillasse. She was soon discovered, and at first denied the crime. Afterwards she brought the knife to the mayor, and made no attempt to escape, but confessed the act, and ascribed it to despair at having been abandoned by her lover.(*w*)

A still more inhuman example of infanticide is reported by Prof. Toulmouche.(*x*) It was proved that Severine L—— had borne an illegitimate child, of which no traces could be found. The girl, who at first obstinately denied the charge, finally confessed the crime, and indicated to the medical officers the place where she had concealed its remains. She said that she had

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reported by Dr. Finnell, there existed a penetrating wound of the leg which he attributed to a stab in the abdomen below the umbilicus, received by the mother a week before her confinement, which was brought on by her injury. Immediately after the infliction of the wound, a gush of water followed by blood had taken place from the uterus. (New York Journ. of Med. Jan. 1860, p. 99.) A very remarkable case of fœtal wound is published in Med.-Chir. Trans. xxxii. 59, and several others of extreme interest are referred to by Dr. Montgomery, Signs and Symptoms of Pregnancy, 2d ed. p. 684.

(*w*) Ann. d'Hyg. 1851.

(*x*) Ann. d'Hyg. July, 1853.

been delivered at night, had suffocated her child, then cut it into pieces, the better to conceal it in the chamber vessel, which she then carried into the garden, and threw the contents into a dung-heap. With some difficulty the fragments were nearly all recovered, and placed in apposition. The head, thorax, and abdomen had been all separated from each other by a cutting instrument. The head was dreadfully mangled, the arms were cut off from the chest, and the forearms from them again, and many of the fingers also were separated. In like manner, the lower extremities were dissevered. The genital organs were separated completely. The lungs were of a rosy color, crepitant, and weighed two and a half ounces, with the heart and thymus attached. Being put into water, they floated, even after being subjected to enormous pressure. A portion, after being placed under a weight of 60 kilogrammes (132 lbs.), still swam. The heart and the bloodvessels were entirely empty of blood, and the substance of the former was very pale. From these, and the signs which indicated the maturity of the child, it was justly concluded that it was at term, had lived and breathed, and that its death was caused by the wounds inflicted upon it by a cutting instrument. Siebold(*y*) also witnessed a case somewhat like the foregoing, in which the mother, actuated by the usual motive, viz., fear of abandonment, destroyed her new-born child by cutting off its head. In this case, also, the hydrostatic test clearly proved that the child had fully breathed.

§ 401. (*f.*) *Dislocation.*—There have been examples of infanticide by dislocation of the neck. The discovery of the luxation requires no unusual skill in post-mortem examinations.(*z*) As the existence of other dislocations in children found dead, may give rise to a suspicion of criminal violence, it should be known that intra-uterine dislocations are occasionally met with. Dr. J. B. S. Jackson has described a complete upward dislocation of the head of the thigh bone, and a partial dislocation of the knee-joint, in an acephalous fœtus weighing two pounds and two ounces.(*zz*)

§ 402. (*g.*) *Unconscious delivery.*—It is frequently alleged, in defence of women charged with infanticide, that the rapidity of their labor, and the sensations attending it, were such, that they were not sufficiently conscious, at the moment of the expulsion of the child, to save it from danger. This defence is often made in those cases where the dead body of the child is found in a privy-well, or water-closet. Although, in many cases, the proof of delivery having taken place in the manner described, depends upon other evidence than that required of the physician, yet there are questions which he will be called upon to answer, relative to the probability of the occurrence, which will demand very careful reflection. At first sight, the fact may appear highly improbable, that a woman should possibly mistake the convulsive pains of labor for the ordinary sensation of a call to stool, or that any labor, however easy or rapid, could be accomplished without her being fully conscious of it. With due allowance for cases of wilful deception and of purposed wrong to the child, there remains sufficient evidence to show the possibility of unconscious delivery in this sense. As the child's head descends into the pelvis, the mother is often

(*y*) Henke's Zeitsch. 1845, p. 157.
(*z*) For a case in point, see Orfila, Med. Leg. vol. ii. p. 109.
(*zz*) Boston Med. and Surg. Journ. March, 1860, p. 127.

seized with an irrepressible desire to evacuate the bowels, and nothing is more common than for this evacuation to take place, in spite of all efforts to restrain it, at the very moment that the child is expelled. Hence, it is quite intelligible, that a woman in labor in the absence of proper advice, may seat herself upon the privy hole, or the night-stool, at precisely the most critical moment for the child. By a forcible pain, favored by a very yielding condition of the parts, the head may be abruptly expelled; the cord may break with the fall of the child, which may perish miserably, either by the injury received in its fall, or stifled with the filth into which it is plunged. The mother, exhausted and terrified, may be unable to prevent this catastrophe. Cases of this kind are related, of married woman and of others, where there was no attempt to conceal the birth, and no suspicion of criminal intentions.(*a*) An English lady in India was pregnant at full term with her second child. She experienced a very slight sensation, as if her bowels were about to be relieved; a feeling as if something had touched her body followed, and caused her to ask the attendant to lift the bedclothes, when to the surprise and alarm of both, the child was found entirely extruded. It was but slightly undersized.(*aa*) An equally striking case in which the escape of the child from the maternal parts was mistaken for an evacuation of the bowels, is reported by Ammeuille.(*b*) While a want of knowledge of the phenomena of labor, may plausibly account for the event in a woman with her first child, yet the greater rigidity of the parts, and the slower progress of the delivery in this case, render its occurrence far more unlikely than in those who have already borne children. It is said, that if the cord be found broken, instead of cut, it will confirm the story; but this circumstance is not conclusive, since it may have been broken by the hands of the mother, and the child afterwards thrown into the privy for concealmeat. In most cases, our opinion can be founded only upon the traces of blood at and near the alleged scene of labor, and upon the absence of conflicting testimony. The concealment of the fact of having given birth to a child will throw just doubt upon the woman's veracity, since, if the delivery were accidental, the natural presumption is, that the mother would have sought for immediate assistance.

Other forms of unconscious delivery do not possess the same practical interest as the foregoing. Women may be delivered in a state of insensibility, and, according to Dr. Montgomery, even during deep natural sleep: in such cases, the child may perish from want of attention, and in some one of the various ways before alluded to.(*bb*)

§ 403. Delivery may also be so *rapid*, although the mother is aware of being in labor, that she is unable to guard against an accident to the child. Mrs. B., of Quebec, aged thirty, married, and pregnant with her first child, was seized during the night with labor pains. After bearing them for a long

(*a*) For cases illustrative of this fact, vid. Henke's Abhandlungen, Bd. i. S. 49 ff. 2te Aufl.; Dr. Schnitzer (Med. Zietung d. ver. f. Heilk. in Preussen, 1839); Fleischmann (Henke's Zeitsch. 1839, 2 H.); Dr. Beck (Ed. Med. Jur. p. 317, note); Ricker (Henke's Zeitsch. 1843, 3 H. p. 197). Also note to § 392.

(*aa*) Dr. G. Smith, Brit. and For. Med.-Chir. Rev. Oct. 1857, p. 554.

(*b*) L'Union Méd.; and Phila. Med. and Surg. Reporter, March, 1860, p. 501.

(*bb*) See Rawson, Lancet, 1841; Schultze Ann. d'Hyg. v. 33, p. 216.

while, she requested a woman to give her some warm water to "set over," to relieve what she described as a great pressure at the lower part of her bowels. She had hardly seated herself upon the edge of a rather high chair, when a severe bearing-down pain seized her, and before any assistance could be afforded (although one or two women were in the room), the child was forcibly expelled, and fell, head foremost, on the floor, being killed upon the spot. When the physician arrived, about twenty minutes after delivery, the child, although dead, was still attached by the cord to the placenta, which came away shortly after the infant. In another instance, the wife of a clergyman, in labor with her *second child*, but not suffering from any pain, was suddenly seized with a strong bearing-down pain, and got up with the intention of walking into an adjoining room. Before she had proceeded more than a few yards, another pain threw the infant upon the carpet. The cord was ruptured near the umbilicus, but fortunately *did not bleed* from the fœtal portion. The child was not injured. A similar case is related by Dr. Larkin, of Wrentham, Mass., except that the cord was so long, that it was not broken. The mother broke it in two, and succeeded in reaching her bed-room, although much exhausted from hemorrhage. Both mother and child recovered.(*c*)

§ 404. (*h.*) *Poisoning.*—This form of infanticide is extremely rare. Dr. Taylor states, that the earliest age at which he has known a trial to take place for the murder of a child by poison, was *two months*. In this case, a quantity of arsenic was given to the child, and it died in three hours and a quarter after its administration.(*d*)

More recently, a woman destroyed her child, which was only *one day* old, by arsenic. She was tried, and acquitted upon the plea of *puerperal insanity*, although the evidence certainly did not warrant such a verdict. Mr. Justice Cresswell, at the close of his charge to the jury, "read the whole of the evidence, and at the close remarked that he was bound to tell them that there was undoubtedly no direct proof that the prisoner was otherwise than in her perfect senses, as no person saw her laboring under delusion or insanity."(*e*)

The defence in this case should suggest to the medical expert the reflection, that however palpable the fact of criminal agency may, in a case of infanticide, appear to him, and however complete may be the proof of the child having both lived and breathed, he can never be exempt from the mortification of hearing objections urged, entirely foreign to the case, and a defence set up which has merely an imaginary basis.

§ 405. (3.) *General Considerations.*—The reader will not fail to perceive, that in the considerations upon infanticide now presented, the author has not taken up all the objections which are usually urged against the various points in the medical evidence; to have done so, would not merely have unduly lengthened the chapter, but have presented the subject under an aspect of obscurity and difficulty which it really does not in itself possess. It has appeared to him that the simplest and most perspicuous mode of presenting the subject, was one in which it should be entirely divested of the trivial and

(*c*) Am. Journ. Med. Sci. Jan. 1846, quoted from various sources.
(*d*) R. *v.* South, Norf. Aut. Circ. 1834.
(*e*) Ed. Monthly Journ. Sept. 1852.

irrelevant objections which are often thrown around it, and which are by no means essential for a correct understanding of it.

The discussion of this subject may be appropriately concluded by some general considerations. In every case of suspected infanticide the following questions, says Böcker, arise:—

1. Did the death occur in a natural manner?
2. Could it have been prevented by proper precautions?
3. Is the mother guilty of not having employed them?
4. Was it caused by violence on the part of the mother?
5. If traces of violence exist upon the child, did the mother inflict them?

It must be admitted, however, that medical testimony alone is not competent in all cases to solve these questions, which can only be answered by a careful comparison of all the circumstances of each case.

It is a fundamental principle laid down by Henke that death by violence is by no means to be inferred from the fact that the child was born alive. Even where marks of death by violence exist, it does not follow that the child was murdered. In the former case it may have perished in consequence of some disease incompatible with its life, or have been suffocated by the caul upon its face, or by its lying in a pool of blood and water, or in a mass of feces, or under a limb of the mother while in a state of exhaustion or unconsciousness; or, in consequence of there being no help at hand, or of the unwillingness of the mother to betray her condition, the child may be suffocated, or may perish from exposure to cold, &c. While, says Casper, we refuse to be imposed upon by the "impudent lies" which women do not hesitate to tell to conceal their guilt, we should not forget that the dangers to new-born children are very numerous, and that, without any criminal intent upon the mother's part, the child may perish from any of the causes just mentioned, from an injury to the head, from constriction of the navel-cord or hemorrhage following its rupture, from falling into the privy or a close stool, &c. Even apparent marks of violence must be cautiously interpreted. Prints of finger-nails upon the head and face of the child may have been made by the efforts of the mother to extract the child after the birth of its head, and even a dislocation of the neck, under the circumstances, must be regarded as within the limits of possibility. But if the marks referred to should be accompanied by others which can only be explained by intentional violence, then the former must be more seriously interpreted. Yet it must not be forgotten that many marks of accidental injury are with difficulty to be distinguished from such as are feloniously inflicted. Care should also be taken not to confound these with marks which may have been made after death in recovering the body from cesspools, privies, and similar places, or which are merely signs of the voracity of fishes, hogs, rats, &c. In fine, the duty of the medical jurist, called upon to investigate cases like those under consideration, should be to preserve the strictest impartiality, to avoid being biassed by his sympathy with the misfortunes of the accused, upon the one hand, or, on the other, by his abhorrence of her imputed crime, and to endeavor to give its just weight, and no more, to every circumstance which the investigation brings to light.

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CHAPTER I.

DOUBTFUL SEX.

§ 406. The word *hermaphroditism*, which at one time was used to describe the union of the organs of both sexes in one individual, is now generally applied to all those cases in which doubts exist concerning the real sex, in consequence of some aberration from the normal type of the genital organs. The word can no longer be used in its original acceptation, for most certainly there is no authentic case of self-impregnation recorded, nor even of the association of the generative functions of both sexes in one person. The cause of these deviations from the usual form may be found in the earlier stages of embryonic development; but an exposition of the present state of medical knowledge relative to the processes of faulty evolution would here be out of place.

§ 407. The practical question which we have to determine is, how far is it possible to discriminate the true sex of a living person? The solution of it is attended with no little difficulty, and in some cases is indeed impossible. The physician will be chiefly embarrassed in the case of children, since the important indications derivable from the general as well as local sexual development will be wanting. It should not be forgotten that even after death a positive opinion is, in some cases of hermaphroditism, hardly warranted by the most careful anatomical inspection. The male and female sexual organs, imperfect in development although distinctive in character, may be so evenly distributed that it will not be possible to know which predominate. Or, on the other hand, the traces of sexual organs may be so indistinct, that we can give them no appropriate sexual name. Hence the reader will perceive how much more excusable is reserve in pronouncing an opinion upon the sex of a *living* person, the essential generative organs being concealed from our observation. We can only hope to approximate to the truth, by observing whether there is not some regularity in the freaks of nature, and thus discover, if possible, some uniform correspondence between the visible deviations and those which are hidden from our view. With this object, the cases of hermaphroditism may be divided into the *apparent* and *real*, besides which there is a certain number in which literally *no* sexual organs exist. In the cases of *apparent* or *false* hermaphroditism, either the male or female character predominates, but the former by much the more frequently.

§ 408. 1st. *Male Hermaphrodites.*—In these the only anomaly is external, the internal organs having their natural conformation and development. The penis exists, more or less developed, with an urethra either normal or opening at variable distances between the glans and the pubis—a condition which is called *hypospadias.* The scrotum is divided or cleft, and thus presents a resemblance to the vulva, but neither nymphæ or vagina are found, although not unfrequently there is a shallow depression or cul de sac between these false labia, which is lined with a delicate skin and bears no very distant resemblance to the vaginal entrance. The testes are found on each side of the divided scrotum. The history of a supposed female named Marie Rosine Göttliche is related, who had been in the practice of cohabitation with the male sex. Her genital organs were formed in the manner here described.(*a*) Nägele gives a case of twins who were considered as female until their seventeenth year. At this time it was discovered that they were male, the penis being imperforate, and the divided scrotum resembling a vulva, but containing a testis on each side.(*b*) The case of Adelaide Préville, who lived in the married state for a long time and on good terms with her husband, is related in full by St. Hilaire, with a number of other cases which will also fall under the above general description.(*c*) Persons with these malformations are not necessarily impotent, except where the urethra opens at or near the base of the penis. In consequence of the position of this orifice, the semen cannot be ejaculated into the vagina, but escapes along the sides of the cleft in the scrotum. Impregnation may, however, take place, if the urethra opens far enough forward to allow of the inclusion of its orifice within the vagina, and instances of impregnation by persons affected with a considerable degree of hypospadias are upon record. Sometimes the only deficiency observable in this class, is the absence of the testes from their usual location. This condition is liable to be mistaken for another, but far more important deviation from the natural type in the internal organs of generation (mentioned further on), since in both, the scrotum is empty. But, in this case, the testes are not really deficient but have remained in the abdomen, instead of descending as is usual in the ninth month of fœtal existence. In the case of persons in this condition, the power of procreation is unaffected, provided the testes are healthy. (Vid. IMPOTENCE.) This anatomical defect is very rare. Siebold states that of 37,000 recruits in Würtemberg, only twenty-four were found in whom the testes had not descended.(*d*)

§ 409. 2d. *Female Hermaphrodites.*—By far the greater number of these, owe the doubts concerning their sex to an unusual size of the clitoris. Commonly associated with this circumstance, are an unfeminine appearance, more or less beard, and a rough and masculine voice and manner; although the sexual desires of these persons are violent, they are usually barren. The usual length of the clitoris in the adult female is about half an inch, but Remer mentions having seen a clitoris an inch long in a girl seven years of age, and Home,(*e*) one of two inches long and as thick as the thumb, in a negress twenty-four

(*a*) Casper's Wochenschrift, 1833, No. 3.
(*b*) Siebold's Handbuch, p. 95.
(*c*) Hist. des Anomalies, t. ii. p. 53.
(*d*) Handbuch, p. 82.
(*e*) Philos. Trans., 1799, p. 163.

years old. In addition to this hypertrophied condition of the clitoris, an imperfect urethra with one or more openings is often found, and, at the same time, a constriction of the vagina to such a degree that it becomes almost imperforate. Such was the anatomical condition in *Marie Lefort;* she had menstruated regularly from the age of eight years until her death at thirty; the existence of a uterus was clearly established. Her voice was masculine, and she had a thick and strong beard.(*f*) Sir Astley Cooper examined the body of a charwoman, aged eighty-six years, who presented these deviations. He says, she differed from other women in the magnitude and length of the clitoris, in the absence of the external orifice of the vagina, which began in the urethra itself, and in the imperfect development of the ovaries.(*g*) A woman twenty-five years of age, on account of her notorious commerce with both sexes, was placed under strict police supervision. Resorting to masturbation, her health became so much impaired that she died in the course of sixteen months. The external genitals were found to have their natural conformation, with the exception of the clitoris, which was three and a half inches long and three inches in circumference, and imperforate, except at the base. The uterus and one ovary were rudimentary, and the general conformation of the breasts was masculine, although, owing to the occurrence of a trifling periodical discharge, she was considered to be a woman. It was proved that this person had been guilty of the most astonishing and unnatural excesses with young people of both sexes.(*h*) A child described by Mr. E. Smith, may be placed in the same class, as all the female organs were complete; the only anomaly being that the urethra opened in two places, and the clitoris bore some resemblance to the penis.(*i*) In a black female subject, dissected by Dr. Jno. Neill, the clitoris was five inches long and one inch in diameter, and resembled a penis, except that it was not traversed by a perfect urethra. The perineal opening was not larger in diameter than a catheter of average size, and the vagina was extremely narrow. On one side of the penis existed what appeared to be a scrotum, but which contained an irreducible omental hernia. This gave the feel of a testicle, but no true glandular structure or excretory tube could be detected. The internal organs were completely female, although not completely developed. The general habitus was feminine.(*j*) A very similar case is reported by Dr. F. L. Parker.(*k*) The subject of it was of the negro race, was regarded as a man, bred as a cooper, and had been married as a man. The genital organs were exclusively those of a female, except the clitoris which measured, after death, an inch and three-quarters externally, and in its entire length five inches. A perfectly analogous example in which the clitoris was from two to three inches in length, is reported by Dr. J. Mason Warren. The subject was of Irish birth, bore a man's name, and had a mas-

(*f*) St. Hilaire Hist. des Anomalies, t. ii. p. 74.
(*g*) History of a supposed Hermaphrodite, by Robt. Merry, Surgeon. Guy's Hosp. Rep., Oct. 1840.
(*h*) Henke's Zeitschrift, Bd. 44, S. 183, by Albert, of Euerdorf.
(*i*) Lond. Med Gaz. vol. xxxiii.
(*j*) Quarterly Summary of Trans. Coll. Phys. Philad., N. S., vol. i. No. 3.
(*k*) Charleston Med. Jour. Jan. 1859, p. 57.

culine appearance.(*a*) Dr. Bainbridge has reported the case of a female whose clitoris was five inches in length and of the diameter of the quiescent penis of an adult. This malformation was discovered while the woman was in labor.(*b*) Mr. Wells has described the case of the person in whom the general external organs were those of a hypospadic male; but there were no testes, and a small uterus and one ovary existed.(*c*) The case related by Dr. Mayer, of Bonn, which gave rise to much discussion, and which is usually classed among the cases of mixed sex, may with more reason, we think, be placed under this head. The only male organs were a (so called) penis, which was only two inches long, imperforate and partly concealed under the *mons veneris*. On the other hand, the orifice of the urethra was situated as in the female, there was a large vagina, a uterus with its appendages, and a defective ovarium on one side, and (what is called) a withered testis on the other. We cannot avoid holding some doubts concerning this last mentioned organ. From the absence of any account of the seminal tubes, deferent vessels, or seminal vesicles and the evidently rudimentary nature of this body, it might as properly have been termed an ovary. This supposition would, moreover, have been favored by its position. However this may be, it is evident that the female character greatly predominated. When twenty years of age, this person menstruated on three different occasions. A certain number of cases are recorded in which a prolapsed uterus, or an extroverted bladder has grossly imitated the male organ, but these cases are so easy of detection, and have so little claim to be classified with permanent anomalies of evolution in the sexual organs, that it is not necessary to dwell upon them.(*d*)

§ 410. 3d. *Real Hermaphrodites.*—Not a few authors have doubted the existence of persons entitled to this designation, but there can, at the present day, be no question of the fact. It is, of course, not meant that the union of the *functions* of both sexes in one individual ever occurs, but merely that the essential generative organs of both may coexist.(*dd*) It will be seen from the following cases that this abnormal condition is found in different degrees.(*e*) The first we will mention is the case observed by Petit, and communicated to the French Academy in 1820. The subject was a soldier who died of a wound at the age of twenty-two years. The penis was normal, the scrotum empty, the testes small and soft, occupying the position of the ovaries, but provided with epididymis and vasa deferentia. The seminal vesicles and prostate gland likewise were present. The uterus opened into the urethra at the neck of the bladder; the vagina was absent. It is stated that the Fallopian tubes were found, but they were probably in an imperfect condition.

(*a*) Am. Jour. of Med. Sci., Jan. 1860, p. 123.
(*b*) Lond. Times and Gaz., Jan. 1860, p. 45.
(*c*) Ibid., Feb. 1860, p. 177.
(*d*) For cases exemplifying these deceptions, vid. Saviard (Rec. d'Obs. Chirurg. p. 150). Home (Philos. Trans. for 1799). (Ed. Med. and Surg. Journ. vol. i. p. 54.) St. Hilaire (Hist. des Anomal. t. i. pp. 272–277.)
(*dd*) There is, however, no case recorded in which two testicles, and two ovaries, the essential indices of sexuality, existed in the same persons.
(*e*) A very remarkable case occurring in the 17th century is recorded by Dr. Thomas Allen (Philos. Trans. Abr. i. 24), and another, scarcely less so, is that of Hubert, who died 1767 (Dict. de Méd. xxi. 104).

A more recent case, described by two of the most eminent pathologists of Germany, Kiwisch and Kölliker, is of great interest. The individual died at the age of 33 years. The external genitals were, a perfectly normal penis, with a rugose but empty scrotum. The uterus was perfect, somewhat longer than usual, but in its ordinary position. The vagina was rudimentary, and opened into the prostatic portion of the urethra. The Fallopian tubes were $3\frac{3}{4}$ inches long, with imperfectly developed fimbriæ. The round ligaments had their usual position and attachments. In place of the ovaries were found testes, provided each with an epididymis and a deferent duct which led to the inguinal ring, and turning to the uterus, followed its sides and finally opened into the prostate gland. This latter body was of normal size; on each side of it were vesiculæ seminales.(*l*) MM. Bouillaud and Manec have reported a case in which the person attained the age of sixty-two years, and had lived and been married as a man. The general appearance was feminine, with the exception of the beard. The external organs consisted only of a penis with the orifice of the urethra at the base of the gland. A loose fold of skin occupied the place of the scrotum. The internal organs were, however, completely feminine, with the exception of the prostate gland, which occupied its usual position. The vagina opened into the membranous portion of the urethra. It is not stated whether the menstrual function was performed.(*m*) A curious and well described case is that of Ackermann.(*n*) An imperforate penis, a vulva containing a normal testis on each side, a common vagino-urethral canal, and vasa deferentia opening on either side of the os uteri, but entering the walls of the uterus at the points whence usually spring the Fallopian tubes. Perhaps the most remarkable case of double sex is that examined by Dr. Horace A. Ackley, Professor of Surgery in the Cleveland Med. College, and reported by Dr. George Blackman.(*o*) The person from whom the parts were removed was about twenty-six years of age, and had been employed

(*l*) Kiwisch (Klinische Vortraege Abth. II. Prag. 1849). This thoroughly authenticated fact of the coexistence of the prostate and uterus in one individual, is a serious blow to the cultivators of transcendental anatomy, who have maintained its impossibility. Weber, Leuckardt, and many other authors consider the prostate gland to be a rudimentary uterus, or rather the analogue of this organ in the female. Another example of the coexistence of these two organs, in a person 60 years of age, is furnished by Lauger. The uterus was attached to the upper part of the prostate gland, and there were two testicles (Archives Gén. de Méd., 5ème sér. viii. 720). An equally marked case (Hemaphroditismus lateralis) of the coexistence of an ovary and a testicle in a new-born child is recorded by Meyer, of Zurich (Virchow's Archiv. xi. 420).

(*m*) Journ. univ. et hebdom. de Méd. t. x. p. 467.

(*n*) Infantis Androgyni historia et iconographia. Jena, 1805.

(*o*) Am. Journ. Med. Sci., July, 1853, p. 63. Another singular case exemplifying the condition called lateral hermaphroditism, has been reported by Dr. Banon. The penis was of the usual size in the adult, and imperforate, although subject to erections. Beneath were the external female parts nearly perfect; the orifice of the urethra was placed as in the female, the vagina was rudimentary, but was provided with a hymen, the prostate was absent; the uterus was small, but well formed. There was one testis and one ovary, the vas deferens opened into the uterus. This individual had never menstruated, preferred manly exercises, and in conformation presented a curious intermingling of the characteristics of both sexes. Am. Journ. Med. Sci., July, 1852, from Dublin Med. Press; or fuller, Dublin Quart. Journ., Aug. 1852, p. 66. The somewhat similar case of Angelique Courtois, Follin. Gas. des Hôp., Dec. 1851, is more particularly interesting, from the fact that the single, well formed, and undoubted testis had no excretory duct, but lay under a pervious and fimbriated Fallopian tube. There were no ovaries, seminal vesicles, or prostate.

as a servant. "The history of this individual, as furnished by Prof. Ackley, is briefly as follows: Stature large; external conformation, with the exception of the hips, male; beard moderate; habits solitary, and had a dislike to women; menstruation, per penis, monthly; this was always attended with much suffering, and during one of these menstrual periods he died from cerebral congestion. After death, the body found its way to the Cleveland Medical College." Upon dissection the disposition of the sexual organs was the following: "The penis was large, the scrotum empty, a perfect uterus with pervious Fallopian tubes and ovaries, testes on each side above the ovaries and excretory ducts leading from them, a vagina opening into the neck of the bladder and a prostate gland." The inner surface of the vagina was reddened, and its cavity contained what was supposed to be menstrual blood.(*p*) This statement was afterwards supported by an examination of the parts made by Dr. W. L. Burnett, of Boston.

§ 411. The necessity, however, of the most minute and conscientious examination of such remarkable cases as this has since become apparent, for we find that the internal sexual organs were not so distinctive as represented. Dr. J. B. S. Jackson, of Boston, in addressing the Society for Medical Improvement on this subject, stated that he had been permitted by Prof. Ackley to examine the specimen. He found no trace of the os tincæ, but the uterus passed insensibly into the vagina. This last was extremely small, measuring in the smallest part, on the inner surface, not more than four or five lines in circumference. Dr. J. found some thickening of the tissues about where the ovaries should be, but it was ill-defined and slight; "and it would not have been thought of, except in connection with the present question." Upon one side an incision was made into this questionable part; but nothing like a Graafian vesicle was seen, nothing but a loose cellular, or fibro-cellular, tissue. The size and structure of the testicles, so far as examined, were quite normal, and, it is said, that there was an epididymis, although the existence of a vas deferens was not

(*p*) Other cases of menstruation through the penis, or from an orifice at its base when imperforate, are on record. One is reported by Dr. Harris, of Virginia, and another by Dr. Barry of Connecticut, in which it was necessary to determine the sex on account of a denial of the person's right to vote (Am. Journ. Med. Sci. 1847, July). Prof. Simpson, of Edinburgh, states, that he has been informed, on credible authority, of two instances where, in males,(?) the menstrual discharge was perfectly regular in its occurrence and considerable in quantity. One of these persons was seventeen years of age, the other had been married for several years, and his wife had no children. (Art. Hermaphroditism, Cyc. of Anat. and Physiol.) Dr. Blackman saw in the Northern Hospital at Liverpool, a sailor from the American merchantman Rappahannock. He says: "This person was about thirty years of age, and with the exception of the breasts, which were large, had the general appearance of a male. The penis, however, was short, and the scrotum somewhat cleft, so as to resemble in some respects the external labia of the female. At the time of my examination menstrual blood was passing through the penis, and we believe this was a regular monthly occurrence. (Am. Journ. Med. Sci., July, 1853.) A case apparently similar in anatomical conditions to that of Suydam, above referred to, is reported by Dr. Coste, of Marseilles. His patient was 21 years of age, the penis was of the size of a boy's of 12 or 14 years, it was imperforate and the urethra opened at its base. The menses flowed from this orifice at regular periods. There was no external orifice of the vagina, the perineum was covered with hair, the labia majora were rudimentary, and on the right side there was a body like a testicle. The habitus was feminine, and there was no beard. An operation was performed to make an artificial vagina, and eight months afterwards she was married.—*Med. Zeitschrift für Geburtzkunde von Busch, &c.*, 1836. Bd. 4, H. 2, p. 267.

clearly ascertained. The vesiculæ seminales were not found, and the prostate gland, Dr. Jackson says, had not been demonstrated.(*q*)

§ 412. 4th. *Absence of sexual organs.*—Siebold states that he has in his museum a child with no external genitals. Notwithstanding this, two testicles were found in the abdomen. This case is related in full in Faber's "*Duorum monstrorum humanorum descriptio anatomica.*" He also refers to another case of a child, three years old, in whom no internal generative organs were found, and externally only an urethral orifice.(*r*)

§ 413. The foregoing enumeration of anomalous conditions of the sexual organs will suffice, we think, to convince the reader, upon careful examination, that the determination of sex in a living person presenting any of those which are external, is attended with much difficulty, in consequence of the absence of a uniform correspondence between the outward and inward defects. It will also be seen from some of the cases, that reliance cannot be placed upon the general conformation of the individual nor upon the tastes and habits, since experience shows that the indications derived from them are often fallacious. Practically, therefore, the question must often remain unresolved, or be determined solely by the sexual predominance in the external organs alone. It may be observed, however, that the rarity of *real* duplicity of sex, or of the complete absence of the sexual organs, compared with the ordinary cases of presumed hermaphroditism, from the penis being imperforate, the testes not descended or the clitoris excessively developed, is so extreme, that the question will, in its legal relations, seldom require elucidation.

§ 414. In conclusion, we cannot forbear referring to an instance(*s*) in which an operation was performed with the object of depriving a child "of that portion of the genital apparatus which, if permitted to remain until the age of puberty, would be sure to be followed by sexual desire, and which might thus conduce to the establishment of a matrimonial connection." The child was three years old, had been considered a girl until the age of two years, when she began to evince the tastes, disposition, and feelings of the other sex; she rejected dolls and similar articles of amusement, and became fond of boyish sports. "There was neither a penis nor a vagina; but, instead of the former, there was a small clitoris, and instead of the latter, a superficial depression, or *cul de sac*, covered with mucous membrane, and devoid of everything like an aperture or inlet. The urethra occupied the usual situation(*t*)

(*q*) Am. Journ. Med. Sci., Oct. 1853. For other cases vid. Beck's Med. Jurisprudence, and St. Hilaire's Histoire des Anomalies, t. ii. p. 99.

(*r*) For similar cases vid. Ström in Svenska Lakaré-Saellskapets Handlingar, Bd. i. H. 1. Also in Am. Journ. Med. Sci. vol. ii. Also in Henke's Zeitschrift, Bd. 44, § 185. A still-born seven-months' child had no external genitals. A very singular example of this malformation is published by Goschler (Prager Vierteljahrs, 1859, iii. 89). It was presented by a man twenty-seven years old. There was no penis, but the mons veneris and scrotum were perfect, and behind the latter and just in advance of the anus, was a small opening which gave exit to the urine, and to sperm also when an erectile fleshy excrescence upon its edge became excited by friction.

(*s*) Case of Hermaphroditism, Involving the Operation of Castration, and Illustrating a New Principle in Judicial Medicine. By S. D. Gross, M. D., Professor of Surgery in the Medical Department of the University of Louisville.

(*t*) Whether this was the usual situation in the male or female does not appear; it was probably the latter.

and appeared to be entirely natural; the nymphæ were remarkably diminutive; but the labia were well developed, and contained each a well formed testis, quite as large and consistent as this organ generally is at the same age in boys." After mature consideration an operation was resolved upon and the testes removed. They, as well as the spermatic cords, are described as being *perfectly formed in every respect.* Three years after the operation the disposition and habits of the child had undergone a material change, and she took delight in all feminine occupations. The author proposes this example as a precedent in similar cases. We sincerely hope that it may not be followed. The operation removes merely the *external*, and in cases like this the very distinct evidence of sex, and hence only adds to the doubts of the rightful sexual character. It does not necessarily extinguish the sexual instinct, nor deprive the person of "his only incentive to matrimony," and, finally, in no way relieves him from the odium or aversion with which the malevolent or ignorant may regard him.

CHAPTER II.

SEXUAL DISABILITY.

§ 415. 1st. *Sterility.*—The causes of sterility are numerous. Many of them are known and some of them are curable; but there are also many altogether beyond the power of medical science to discover or remedy. Among the removable causes of sterility may be first mentioned an *imperforate hymen.* This membrane is sometimes quite thick, dense, and fibrous in its structure, opposing a complete obstacle to the passage of the catamenia, and rendering impregnation impossible.(*u*) It is remedied by incision and gradual dilatation. If the hymen be not, however, completely imperforate, impregnation may occur. Of this fact examples are recorded by Baudelocque, Nysten and others. A more recent case is furnished by Dr. Howard Smith.(*v*) The vagina may be, congenitally, extremely narrow, or have become occluded from inflammation and its consequences. The mouth of the womb is also subject to the same accident, and this, in connection with a narrowing of the upper portion of the vagina, is supposed to be a frequent cause of sterility. In all these cases, however, a cure is possible.

Menstrual irregularity, displacements of the uterus, with extreme irritability of this organ, prolapsus, intra-uterine tumors, such as polypi, are frequent causes of sterility, but are, also, generally under the control of the physician. Some authors have stated that uterine cancer is a certain cause of sterility; this opinion is, however, not sustained by facts, numerous instances being recorded of impregnation in this disease. Dr. Lever mentions several cases. Siebold says that he has, in his pathological collection, a cancerous uterus containing a seven months' child.

(*u*) For cases, see Brit. and For. Med.-Chir. Rev. xxi. 552.
(*v*) New Orleans Med. News, June, 1858.

tion was effected through the rectum, in which a small orifice communicated with the vagina. At the approach of labor, this opening was widened by the knife, and the woman was delivered of a child which lived six hours.(*e*) Mr. Hunt related to the Medical Society of London, the case of a lady, aged thirty, of refined mind and feminine development, who consulted him for stricture of the rectum. The meatus urinarius was more capacious than usual, and there was no *vaginal aperture*, the perineum being continued from the anus to the meatus. No trace of the fundus uteri or of ovaries could be felt by the rectum. The clitoris and labia were normal, the mammæ well developed, and sexual feeling was admitted to exist, probably in its normal degree. She had never menstruated, nor had there been any vicarious discharge or periodical inconvenience. Dr. Murphy mentioned a case in which the vagina terminated in a *cul de sac*, and there was no sign of an uterus. The woman was handsome and well formed.(*f*) A most curious, and we believe unique case is that recorded by Morgagni (67ème lettre, § 7), of a woman whose vagina opened in the abdomen *above the umbilicus*, and who became pregnant, and was delivered of a living child by a cutting operation from which she recovered.

Finally, there are some causes of sterility which are relative in their nature. Such a disproportion between the genital organs of the two sexes as to render intercourse extremely painful to the female, may be taken as an example. Other causes, of a psychical nature, are sometimes as operative as the physical impediments before spoken of. For the most part they are exceedingly intangible in their nature. In the *causes celèbres* an amusing instance of want of sexual harmony is given by Pitaval. Two gentlemen of rank, very much of the same age and personal appearance, were both married to wives who proved unfruitful after several years of marriage. The two couples at last determined to proceed to a celebrated watering place, in the hope of deriving some benefit from the change and the use of the springs. On the way, they put up at an inn and retired for the night. But the two wives had preceded their husbands to bed, and each of the latter mistook his friend's room for his own. In consequence of the mistake, both of the ladies proved with child.

§ 417. The functions of menstruation and reproduction are generally coincident. Hence, as a general rule, a female is not susceptible of impregnation before the catamenia have appeared nor after they have ceased. Like all other physiological rules, these will be found to have exceptions. Many instances are on record in which women who had never menstruated have become mothers.(*g*) Cases of precocious menstruation are also numerous, and many of them well attested.

Mr. Whitmore relates an interesting instance of precocious development in a female child. The catamenia appeared a few days after birth, and returned at regular intervals of three weeks and two or three days until her death, at the age of four years. The development at this age was equal to that usual at ten or eleven. The mammæ were unusually large; the mons veneris was

(*e*) Handbuch, p. 88. (*f*) Am. Journ. of Med. Sci., July, 1852, p. 275.
(*g*) Vid. Whitehead on Abortion, &c., p. 223; also Capuron, Méd. Lég. des Accouchemens, 96.

covered with hair, and the development of the genitals was considerable. It is stated that she manifested at her monthly periods the reserve usual to women at such times.(*h*) Dr. Charles Wilson, of Pennsylvania, met with a child five years old who had menstruated irregularly from the fifth month of her life. She was of the usual stature of children of her age, but very stout and fat. Her breasts were about the size of a well developed adult virgin's, and the pudendum was thinly covered with black hair.(*i*)

Velpeau quotes the case of a young girl, in the Havana, whose menses appeared at the age of 18 months, and continued regularly afterwards. The child, moreover, exhibited in her development all the characteristics of puberty. A girl at New Orleans was born in 1837 with her breasts developed and the mons veneris covered with hair. Her catamenia appeared at the age of three years, and continued to return every month thereafter. A case is mentioned in the Lancet where menstruation commenced at the age of two years.(*j*) Another is reported where it began in the tenth year; the girl became pregnant between the eleventh and twelfth, and bore a child.(*k*) A similar case is reported by Dr. J. B. Walker, in which menstruation commenced at the age of eleven and a half years, and the girl was delivered of a child when only twelve years and eight months of age.(*l*) Rüttel refers to a case by Haller, where a girl of nine years of age became pregnant; and D'Outrepont met with others of pregnancy at the ages of nine and thirteen.(*m*) Another instance may be added in which menstruation commenced in the first year and pregnancy in the ninth. The girl was delivered of a child weighing seven and three-quarter pounds. The case occurred in Kentucky, and is reported by Dr. Rowlett.(*n*) Mr. Smart has given an account of a girl who was born at Manchester, Eng., and began to menstruate at the age of three years and six months, and continued regularly to do so until the date of the observation, when she was four years and five months old. She had then the aspect of a woman of small stature, a full bust, prominent breasts and nipples, and hair an inch long upon the pubes.(*o*)

§ 418. The usual period for the *cessation of the menses* and, consequently, the capacity for child-bearing, is from 45 to 50 years; but cases could easily be multiplied showing that occasionally they continue even to the age of 75 years. Indeed, a case is quoted by Orfila in which they continued until the 99th year. This woman menstruated first at the age of 20, bore her first child at 47, and her seventh and last at 60.(*p*)

Many of the cases in which menstruation in old women is reported, are probably apocryphal—hemorrhage proceeding from some disorganized tissue being mistaken for it. Nevertheless, many of these instances of late menstruation and pregnancy are genuine. When the monthly periods continue to return after the ordinary time for their cessation, the female remains susceptible of impregnation, but she will rarely be capable of conceiving after this

(*h*) Am. Journ. Med. Sci., Oct. 1845, p. 430, from Ed. Month. Journ. of Med.
(*i*) Philada. Med. Exam., Dec. 1853, p. 746.
(*j*) Jan. 29, 1848.
(*k*) Lond. Med. Gaz., Nov. 1849.
(*l*) Bost. Med. and Surg. Journ., Sept. 9, 1846.
(*m*) Henke's Zeitsch. 1844.
(*n*) Transylvania Journ. vol. vii. p. 447.
(*o*) Times and Gaz., July, 1858, p. 98.
(*p*) Méd. Lég. 4ème. ed. 1, 257.

function has ceased. The only case we have met with is one quoted by Dr. Taylor, from the Lancet, in which a lady became pregnant between eight and nine months after the final cessation of the discharge. In this case, however, the lady was only 44, and consequently had not arrived at the usual season for its cessation. The discharge had, it is stated, been decreasing gradually for nearly two years before it entirely ceased. If this function continues, however, the woman is liable to conceive. Dr. Rüttel observed in twelve women that they bore their last children between the ages of 45 and 50. He refers to a case in Schmidt's Jahrbuch in which a woman who was married at 19 did not bear a child until she was 50 years old.(*j*) Ottinger and Cederschjöld met with cases of parturition and menstruation at the ages of 50 and 53; and Nevermann(*k*) found, out of 1000 cases, that 436 children were born by females at the following ages: 101 at 41, 113 at 42, 70 at 43, 58 at 44, 43 at 45, 12 at 46, 13 at 47, 8 at 48, 6 at 49, 9 at 50, 1 at 52, 1 at 53, and one at 54 years. From these facts, it is evident that the ordinary limits of the function of gestation are occasionally anticipated or transcended. Note must be taken of these rare exceptions in estimating the probabilities in any doubtful case.

§ 419. 2d. *Impotence.*—By this word is here meant the want of procreative power in the male, whether arising from a faulty condition of the external or internal organs of generation, or from any moral or physical causes. The causes of impotence are extremely numerous, and often obscure. Some of them are remediable by art and time; others are permanent, and incurable. They may be conveniently examined by a division into those which depend upon the secreting portion of the generative apparatus, and those which depend upon some deviation of the copulative portion from its normal condition.

(1.) *Congenital absence of the testes.*—The only satisfactory example of this defect, is a case related by Dr. Fisher, of Boston, in the twenty-third volume of the *American Journal of Medical Sciences.* The post-mortem examination was minute and careful. All of the accessary parts of the seminal apparatus were present, except the testes. The penis was undeveloped, and the individual, who was forty-five years of age, had never experienced any amorous desires. There were a few scanty hairs upon the pubes, but there was no beard; yet the constitution was vigorous, and the habits of the person active. It is seldom, however, that this deficiency can be safely asserted during life, for although the scrotum be empty, yet the testicles may have been retained in the abdomen. While in this situation, they may be rudimentary and defective, or not; for experience has shown that some *crypsorchides* have been remarkable for their sexual powers. One of the most remarkable cases of premature sexual development coinciding with non-descent of the testes, and reported by Dr. Lopez, of Mobile, in *American Journal of Medical Sciences,* 1843, p. 500, is that of a mulatto boy, aged three years, ten months and fifteen days. His weight was eighty-two pounds; height, four feet and half an inch; width around chest, twenty-seven and a half inches; thigh, nineteen inches;

(*j*) Henke's Zeitsch., 1844, p. 251. (*k*) Ibid.

head, twenty-two inches; length of penis at rest, four; circumference, three and a half: testes not descended; has whiskers, and hairy axillæ; and lifts a man of one hundred and forty pounds. The habit of body, scantiness of beard, and feminine voice, are not always safe indications of the absence of the testes, or of their defective condition, should they have been retained within the abdomen or in the inguinal canal. Our opinion in these cases should be very guarded, since the organs upon whose condition it is required cannot be inspected. In some cases, one testis only has descended; but if it be not diseased, the individual will be quite capable of fulfilling his conjugal duties. The rarity, however, of either of these conditions, may be judged from the fact, that in 10,800 recruits, Dr. Marshall found only eleven in whom a single testis had descended, and one where both were retained in the abdomen.

§ 420. (2.) *Castration.*—If one testis only be lost, whether by accident, disease, or extirpation, the virile powers will not be impaired, unless the remaining one be imperfect or diseased. But if the individual have lost both of these organs, he becomes, of course, incurably impotent. Yet it is a question of some medico-legal interest, whether impotence is an immediate result. A man who was castrated by Sir Astley Cooper, stated that he retained the sensation of emission for twelve months, and the power of copulation, at rare intervals, for ten years, after the operation. Otto found the vesiculæ seminales still full of semen in a man who died nine months after he had castrated himself.(*l*) Ricord mentions the case of a man who was castrated on account of disease of both testes; he was also affected with a tumor of the cerebellum. He had, nevertheless, erections, and the most violent sexual desires.(*m*) Krahmer relates that a man who had excised both testicles with a razor, had an involuntary emission of semen on the eleventh night after the operation.(*mm*) Some of the older authors(*n*) assert the possibility of fruitful intercourse after the loss of the testes, giving instances in illustration of it. It is also asserted, upon the authority of Aristotle,(*o*) Varro,(*p*) Sanchez,(*q*) and others, that animals have been known to be capable of propagation soon after they have been castrated. That the fact is authentic as regards animals may be admitted, without giving assent to the possibility of a like transaction upon the part of man. It is conceivable that an animal might attempt sexual intercourse immediately after castration; but the case has yet to arise in which the question of paternity would hang upon the decision as to the possibility of a man being capable of the same attempt.

For how long a time, then, after castration, can the faculty of generation be retained? We believe that this question has yet to be answered. The cases cited above do not solve it. The erectile faculty of the penis is retained in eunuchs, if they have been castrated after the age of puberty, and

(*l*) Handb. der Pathol. Anat. p. 344.
(*m*) Bull. de l'Acad. de Méd. 1851, p. 687.
(*mm*) Handbuch d. ger. Med. 1851, S. 276.
(*n*) Venette, Leipzig, 1698; Nic. Fontan, Obs. rar. Amstelod. 1641.
(*o*) Historia Animal. lib. i. cap. 4; lib. ii. 13.
(*p*) Re Rustica, lib. ii. cap. 5, "de quibusdam bovibus admirandum scriptum inveni, exemtis testibus, si statim adnosseris concipere."
(*q*) Sanchez, de Matrimonio, Lugdun. Batav. 1669.

is in itself alone, or when attended with sexual desire, not indicative of procreative power. Nor is the sensation of emission, or even the actual extrusion of a liquid having some of the sensible qualities of the semen, sufficient evidence of it. Unless a microscopic examination reveal the presence of spermatozoa, which alone are characteristic of the fruitful semen, there can be no certainty that the secretion is more than the *liquor prostaticus*, or a mucous discharge. The observation of Otto is, therefore, not complete. As for those instances in which pregnancy is said to have resulted from the cohabitation with their wives of husbands who had sustained the loss of which we are speaking, it is a matter of regret that the connection in them between cause and effect is not susceptible of demonstration.

§ 421. (3.) *Diseases of the testes.*—These are numerous, but usually implicate one of the organs only: hence, as has been said before, if the remaining testicle be not affected, or if, indeed, as is sometimes the case, only a part of the structure is destroyed, the person will not be rendered impotent. It will not be necessary for us to dwell upon the special diseases to which the testis and its appendages are liable. A safe opinion, in cases of alleged impotence from disease of the testes, can rarely be given, since it is impossible to know to what extent the true glandular structure is affected. The physician will probably be compelled to judge from the same facts which are equally open to others. In addition, however, to the diseases arising from inflammation and morbid growths, which are the most common, the testis is liable to become atrophied, from various causes. Thus, large double herniæ are said to have produced impotence by pressure, and the same is asserted of hydrocele. One or both testes may be attacked in the course of *cynanche parotidæa*, or mumps, and waste away in consequence. Atrophy of the testicle, and impotence, may sometimes be produced by mechanical injury to the spine or to the occiput. Both Larrey and Hennen mention cases in which, from blows with a sabre upon the occipital protuberance, impotence resulted. Dr. Fisher,(*r*) of Boston, had a case in which the loss of virile power was only temporary, after an injury of a similar character. Larrey states that many of the soldiers in the French expedition to Egypt became impotent from atrophy of the testes, which he ascribed to the use of date-brandy sophisticated with *solanum capsicum* or *pseudo capsicum*.

§ 422. In some cases, the inability to procreate, arises from some defect in the copulative organ.

(4.) *Defect in size and malformation of the penis.*—The general rule may be laid down, that if the organ be of sufficient size to be introduced within the entrance of the vagina, fecundation may be the result. Hence, except the penis be congenitally absent, or have been removed close to the pubis, the person is not necessarily incapable. In case of hypospadias or epispadias, *i. e.*, where the orifice of the urethra is either below or above the organ, at some point of its length, the individual may become a father, if the orifice can be brought within the female parts. Cases proving this fact satisfactorily, are reported by Foderé, Belloc, Kopp, and others;(*s*) in some of which instances

(*r*) Am. Journ. Med. Sci. vol. xxiii.

(*s*) Beck's Med. Jur. vol. i.

the malformation was transmitted to the children. A very interesting case of this nature is reported by Traxel.(*ss*) An unmarried woman, at her confinement, deposed that for three years she had not cohabited with a man, but only with a female whose sexual organs bore some resemblance to those of the male. On examination, this person was found to present the following peculiarities. A scrotum was divided in the middle, and on either side contained a testicle. Between its two halves there was a fissure lined with a mucous membrane, and presenting at its upper angle and below the penis the orifice of the urethra. The penis was short, thick, and imperforate, and, along its under surface, in the natural position of the urethra, was a deep furrow extending from its root to its extremity. The new-born child presented the same malformation precisely. In this case it is evident that during coition the open urethral furrow was transformed into a canal by the apposition of the vaginal membrane, and conveyed the semen to the uterus. The person hitherto regarded as a woman was judicially ordered to assume man's clothing, provide for the support of the child, and declared capable of contracting marriage. This defect is also, in some cases, curable by an operation. Examples of bifid penis,(*t*) and cases in which this organ had an unnatural attachment to the abdomen(*u*) and to the scrotum,(*v*) are to be regarded rather as medical curiosities, than as likely to give rise to practical difficulty in legal relations. The same may be said of an excessive size of the penis.

§ 423. (5.) *Obstruction from large hydroceles, or herniæ.*—This is sometimes an effectual hindrance to copulation, if voluminous. A case is related where a man of fifty-one years of age, who had been affected with a scrotal hernia for nine years, was nevertheless able to beget children, since, in the horizontal position, the tumor became a third smaller, and allowed the protrusion of the penis.(*w*) An interesting case is related in Henke's Zeitschrift, in which the paternity of a child was attributed by the mother to a married man of sixty years of age. It was represented, in his defence, that he was affected with a double scrotal hernia of ten years' standing, which rendered the sexual act impossible, since the penis was almost entirely concealed by the immense tumor, measuring in circumference 18½ inches. A very careful examination and report was made by the official surgeons; they declared that this state of the parts did not hinder the act of coition, since the tumor was of such a yielding nature as to allow, by proper manipulation, of the sufficient protrusion of the organ.(*x*)

(6.) *Local relaxation.*—Constitutional causes often impair the sexual power, not only by rendering the seminal secretion inactive, but by destroying the ability to copulate. Excessive abuse of venery, and the vice of masturbation, are the most frequent causes of that local relaxation which often con-

(*ss*) Prager Vierteljahrs., 1856, 4tes Bd. Anal. p. 103.
(*t*) Ephem. Nat. Curios. Dec. 1, Ann. 1, Obs. 110, Dec. 3, Obs. 77; Sixtus D. de diffusione genitalium, singulari penis bifidi observatione illustrat; Kopp. Jahrbuch, vii. p. 386. The preparation is in the Anatomical Cabinet in Würzburg.
(*u*) Schurig, Spermatologie, p. 134.
(*v*) Cheselden's Anatomy, p. 314; Brand. Ed. Encycloped. Art. Hermaphrodites.
(*w*) Pyl's Aufsätze, Sammlung viii. s. 204.
(*x*) Band 44, s. 379.

stitutes an insuperable obstacle to sexual intercourse. If impotence be ever caused by the use of colchicum, nitre, camphor, dulcamara, and other drugs, as is alleged, the defect will be, most probably, only of a temporary nature.

§ 424. (7.) *Psychical causes.*—These are, in some cases, hardly explicable by the individual himself. Cases are on record in which, notwithstanding the existence of proper sexual feelings on the part of the husband, he has been unable to accomplish that part of the act which is essential to impregnation. Devergie relates a case of this kind.(*y*) Another one is given by Dr. Strecker.(*z*) In both cases, the husbands had the sensation and the knowledge of emission with other women. In one of these cases, this circumstance was attributable to indifference on the part of the female. Generally, where relative impotence exists, it will depend, in the absence of physical causes, upon some prejudice or passion. Excessive sexual desire will sometimes defeat its own end; and on the other hand, too great timidity, or disgust and aversion, may prove causes of impotence. We need hardly add, that they are often but temporary in their nature.

(8.) *Want of age.*—The seminal secretion is established at the age of puberty, which is about the fifteenth year in temperate climates, and ceases at no determinate period. The establishment of this secretion is marked by familiar changes, both local and general. The genital organs become developed, hair appears upon the pubes and under the axillæ, the beard becomes apparent, the voice more grave, and the muscular system developed. Curious instances have been reported, in which there has been unusual sexual precocity. The most astonishing of these, is one related of Professor Stone, of Washington.(*a*) The child was only *four* years old; he was four feet and a quarter of an inch in height, and weighed nearly seventy pounds. His bones and muscles were developed in an extraordinary degree, his voice was grave, and the pubes was covered with a luxuriant growth of hair. The penis measured, in a semi-flaccid state, four and a quarter inches in length, and when perfectly flaccid three and a half inches. The prepuce was short, leaving exposed a perfectly formed glans penis. The papillæ of the corona glandis were salient, and exquisitely sensitive. In the scrotum were two firm, apparently well-developed testicles, perhaps rather under the average size of those organs in the adult. The spermatic cords were distinct, and, under the finger, gave the impression of perfect organs. His father having observed "during the night, when he had slept with him for the first time, a constant erection of the penis, accompanied by a nickering, like an excited stallion," consulted Dr. Stone concerning him. The boy was said to be extremely fond of embracing the opposite sex, and on one occasion, when in a bed with a near relative, a married lady, the latter was aroused by finding him closely clasped to her back, and her night-dress saturated with a very different and glutinous material from that she expected, as she supposed he had emptied his bladder upon her. The reporter had no opportunity of examining the secretion with the microscope.

(*y*) Méd. Légale, Nullité de Marriage.
(*z*) Henke's Zeitschrift, 1840, 1 H. p. 223.
(*a*) Am. Journ. of Med. Sci. Oct. 1852.

Dr. Rüttel observed a case in which a girl of fourteen became pregnant by a boy of the same age.

M. Ruelle, of Cambria, has recorded an example of precocious virility. A child three and a half years of age, muscular and strong as one of eight, had all his male organs of the full adult size, with long black hair on the pubes, and, under excitement, discharged semen four or five times daily. He had also a full male voice, and dark short hair on the cheek and upper lip.(*b*)

§ 425. Old age is usually attended with impotence, but there is no fixed period at which, either medically or legally, a man must cease to be capable of begetting children. Mr. Curling has found the spermatozoa in the semen of men at sixty, seventy, and even eighty-seven years of age, and Casper in a man of sixty-nine. Parr is said to have become a father at the age of 140 years; and quite a sufficient number of instances are known, to determine the fact of the occasional retention of virility much beyond the age of sixty years. The preservation of this faculty coincides with a vigor and haleness of constitution which is the lot of but few aged men.

CHAPTER III.

RAPE.

§ 426. Medical evidence in cases of rape, is seriously affected by circumstances over which the physician can have no control. One of the most important of these is the want of an examination at a *sufficiently early period* to afford useful results. In genuine cases, where rape has been really attempted, the local marks of violence are often extremely insignificant, and consequently soon disappear. A slight contusion of the genitals, a laceration of the hymen, or a trifling discharge of blood, are the sole indications of the transaction, and may, within forty-eight hours, be no longer present. Hence, it is seldom possible for the medical examiner to make any useful note of "the marks of violence upon the person, the disorder of the clothing," &c., which are usually prescribed by authors. The dress has been smoothed or changed, the marks of injury have disappeared, and all that remains is perhaps a suspicious stain upon a chemise, *alleged* to have been worn at the time of the assault. It is stated by a celebrated author, who has had much experience of such cases (Casper), that in fifty-eight cases which he had been required to examine, the time that had elapsed from the alleged commission of the rape varied from three weeks to one year. In connection with the injuries above alluded to, the victim of rape, particularly if young and a virgin, often manifests by her manner of walking, *i. e.* by keeping the limbs separated, that she suffers pain in the genitals. She is also apt to complain of pain in passing her urine or in going to stool. These signs are naturally most conspicuous immediately after the act of violence, and, apart from aggravating causes, may be expected to decline from day to day.

(*b*) Brit. and For. Med. Rev. Jan. 1844, p. 277.

§ 427. 1st. *Rape upon Children.*—We propose in the present article to refer a good deal to the experience of Casper, believing that the subject will be more profitably illustrated by authentic cases, than by theoretical discussions. There is no subject upon which it is more necessary for the physician to be guarded in his opinion than this; since he may be designedly entrapped into an admission, entirely at variance with his real view of the case.

Thus—a tradesman of irreproachable character was accused by a woman of having violated her daughter, who was but eleven years of age, and of having communicated to her a gonorrhœa. The child was of a very scrofulous constitution. The labia majora were separated and flaccid, the clitoris unusually developed, the entrance of the vagina inflamed, and painful to the touch, and the hymen obviously stretched. There was also a copious urethral discharge. The opinion given by Dr. Casper was, that a complete penetration had not taken place, but efforts by the male organ, affected with gonorrhœa, had been made to effect it. The further progress of the case showed the truth of this opinion but not of the accusation, for the defendant was found perfectly free from disease, and the cross-examination developed the fact, that the mother, after having fruitlessly endeavored to extort money from the tradesman, had delivered the child to her own paramour, a journeyman living in the same house, whom she knew to be affected with gonorrhœa. She then threatened to denounce the tradesman, unless he gave her money.

§ 428. In thirteen cases of alleged rape on children from two and a half years to fourteen, he found, upon examination, nothing whatever to support the accusation, as the sexual parts were in a perfectly natural condition. Yet many of these cases had been previously examined by physicians, and were provided with certificates attesting various degrees of injury. In two cases the accused parties were also said to exhibit unmistakable traces of the previous existence of chancres. Dr. Casper ascertained that the children were wholly uninjured, and that the presumed venereal cicatrices were perfectly natural appearances.

§ 429. It is also important to know, that it is by no means easy to ascertain the condition of the hymen, especially in children, who present a majority of the cases. There are two reasons for this. 1st. Where the outrage has been really committed, the tender parts of the child become so sensitive in consequence of their inflamed and swollen condition, that they will not bear the slightest touch, much less a separation of the labia; the child becomes so uncontrollable, that it is often necessary to give up entirely the examination without attaining the desired end, and this repeatedly, if the physician happen to be inexperienced, or unless an anæsthetic is administered.

§ 430. The second reason is based upon the variety of structure presented by the hymen. It is not always crescentic, but frequently is attached all round to the vagina, having a circular hole in the centre. This free edge is sometimes swollen and loose, and is then particularly deceptive. It varies a great deal in thickness and firmness. Its place of insertion also varies, it being sometimes attached near the entrance of the vagina, and at others so far back that it is found with difficulty, especially under the circumstances before referred

to. "For these reasons," says Casper, "the cases are explicable, which I have so frequently met with, where a previous medical or surgical examiner had certified that the hymen was absent, when I myself have afterwards found it entirely uninjured."(c)

In order to have a clear understanding of medical evidence in cases of rape, the subject may properly be considered under the divisions of, 1st. *Rape upon Children.* 2d. *Rape upon Adults.* We here refer, however, only to the outrage upon persons of the female sex, the crime in a contrary sense will be considered hereafter.

§ 431. 1st. The *frequency* of attempted rape upon children has been lately shown by Casper. Of one hundred and eleven cases of rape which he had examined up to the close of 1856, seventy-eight were children under twelve years of age, and seventeen between the ages of twelve and fourteen. It is probable that very nearly the same proportion might be observed in other places if proper statistical inquiry were made. This frequency may be accounted for by the comparative ease with which a child's resistance may be overcome, and by its entire ignorance of the nature and consequences of the sexual act. We may also mention here, that the author above quoted refers it, as well as the superadded disgrace and misery of venereal infection, to the prevalent superstition among the lower classes in his country, that connection with a pure virgin will cure a person affected with this disease, and hence, for the sake of certainty, the youngest children are chosen as victims of this revolting crime.(d) Casper found syphilitic gonorrhœa in thirteen girls from five to fourteen years of age. One of them, aged only five years, had moreover venereal warts, and in a child of three years of age he found a primary chancre.

§ 432. The traces left after an attempt at sexual connection by an adult with a girl under the age of puberty, vary somewhat with the *age*, but more still with the degree of violence and the frequency of its repetition. A full and complete connection between an adult male and a child under twelve years of age, is, on the first attempt, manifestly impossible; repeated efforts, however, will produce such a dilatation of the parts, as to render it finally practicable. A case, where the vagina of a child, seven years of age, became by degrees sufficiently dilated to admit the adult male organ completely, is mentioned in Canstatt's Jahresbericht for 1851. But in the majority of cases the penetration is but partial, and in some cases the chief injury has been inflicted by the use of the finger. The truth of this statement is shown by the fre-

(c) Casper, loc. cit.

(d) The supposition exists in other countries. Mr. Wilde, of Dublin (Med. Times and Gaz. Sept. 10, 1853), says: "A delusion prevails very extensively among the lower orders in Ireland, to the effect that a man can get rid of an obstinate gonorrhœa, which has 'foiled the doctors' by having connection with a virgin, and as the easiest mode of effecting that object, a child of tender years is selected." He states also that he had been informed by Dr. Montgomery that he knew a case in which a servant woman, affected with gonorrhœa, induced a child to have connection with her, in the hope of thus curing herself. From the work of Duchesne on the prostitution of Algiers, we learn that "the Arabs believe that the syphilis may be transmitted to a negro female, the individual thus transmitting it becoming free from the disease."

quently uninjured condition of the hymen. In fifty-one cases of rape upon children, many of them under fourteen, complicated with syphilis, Casper found the hymen destroyed only seven times in those between nine and fourteen years, and twice slightly torn in children of nine and ten years of age. In all the remaining cases, viz., *four-fifths of the whole number, it was entirely uninjured.*

The usual *marks of violence* left after the attempt upon children, are a swollen condition of the labia-majora, together with an inflamed and painful state of the vaginal entrance, and a secretion from these parts of a muco-purulent discharge. There is also pain in urination and defecation.

This condition may be illustrated by a case where a child ten years of age was assaulted by a man aged thirty-eight; the following signs were found immediately afterwards. The nymphæ swollen, of a dark red color, and very painful, the hymen torn into three parts, the vaginal entrance free, but of a deep red color as far as the attachment of the hymen. The child was feverish and had pain in and after urination. Spots of blood were found on the under garment. In the course of a week the hymen was healed, but not united, the swelling subsided, but there remained a muco-purulent discharge for about two weeks.(*e*) A yet fuller illustration is presented by the case of a child under seven years of age ravished by an adult. It is reported by Dr. McKinlay.(*ee*) At the upper part of the cleft of the buttocks, behind and above the anus, the skin was besmeared with dried blood. The vagina was lacerated in various directions. One laceration extended down to the verge of the anus, laying bare the rectum, and others upwards and laterally. In the cavity produced by the laceration was some fecal matter which had escaped from the rectum through an opening an inch in length, and situated three-quarters of an inch from the verge of the anus. The child gradually recovered in spite of these frightful injuries.

If gonorrhœa or syphilis have been communicated, there may be, in addition to these marks of injury, an urethral discharge, chancres, condylomata, and, if sufficient time have elapsed, buboes and constitutional symptoms. We subjoin here a few cases, showing the appearances we may expect to find in children, upon whom rape has been attempted.

X., a man of leisure, was accused of having repeatedly misused three sisters, Agnes, aged 12, Clara, 11, and Antonia, 8. In all three the hymen was destroyed; in the two elder, the vaginal canal uncommonly widened for their age, but not in the youngest. The opinion given was, therefore, that all three of the children had been deflowered, but that it was probable that the youngest had been masturbated with the finger. The evidence of the children, and some witnesses, gave all the details of this filthy transaction. Several more cases of an exactly similar character are given; we will, therefore, not repeat them. In the following case the whole proceeding was seen. Ottilia, aged ten years, still retained her hymen, although this was inflamed and relaxed. The vaginal entrance was dilated, irritated, and very sensitive. An old man of not less

(*e*) Keller. Casper's Vierteljahrschrift. V. Band. 1 H. 1854.

(*ee*) Br. and For. Med.-Chir. Rev., Oct. 1859, p. 535. A very similar case, which ended fatally, is reported by Mr. Colles, Med. Times and Gaz. June, 1860, p. 560.

than sixty-five years, had, it was said, often abused the child, having first enticed her by the present of a silver penny. On the last occasion, when he was discovered, the act took place in a barn, and a witness observed it through the chinks of the wall. The opinion of Dr. Casper, founded merely upon the condition of the child, was that a complete penetration had not taken place. A journeyman baker, affected with gonorrhœa, was accused of rape upon a child seven years of age, of healthy constitution. The child, examined one month afterwards, was found to have the hymen uninjured, but had gonorrhœa, and the mucous membrane of the vaginal entrance in an inflamed condition. Hence the opinion was given that the condition of the child was due to an *attempted*, but not completed, coition by a man affected with gonorrhœa. Eight other similar cases are given. Another instructive case is the following. The girl was fourteen years of age. The labia-majora were relaxed and inelastic, and did not cover the vaginal entrance as they do in the virgin state. The orifice of the vagina was dilated, particularly in the lower portion. The opening of the hymen, which was itself not destroyed, was unusually large, and the vaginal mucous membrane very red and inflamed. The hymen and clitoris were swollen, and there was also gonorrhœa. The defendant, a bookbinder, who was charged with having frequently had connection with the young girl, as well as others who visited his shop to buy writing materials, represented that he had merely used manipulations with his hand. Dr. Casper, in reply to the question put by the judge, stated that "it was improbable that the defendant had merely manipulated with the hand, since the dilation of the vagina was adverse to this opinion, and that masturbation merely could not induce so much inflammation, nor the urethral gonorrhœa which was present. Hence it was to be presumed that the defendant had at least *endeavored* to introduce his organ into the vagina." A case happened in London in 1858, and is related by Dr. Taylor,(*f*) of a girl of seven years, violated by a boy under seventeen years of age. There was complete destruction of the hymen, and slight laceration of the perineum, but no other marks of violence. Very profuse bleeding had saturated the girl's clothing, but no trace of blood was found upon the boy's clothes or person; and it was inferred, therefore, that the bleeding was an after effect, and a result of oozing from small bloodvessels. Had not the proof of the crime been complete on other grounds, this circumstance would have rendered its commission by the accused improbable.

§ 433. A case of genuine rape, with syphilitic infection, gave rise to an indictment against a journeyman hatter, who had abused his master's daughter in the most shameful manner. "The girl was only eight years of age, her private parts were very much dilated, and the mucous membrane, particularly at the entrance, very red and painful to the touch. The hymen was destroyed, and she had a virulent gonorrhœa." Dr. Casper gave his opinion, "That there was no room for doubt that an impure coition had taken place, and been really consummated. It was afterwards discovered that the accused was affected with gonorrhœa. But on account of his obstinate denial of the charge, and his endeavor to escape conviction by assigning other reasons for the infec-

(*f*) Med. Jurisp. 6th ed. p. 697.

tion, the judge proposed the question, if the common use of an *unclean chamber utensil* could possibly be the means of conveying the gonorrhœal disease. The answer was, that this was possible, but that such an origin of the disease could not properly be assumed in this case, on account of the destruction of the hymen, and the dilatation of the vaginal canal.

§ 434. There can be no doubt of the occasional transmission of gonorrhœa by other means than sexual intercourse; but it is important for the physician to keep in mind the fact, that *in the case of children* at least, the presumption is entirely in favor of the ordinary mode of infection, unless the signs of violence before enumerated do not exist. Dr. Ryan,(*ff*) nevertheless, examined two children who were infected with gonorrhœa by using a sponge belonging to a servant girl who had the disease. Mr. Hamilton(*g*) has published a case, in which a girl six years of age was infected with syphilis by a boy of nineteen. The contagious matter was carried by the fingers. In Henke's Zeitschrift for 1850,(*h*) the details of a judicial examination of a somewhat similar case, where also the virus was conveyed by the finger, are given by Dr. Henrich, of Mayence.

§ 435. *Leucorrhœa* and gangrenous inflammation of the vulva are diseases which often arise *spontaneously* in young children, especially of the poorer class, and are due to bad diet, uncleanliness, scrofulous taint, and epidemic influences. In the minds of anxious relatives they may awaken suspicions of violence with intent to commit rape, and sometimes form the occasion for criminal prosecutions against innocent persons, for the sake of gain.

Leucorrhœa may be easily mistaken for gonorrhœa, for the discharge in the two diseases is nearly similar, and the local symptoms so much alike as to render a positive opinion, in legal cases, rather hazardous. And yet, it is apparent, that the truth of the accusation may depend upon the determination of this difference alone. A case in point is furnished by Capuron.(*hh*) A little girl had a whitish and very acrid discharge from the vulva; the labia majora and mons veneris were red, swollen, and painful; there were several ulcers, with a secretion like that from the vagina. The parents regarded the affection as syphilitic, and believed that their child had been deflowered; but Capuron recognized the symptoms as belonging to a catarrhal affection which then prevailed in Paris, and by means of an appropriate regimen speedily effected a cure.

According to Churchill,(*i*) "The commencement of the disease (infantile leucorrhœa) is marked by local uneasiness, itching and scalding on making water; the mucous membrane is found inflamed and swollen, but for some time there is no discharge. * * At a more advanced stage there is observed a thin, colorless, mucous discharge, which slowly becomes more copious, thicker, and of a white or yellowish color. It is often of an acrid character, and causes a circle of inflammation, and sometimes of excoriation of the skin at the margin

(*ff*) Lond. Med. Gaz. vol. xlvii. p. 744.
(*g*) Dublin Med. Press, vol. xx. No. 511, 1848.
(*h*) Erg. Heft 41.
(*hh*) Briand, Méd. lég. 6ème éd. p. 77.
(*i*) Dis. of Females, p. 35.

of the vulva. If the labia be separated, the mucous membrane will be found more vascular, and of a deeper color than usual; but in very few cases does this extend up the vagina. * * Under ordinary circumstances the disease is neither very tedious, nor very obstinate, and after running a certain course, it terminates in resolution."

This description, with the exception of the last sentence, would answer equally well for gonorrhœa, the only reliable point of difference being the obstinacy and indefinite course of the latter.

In the case before referred to in Henke's Zeitschrift,(*j*) the virulent character of the discharge from the private parts was settled by the unmistakable gonorrhœal ophthalmia which the child brought on by touching her eyes with her soiled fingers. As the existence of gonorrhœa in a child, in the vast majority of cases, presupposes a criminal attempt, the proof of the former is merged in the proof of rape.

§ 436. Where, however, there is found *leucorrhœa, i. e.*, a simple mucous vaginal discharge, without any signs of violence, such as contusions, lacerations, dilatation of the orifice of the vagina, or injury of the adjoining parts, it may still be doubtful whether these marks of violence have not existed *previously* and disappeared, or whether it has had a spontaneous origin. This is a question which can only be answered from a knowledge of the time elapsed since the alleged injury. Where it results from mechanical violence, the discharge is at first mixed with blood, owing to the laceration and distension of the parts, and afterwards changes its character, becoming thick and yellow or thin and albuminous, according to the degree of inflammation and the influence of treatment, but is not as copious as where the disease is of spontaneous origin. But the leucorrhœa of children is *never bloody*, and, of course, no marks of mechanical distension or of laceration will be found at any period of the disease. In conclusion, it may be remarked that the leucorrhœa of children is quite a rare affection, so much so that no mention is made of it by some of the best authorities.

Mr. Kesteven, of London, in the *Medical Gazette* for February 28, 1851, has recorded a case and attached thereto some practical and useful observations, from which the following is an extract. With reference to the physical indications of chastity, the medical opinion upon which, he says, may be divided into two classes, the public and private, the former, or the most frequent, "are those in which vaginal discharges in young children are mistaken by the parents or friends for the evidences of sexual intercourse by elder male persons having gonorrhœa or syphilis. Such cases have frequently occurred to myself, as they have to others; and, although now better understood by the profession than formerly, yet so strong is often the notion entertained by the public with regard to these cases, that it is not unfrequently extremely difficult to persuade parents that we have merely to deal with the results of ordinary disease, and not with those of violence. This notion, in several cases that have come under my notice, has unfortunately been *confirmed by hasty and erroneous opinions*, given by surgeons on the mere representation

(*j*) Erg. H. No. 41.

of the friends, without a proper examination having been made. *It is scarcely possible to speak too severely of such culpable and wilful ignorance.* Within the last few weeks, a child of nine years of age was brought to me, upon whom it was suspected that violence had been inflicted. A careful examination afforded evidence that the case was simply one of vaginitis. There was complete absence of any indication of violence, for although it can scarcely be believed to be possible that sexual entrance into the vagina of an infant could, under any circumstances, be perpetrated; yet in the *attempt*, much contusion of the young and delicate soft parts *must have ensued*, had it been made. The parents were satisfied, and an individual unjustly suspected was forthwith released from so odious an imputation."

"This disease," says Mr. Wilde, "although denominated by Churchill and other modern writers upon the diseases of children, *leucorrhœa infantilis*, is better designated by the term *vaginitis*, for it is of a much more inflammatory character than either leucorrhœa or gonorrhœa, at least, as these two diseases present themselves in the adult female; and the discharge is much more profuse in the former, and much more purulent in the latter. This discharge proceeds principally from the vagina, although the external parts are generally bathed with it when we come to examine them, in the same way as the surface of the glans and the inside of the prepuce are usually covered with discharge, in persons laboring under gonorrhœa, particularly where the foreskin is abundant. The redness and swelling of the labia, clitoris, and orifice of the vagina, are generally very great, and the hue of the former is somewhat purplish. Not being acquainted with the appearance of gonorrhœa in children under ten years of age, I cannot say whether the inflammatory symptoms are equal in appearance to those now described. The disease is, I believe, usually painless in the first instance; and it is only when excoriation has taken place from the irritation of the discharge, and that the urine passing over the abraded surface produces some degree of soreness, that any complaint is made. After some time, the period varying according to the virulence of the disease, and the state of cleanliness or the contrary in which the child is kept, the discharge excoriates the labia both on their external and internal surfaces, the fourchette, perineum, the margin of the anus, and all that portion of the integument of the thighs washed by the discharge, or which come in contact when moved one upon another. In fat children, the amount and extent of excoriation, which presents much the character of an eczematous eruption, is always greater than in those who are thin, or have been in any way wasted by previous ill health. The extent of this eruption is generally very well marked by a defined eczematous margin, extending from the pudendum, in a crescentic form, over the thighs, and sometimes into the cleft of the nates. The character of this eruption, its *defined margin and extent*, may possibly, to a practised and unprejudiced eye, serve to distinguish this disease from the results either of violence or the mechanical irritation produced by the 'friction of the penis' between the thighs and external labia, as was endeavored to be proved by the crown in the late trials in Green Street. With respect to the discharge, it is generally of a very acrid nature, and is the cause of the excoriation and eruption upon the true skin; and, unless the disease has been

discovered by accident in an earlier stage (such as by observation of the child's linen, or by the chance of some second party seeing the child), the two circumstances which first attract attention are, the difficulty of walking, or the pain in making water; but the date of the discovery varies from a few days to several weeks, according to the violence of the affection, or the care and attention bestowed by the mothers on their children. For the same reasons, the duration of the disease will vary from a fortnight to six weeks or two months. The age at which this vaginitis is most frequent is from four to ten, but it may appear earlier."

The following notice of the disease is taken from a paper by Mr. Wilde, of Dublin, in the *Medical Times and Gazette*, Sept. 1853. This paper is entitled a "History of the recent Epidemic of Infantile Leucorrhœa, with an Account of Five Cases of alleged Felonious Assaults recently tried in Dublin." He says: "Considerable excitement has prevailed among all classes in Dublin during the last month, owing to the circumstance of no less than three cases of felonious assaults upon children under ten years of age having been brought forward by the crown at the late commission before the Chief Justices. * * * So impressed were those members of the profession in Dublin who were acquainted with the circumstances of the cases, that Professors Cusack, Beatty, and Geoghegan, and Drs. Churchill, Hughes, Hatchell, and Speedy, all came forward in court, gratuitously, to tender their evidence in what they considered the cause of truth, science, and humanity. Most practical physicians and surgeons, particularly those attached to public institutions, or who are well acquainted with the diseases of the lower classes, know perfectly well that vaginal discharges, attended with inflammation of the external parts and an eczematous excoriation of the labia and the adjacent portion of the thighs, are not uncommon affections in girls aged from four or five to ten years." Mr. Wilde gives some curious and instructive details of the manner in which the charge of rape is got up in some of these cases. We will give one as a specimen. "The first of these cases was that of Margaret Walsh, a child aged nine and a half years, in whom the disease presented a very virulent form when it was discovered by her stepmother, who, however, acknowledged that she had remarked her *walking lame for several weeks before.* There was considerable swelling and inflammation of the parts, and a most profuse purulent discharge. Upon the discovery of the disease by the stepmother, she at once accused the child of impropriety, and demanded the name of the person who had diseased her. Upon the child's denying all knowledge of such, she was forthwith 'soundly flogged,' and repetitions of the punishment promised until she confessed. It came out at the investigation that the mother took down the cross from the mantel-piece, and threatened her therewith—a very impressive mode of adjuration among the lower order of Irish. The neighboring women interfered, and by threats and promises endeavored to extort an acknowledgment, but without effect. Names of different persons were then suggested, but still the child said she could not remember any of them having offended her. Finally, an elder sister, who was present during one of these scenes of torture, reminded the child of an old pensioner named Barber (who resided in a distant part of the city, but who was formerly a

neighbor of hers) having given her a bit of sugar some months before, when they lived in his neighborhood. This she acknowledged, and then arose the accusation." The man was arrested, committed for trial, and sent to prison. The child stated that the prisoner took her into the open hall of a house adjoining his own, and entered into a detail of the transaction, which it is not necessary to quote. The medical evidence showed that the prisoner was not in any way diseased. "After a few words from Chief Justice Monahan, the jury at once acquitted the prisoner, who was discharged, with, however, that suspicion against his character which, among persons of his own class, is not easily eradicated, while the unhappy child was stigmatized as a young prostitute, who had acquired gonorrhœa when little more than nine years of age!"(*g*)

§ 437. The gangrenous inflammation of the vulva, to which we have referred as giving rise to suspicion of rape, is a still rarer disease than leucorrhœa. It is due, generally, to some unknown epidemic influence, or occurs as the sequel of certain prostrating diseases—as measles, or scarlet and typhus fever. Velpeau says it commences with a grayish, red, or blackish vesicle, which ulcerates and then sinks below the level of the surrounding tissues, which assume a dusky red color. The mortification gradually extends on every side, and the labia become covered with a sanious and fetid discharge. The whole constitution suffers terribly, and without the prompt use of energetic remedies many

(*g*) The following testimony by Mr. Cusack in one of Mr. Wilde's cases will further establish this point: "I examined the two children (Cosgrave, the prosecutrix, and Delmere); both were affected with the same complaint. They were filthy, and had a discharge from the pudendum. There was a crust surrounding the parts upon the true skin, which arose from the deposits from the discharge. This child had not the slightest mark of violence; and it was simply a case of a disease which all medical men have met with, and which is very common among children who are strumous, or badly cared for, or who have been in contact with each other. It is usually found in low life, but sometimes it is found in the better walks of life, where children have suffered from other complaints tending to weaken the constitution; and, I confess, I was horror-stricken at the time to hear that the prisoner at the bar was accused of such a crime. I was as convinced as I am of my existence that there was no violence offered or attempted upon this child, and that this was a common disease which is universally known to the profession. I conversed with Sir Astley Cooper on this very subject, and I entirely concur with what appears in his lectures, that numbers have suffered unjustly from such charges as the present being fabricated by the mothers of children." "This evidence," says Mr. Wilde, "which was given in a very decided and energetic manner, seemed to produce a considerable sensation in court; on which the Lord Chief Justice and the crown counsel cross-examined the witness to a considerable extent, in order to show that, although there were no marks of violence, 'a penetration between the labia, accompanied with force, but not sufficient to do any injury to the surface,' might have occurred. In answer to this mode of putting the question, the witness said: 'If the penis was brought into contact with the parts, and a discharge ensued in consequence, it would certainly be a species of violence; but in the present case there was nothing to show me that any friction had taken place externally, or that any attempt had been made to do anything wrong. I am confident that the discharge was not, in any respect, the consequence of friction from the penis of any man. If there is violence, it would cause pain; but I could find not a trace of violence upon this child.' One would have thought that this evidence might have induced the crown to give up the case; but the lawyers only took it up the more determinedly, and, seeing that disease from natural causes was established, changed their hand, and endeavored to prove, by the subsequent witness, that, acknowledging the child was in the diseased state described at the time the crime was committed, still penetration between the labia, without what might be styled violence, but as a simple application of the parts, might have taken place; as the Chief Justice described it, the introduction of the parts, without force, and even to the 'hundredth part of an inch.'" Notwithstanding the explicitness of the medical testimony in this case, the defendant got off only by proving an *alibi*.

children would perish. Mr. Kinder Wood, in 1825,(*h*) saw twelve cases of this disease, of which only two recovered. It is peculiar to children. We think that too much importance may be attached to it as rendering really difficult the question of rape. In all the cases of rape on children we have met with, we do not find one which presented any appearance which could be for a moment mistaken for this affection. The discrimination should not embarrass the physician, although the parents or relatives of the child may be so far misled as to attribute the disease to criminal violence.

Cases have arisen, however, in which both physicians and jurists found the distinction difficult, yet more from the circumstances of the patient suggesting the suspicion of violence than from the characters of the disease itself. The earliest case is one often quoted from Percival.(*a*) "A girl four years of age was admitted into the Manchester Infirmary, on account of a mortification in the female organs, attended with great soreness and general depression of strength. She had been in bed with a boy, and there was reason to suspect that he had taken criminal liberties with her. The mortification increased, and the child died. The boy, therefore, was apprehended, and tried at the Lancaster Assizes, but was acquitted on sufficient evidence that several instances of a similar disease had appeared near the same period of time, in which there was no possibility of injury or guilt."

The following more recent case presents very close analogies with the one just cited. In December, 1857, Amos Greenwood, aged twenty-two years, was tried at Liverpool for the murder of Mary Johnson, ten years of age. On a Thursday night the prisoner and deceased occupied the same bed in a room with other members of the family with which they resided, and then and there it was charged that the crime had been committed. The other inmates of the room heard no noise, and the girl made no complaint of suffering for three entire days, when her genitals were found to be sore and her thighs excoriated. On the fourth day she was seen by a surgeon, who pronounced her affection vaginitis. Becoming rapidly worse, her friends urged her to confess a criminal cause for her ailment, but she protested that she had nothing to divulge, until, being threatened that unless she did so she should be left to die, she declared that "her bed-fellow had been upon her, and hurt her very much." Mercury was then administered to her by an unlicensed practitioner, when sloughing and mortification set in, and proceeded with great rapidity. A surgeon next saw the patient, and discontinued the use of the mercury. The mortification extended, however, to the pubes and nates, including the urethra, labia, and vagina to the depth of two inches, and the child died thirteen days after the alleged attempted intercourse, and ten days from the first discovery that she was diseased. Greenwood was then arrested, and found to have venereal warts on his penis, and syphilitic sores beneath the prepuce. He was tried, convicted of manslaughter, and sentenced to penal servitude for life.

In this case the only direct testimony implicating the prisoner was that of the girl, from whom it was extorted by threats, after she had repeatedly denied

(*h*) Medico-Chirurgical Transactions, vol. vii. p. 84.
(*a*) Medical Ethics, 1803, p. 103.

that he had had anything to do with her.(*b*) Evidently, if copulation was attempted, it must have been so without violence, and without the infliction of pain, for the occupants of the adjoining bed heard no noise, and for three days afterwards the girl made no complaint, nor was her appearance observed to be different from usual. Her subsequent condition cannot, therefore, be attributed to an attempted violation. Is it with more probability attributable to a syphilitic infection derived from the prisoner? The existence of syphilitic sores beneath his prepuce would render his attempting coition improbable. But, admitting that they might have been insufficient to restrain his lust, is the existence of a syphilitic infection proved by an examination of the child's genital organs? These were first seen by a medical man upon the fourth day, who deposed that the girl had vaginitis, with ulcerated spots all over, from the size of a pea downwards. These sores had no resemblance in number or appearance to syphilitic ulcers, but, on the contrary, presented all the characters of aphthæ. The state of the parts certainly did not suggest to the medical man in attendance either that the child had syphilis, or that she was the victim of an attempted rape. It was not until an unlicensed practitioner had administered mercury that the symptoms which ended fatally were developed. Since, therefore, neither the nature nor the fatal issue of the child's disease could be distinctly traced to the prisoner, even on the supposition that there had been contact between the genital organs of the latter and those of the child, his conviction of manslaughter would seem to have been unjust. The person really guilty of the child's death was undoubtedly the unlicensed practitioner who gave her mercury, immediately after which the fatal symptoms began to be developed.(*c*)

§ 438. 2d. *Rape on Adult Females.*—The question of the possibility of rape on an adult female is one that presents considerable difficulty. The testimony of the female herself is naturally open to suspicion, since the cases of false accusations of rape are by no means rare. The majority of writers on medical jurisprudence maintain that when there is no disproportion between the age and strength of the parties, and the woman is awake, well, and conscious, a rape cannot be accomplished unless through threats against her life. It must be remembered, however, that there are few circumstances in which a woman can be placed where, from confusion, surprise, and terror, she is sooner deprived of the command of her will and the power of resistance. We believe that no general rule should govern our opinion on this question, but that it ought to be decided in each case according to the correspondence of the injury received with the woman's narrative and her character for modesty and veracity.

We subjoin the following case because it seems to disprove the accuracy of

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(*b*) "Frequently," says Casper, "have I heard very young but quick-witted children reveal, with the most perfect unconstraint, or even impudence, the whole course of the alleged affair and all its details in disgusting minuteness, so that it required but little penetration to perceive that they were merely rehearsing a lesson which had been taught them; and it has seldom happened that the facts of the case did not confirm this belief."

(*c*) For the details of this case, and the discussion to which it gave rise, the reader is referred to Wilde, Dublin Quart. Journ. Feb. 1859, p. 51, and Med. Times and Gaz. May, 1859, pp. 518, 544; Kesteven, ibid., April, 1859, pp. 361, 417, 442.

the general opinion, and bears strong internal evidence of credibility. On the 22d of March, 1849, a girl, twenty years of age, unmarried, and of virtuous character, returning home from an errand to a neighboring village, was met in the pathway through a wood by a young soldier, twenty-two years of age, with whom she had previously a slight acquaintance. He asked her to let him accompany her a little way on her road, to which she consented. After having gone a short distance, the soldier proposed to her to go with him into the bushes. He made an effort to force her, but did not succeed. He kept his arm around her body, however, and, seizing a favorable opportunity, suddenly raised her from the ground, and, with one hand confining her arms behind her back, threw her down, and with the other pulling up her clothes, prepared to effect his purpose. Upon her beseeching him to let her hands free, he did so, when she again made repeated efforts to get loose from him. He succeeded, however, in again securing her hands, and now lay with all his weight upon her, and endeavored with his knees to separate her limbs, but, with a last effort, she freed her hands and seized him by the privates. She would not let go until he promised to desist. He did so; when, as she attempted to rise, he caught her by the leg, and, throwing her back, finally succeeded by perseverance in securing her hands and separating her limbs, after which he fully accomplished his purpose. All this was done without blows or any unnecessary violence. A witness, who passed by after it was over, testified that he heard them quarrelling together, that the girl was crying, and the young man endeavoring to smooth her disordered dress. Upon her return home, she informed her mother, with many tears, of what had happened, upon which her father insisted upon her going to the parish priest, who lived about a mile distant, which journey she accomplished, though not without considerable pain and difficulty. Medical examination was had three days after the occurrence. The traces of a recently ruptured hymen were found, but other marks of violence were very trifling. There were no spots of blood upon her linen, but some traces bearing a resemblance to seminal spots were found. It further appeared that she was strong and healthy, and it having been suggested to her that she had probably lost her breath in ascending the hill, and hence had been easily overpowered, she said no, she had entirely recovered her breath. The place was examined which she had indicated as the scene of the outrage, and evident marks of a struggle were found. The woman's statement was entirely unaffected by the cross-examination, while the prisoner contradicted himself repeatedly during the trial. He was sentenced to five years' imprisonment.(*i*)

The following very analogous case is reported by Casper,(*ii*) who pronounces it one of the most instructive he had ever met with, because it appears to show that a strong, healthy, and fully grown maiden may be violated by a single man. On the 16th of January the accused enticed the girl, who was twenty-five years of age, into the park near Berlin, and having vainly endeavored, owing to her struggles, to accomplish his purpose by forcing her against a

(*i*) Henke's Zeitschrift, Erg. Heft 41, pp. 21–44.
(*ii*) Gericht. Med. ii. 157.

tree, he seized her by the body and threw her upon the ground, where, being deprived, as she alleged, of all power of resistance, he flung her clothes over her head, and consummated his purpose. Nine days afterwards Casper examined her. She was modest and maidenly in her behavior, and, without any affectation, appeared to be very sad on account of her misfortune. The orifice of the vagina was found to be inflamed, and painful when touched or dilated, the hymen was entirely lacerated, and the swollen caruncles were very red. The fourchette was uninjured. Without any prompting, and only after some general questions in regard to her condition and feelings, she stated that for the last few days she had suffered less than at first in passing water and in going to stool. From these facts it was concluded that the woman had been ravished. At the trial it appeared in evidence that the policemen, who had been attracted by cries to the spot, found the ground frozen hard, and that the accused, even after his arrest, was in a state of satyriasis. He was condemned to four years' imprisonment.

Although rape is a crime usually attempted without accomplices, this is not always the case. Dr. Taylor(*j*) refers to two instances of the sort. In both the females were married women. In one it appears that while an accomplice held the head of the female, with her face downwards, between his thighs, the prisoner had forcible intercourse with the woman from behind, her limbs having been first widely separated. In the second case an accomplice held the woman down on a bed by the neck, while the prisoner separated her thighs, and thus had intercourse with her. She was examined nine hours afterwards by an experienced surgeon, and he found no mark or trace of violence or injury on or anywhere near her pudendum. There were bruises on her arms, neck, and legs, where she had been forcibly held down.

§ 439. Where a woman has been wrought into a *state of unconsciousness by intoxicating liquors* or by narcotic drugs, and when she is prevented by these means from making such resistance, there can be no doubt that her chastity can be violated. The cases are quite numerous which attest this.(*jj*)

§ 440. The question whether a *deep natural sleep* can render the female unaware of the sexual act is more difficult to decide. There are certainly some persons whose sleep is always exceedingly heavy, and who cannot be awakened by loud noise—such as thunder—by strong light, or by being rudely shaken. Long watching and fatigue, and heating drinks, are often followed by very profound sleep. It is not difficult to suppose that, in some rare instances, females, whose slumber may have been rendered unusually heavy from any of these causes, may be unconscious of sexual connection taking place at the time; and it must even be admitted that it may occasionally happen to virgins. Two cases illustrating this point are related by Montgomery,(*k*) the one borrowed from Gooch and the other communicated by Mr. Cusack. In both cases the females were unmarried, and regarded as virtuous, and both declared solemnly that they had no knowledge of the cause of their pregnancy. In each case the father of the child born confessed that he had had connection

(*j*) Medical Jurisprudence, 6th ed. p. 708.
(*jj*) See *post*, § 458, for the legal relations of this point.
(*k*) Signs of Pregnancy, p. 382.

with the female, who was plunged in a deep sleep produced by excessive fatigue. Nor should such a statement be deemed incredible, when we remember that there are instances, quoted elsewhere, of children born without the mother's consciousness, and that instances of a complete absence of sexual sensibility in the female are not uncommon. If, moreover, the act be perpetrated under the cover of darkness, upon a woman who has fallen asleep while awaiting her husband or lover, a certain degree of belief must be given to such an explanation. Yet, while allowing all due weight to these exceptional cases, their occurrence should not be lightly assumed, the presumption being certainly against it.(*a*) In the words of Valentin, "*non omnes dormiunt, qui clausos et conniventes habent oculos!*" A case has been subjected to judicial examination, in which a girl, eighteen years of age, declared herself pregnant by a professor of "animal magnetism." The state of insensibility called magnetic sleep, or hypnotism, is frequently marked by a total want of perception of impressions, such as usually occasion pain; and such was alleged to be the case in the instance referred to.(*b*) The opinion that the imputed crime is possible was expressed by the experts who were consulted, and was confirmed by that of Dévérgie.

§ 441. The proof of unconscious sexual connection is usually derived from the occurrence of pregnancy without a knowledge of its origin. We subjoin a few examples. Klein(*c*) reports a case where a stepfather violated and impregnated his daughter, of the age of eighteen, during her sleep. Zittmann(*d*) relates the case of a girl who was impregnated during her sleep, and was only conscious of having had an oppressive dream. Alberti(*l*) mentions the fact of a girl having been violated and rendered pregnant while in a state of stupor from a potion prepared from the seeds of *datura stramonium* (Jamestown weed). Osiander(*m*) relates that a young girl, only fifteen years of age, having fainted with terror at the sight of some drunken soldiers, was shamefully misused by them, and left bleeding and in an almost dying condition; she, however, recovered, but had got the venereal disease and became pregnant. Klose(*n*) met with the case of a clergyman, who, while watching by the corpse of a young girl, gratified his lust upon her. Her death, however, was but a temporary suspension of animation, for she awoke and was pregnant.(*o*) It should, of course, be remembered that the truth of the statement relative to the commencement of the pregnancy is open to examination.

§ 442. Rape may be committed with comparative ease upon women *advanced in life*. Casper(*p*) relates a case in which a woman, sixty-eight years

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(*a*) See *post*, § 458 et seq. (*b*) Abeille Méd. xv. 293.
(*c*) Kopp's Jahrb. der St. Arzneikunde, 10 Jahrg.
(*d*) Med. Forens. Cent. v. cas. 21.
(*l*) Syst. Jurisprud. Méd. tom. ii. p. 200. See *ante*, § 201.
(*m*) Handb. der Geburtsh. § 286. (*n*) System der gericht. Physik, § 286.
(*o*) See also Rüttel, Henke's Zeitschrift, 1844, 264; Henke's Handbuch; Zeitschrift, 37 Bd. p. 290; Hartman, Canstatt's Jahresbericht für 1851, Bd. vii. p. 84. In this last case the woman could not only not be convinced of the existence of pregnancy, but was even unaware of the nature of her labor until she saw the child. See also Capuron, Méd. Lég. pp. 57, 84; Fodéré, Méd. Lég. tom. i. 497; Dict. de Méd. tom. xxi. pp. 358–9, also tom. x. p. 465; Dévergie, Méd. Lég. tom. i. p. 431; Gooch, Compend. of Midwifery, pp. 81, 82; Montgomery, Signs of Pregnancy, 2d ed. p. 360.
(*p*) Loc. cit. p. 26.

of age, decrepid and horribly pitted with the smallpox, was violated by a young fellow of twenty-seven.

§ 443. 3d. *Rape on Persons under the Influence of Ether or Chloroform.*—A trial in this city has developed the importance of the question, how far the capacity of resistance upon the part of the female, and her consciousness of the act, is abolished by the intoxicating and narcotic influence of ether and chloroform. With the exception of a somewhat similar case which occurred in Paris, we believe that this is the only one which has been made the subject of judicial investigation.

From the novelty and importance of the questions to which it has given rise, we have concluded to give here a full account of the history of the case, chiefly extracted from Dr. Hartshorne's vindication, and some remarks in the note, of our own, on the "psychical effects of ether inhalation," both of which are published in the Phil. Med. Exam. for Dec. 1854.

"A young lady of unimpeachable character, who has for some time been engaged to be married, is accompanied by her betrothed to the house of an eminent and highly respectable dentist, who had engaged to plug one of her teeth. They arrive about ten o'clock on a Friday morning. She enters the house, and after 'a few minutes' spent in awaiting the exit of two other ladies, she is ushered into the operating room or office. Here we will allow her to continue the narration in her own words.

"I went into the office; took off my bonnet, and Dr. B—— went to the washstand to wash his hands, and he asked me after the family; I took a seat on the operating chair; in a few minutes Dr. B—— told me one of the men wanted to speak to him, and he gave me a book to read and left the room; did not say what man; I supposed there were men there; he has a room in which the teeth are made; I believed those to be the men; Dr. B——'s family were out of town at that time; he said so, and the door was opened, and there was no furniture in the front room; I don't know how long Dr. B—— was absent; when he came back I was sitting in the operating chair; he went to the instrument case, and began with my tooth; the tooth was on the left side; he commenced operating on the tooth before he gave me ether; the operation was very painful; he said he would either put something in to destroy the nerve or give me ether, leaving the choice to me; I told him I'd prefer taking ether; I didn't learn what he proposed putting into the tooth; he gave me the ether on a small napkin, folded up; I felt very dizzy at first; I was cold and felt very numb; it increased upon me; I did not lose my consciousness of what was doing; I continued to breathe the ether; my eyes were closed; I closed them voluntarily; I did not try to open them for some time after; after he gave me the ether he did not, as I remember, operate on my tooth; he felt my pulse several times; put his hand on my arm under my sleeve, up my arm; I had a loose sleeve; he did it once; he put his hand on my breast under my dress; on the bosom; he put his hand on my person, under my dress; I have a distinct memory of that; I was not able to make any resistance or outcry; he went round before me and raised my clothes; I am perfectly distinct in my memory of that; I did not try to cry out; do not know if I was able; after he had raised my clothes, my feet were crossed, and

he raised them and put one on each side of the stool; he then put his arm around me under my clothes; he drew me down to the edge of the chair; I do not know what he did after that till I felt pain; he did enter my person; it was then I felt the pain; I was not able to cry out or resist; I did not try; I don't know what was his position; my eyes were closed; I have no doubt that he did enter my person, and did give me pain; all this time I was conscious of everything that was going on; after this he left me and crossed the room to the washstand; I heard him pour out water into the basin; after he had been to the washstand and returned, I opened my eyes, and saw my clothes up; he did not see me; I have a clear recollection of seeing my clothes up; I closed my eyes immediately; he put down my clothes, and in a few minutes he was at the side of the chair, and lifted me up into the seat; I was just to the edge of the seat; it was a large dentist chair; in a few minutes he told me he'd have to take the tooth out; that was the first remark he made, except the first, when he asked me if I was getting sleepy; at the time he entered my person I did not feel his person against me; pain I distinctly felt; when he spoke about taking out the tooth, I asked him why; he said they were both decayed, and he could not save them both; I told him I was afraid it would pain me, and he said he would not let it; he then gave me more ether, and extracted the tooth; I was on the left side; when he extracted the tooth it was painful; I screamed then; he then assisted me to rise, and led me to the rocking-chair; I felt a little dizzy when he led me to the rocking-chair; he then went out of the room, and in a few minutes came up with a lady; I have not seen her since; he asked me if I would be introduced to her; I believe I said no; he did not introduce me then; I heard him tell the lady he'd always been our dentist, and that we never had been to any other; he said my teeth were very good; he said I had taken ether, when the tooth was extracted; I think she said something about hearing me scream; he said yes, ether had not much effect on me, I was either nervous or for some cause; in a little while I got up, and he introduced me to the lady; I think it was Mrs. P——; I made several remarks, but I don't know what they were; I then put on my bonnet, and Dr. B—— followed me down stairs; the lady was left up stairs; he came to the door, and I wanted to stop an omnibus; he asked me how far I was going, and I told him to Third Street and Lombard; he told me I had better walk; he said he thought I had some of the ether in me, and the walking would do me good; I walked down Walnut to Sixth, and did not get in an omnibus; I did not reproach Dr. B—— at the house; I was afraid; I stopped in C—— ice cream saloon, at Sixth below Prune; I got ice cream; I went then along Sixth Street to Spruce, and down to Third and Lombard Street; I was going to see a young woman that sent for me; I did see her; don't recollect how long I was there; when I left I came up to Mr. T——'s, at Chestnut Street, near Fifth; I was very intimate with Mr. and Mrs. T——; I met Mr. M—— on the way up, near Sixth and Chestnut Street; he joined me and spoke to me; did not accompany me to Mr. T——'s; did not meet any but those I have named; I reached Mrs. T——'s at 1 o'clock; they had not been to dinner; I first mentioned to Mrs. T—— what had occurred at Dr. B——'s, the same day after tea; that afternoon I was taken

unwell; it was the usual time; the door of the dentistry room at Dr. B——'s was shut; there are two doors in the room; the one leading to the entry door was closed; Dr. B—— said that he closed the door because the smell of the ether would go over the house; the door was shut before he gave me the ether; the chair is one that leans backwards.

"*Cross-examined.*—Dr. B—— was the dentist of our family; don't remember the number of years; it was from the time of my early youth; he attended all the members of the family so far as they required it; I went to him with the approval of my parents; he generally behaved like a gentleman; I did not know his family; don't know how many years I have been his patient; when I called with Miss Thr—— it was to get my tooth plugged; on several times before I had taken ether; I requested it to be given; I don't remember of his persuading me from it; the tooth was not plugged when I was there with Miss Thr——; the following Thursday was appointed for future operation; I did not go on Thursday; Mr. Thr—— had the appointment made; I believe it was on Wednesday morning; I received a letter from him to that effect; I requested him to go in with me; he was there when the woman came to the door; I was shown into the front parlor; it was the usual place; it was but a few minutes before the ladies came down; Mr. B—— came down before; he said he had several young ladies up stairs and would be down in a few minutes; I went into the usual operating room up stairs; the door opening into the front room was opened at the time; it was the back room of the main building I was in; the workshop is in the second story back building; don't know how far from the room in which I was; it is not upon the same level; it is lower; I don't know if I could see into the windows of the workshop from the window of the room in which I sat; when Mr. B—— went to see the workmen he gave me one of the monthly magazines; while I was in the room nobody came to the door that I saw or heard; don't know of the doctor leaving that room; did not see any women there except Mrs. P—— and the Miss H——; the windows were closed in the room, *i. e.*, the sashes were down; no change was made in their condition while I was there; don't remember any one calling as a sitter while I was there, and Dr. B——'s speaking of it; I did not know of Mrs. P——'s being in that house before she was brought up stairs; I don't remember speaking to Dr. B—— of the fan and requesting him to give me ether; from the time I closed my eyes after the ether had been taken, I did not open them until after the liberties had been taken; I did not open my eyes until he returned from the washstand; what I have described is from what I have heard and did not see; I did not see any part of his person exposed, nor the application of any part of his person to me; don't know, except from the pain, what part of his person was applied to me; he passed his hand up my arm immediately after he had felt my pulse; after the ether was administered a second time no liberties were taken; I judge that he did not see me when I opened my eyes, because he was not in front of me; when he told me he would have to pull the tooth, I asked him why; the reason why I agreed to take the ether a second time was, because I was afraid; I was not afraid to have my tooth taken out, or to be operated upon further; I don't know if either of my teeth were prepared for plugging; I suppose he

touched the tooth he took out; that gave me pain; I told him I'd had the tooth-ache; another appointment was made for Monday at 2 o'clock; I asked him when I was to come again to have them finished, and he said at that time; I asked him that when I was going and had my things on; he booked it at my instance; I don't know if it was before Mrs. P—— came in or not; Dr. B—— did not say there was a sitter waiting for the chair; I did not see any one call to inform him of a sitter; I never notice such small things as that; don't know how long after he had finished the tooth that he went down for Mrs. P——; I did not remain more than five minutes; Mrs. P—— said she came from the country and came to have her teeth attended to; Dr. B—— followed me down stairs; that is his custom, not only with me but with other ladies; when at the door I did not manifest any displeasure with him; I told the doctor I wanted an omnibus; I believe I bid him good bye; soon after I got out of the door of the second story, I told him to say good bye to Mrs. P—— for me, as I had forgotten it; the chair I sat in was the one I had always used; there was but one operating chair in the room; Dr. B—— asked me if I ever rode on horseback; I said yes, sometimes; he said ride over and see us; I replied, perhaps I will; that was up stairs; on the way down to C——'s I did not meet any one I knew; I did not meet any one on my way to Third and Lombard Street; I told Dr. B—— I was going on an errand to Third and Lombard Streets; it was an errand for my sister in respect to some articles of dress; I did not speak to her of the treatment I received; did not sit down very long; when I left Dr. B——'s I think it was a few minutes before or after 12 o'clock; I don't remember which; I don't know how long I was at C——'s; not long; reached Mrs. T——'s a little after 1 o'clock; Mr. M'K——, whom I met, asked after the family; I did not tell him where I had been; he only walked with me a short distance; I did not complain of any pain to Dr. B——, except the pain of my teeth; I don't remember how long the first application of the ether lasted; after I took it I felt no pain in my teeth; cannot describe the effect of the ether, except that it made me dizzy; I did not see the doctor at all during the operation of the first ether; I felt his breath as well as felt pain; the pain did not continue long; I had no other indication of the approach of my monthly discharge but that day; it occurred in the evening; I did not examine my person in the interval; nobody examined it between those times; I did not examine my garments; my mother did on Sunday afternoon; nobody before; those garments don't remain now as they did then; they are washed; I don't know when; I made the communication to Mrs. T—— after tea on Friday evening; I told Mrs. T—— before I became unwell; I gave evidence before the Mayor; don't know if the garment was washed before that; it was not washed till I went out home; during the time I was at Mrs. T——'s till I was taken unwell, no physician was sent for; I was never examined by a physician; on the afternoon of Friday I was out riding with Mr. and Mrs. T——; we set out about six; I do not know where we went; somewhere on the plank road; it was some time after I returned that I felt unwell; spoke to Mrs. T—— on the subject after tea; we had tea as soon as we came home from riding; Mrs. T—— told Mr. T——, and Mr. Thr—— asked me a single question about it; I answered it; and that was

all I said; it was before I felt unwell that I told Mr. Thr—— about it; he remained as long as I did, and went to my grandmother's with me; on the next day I went out to the depot, but did not go to my father's; Mr. Thr—— accompanied me to the depot; I met Mr. and Mrs. T—— out there; I did not see my father or mother; I saw my father on Monday morning in Fifth Street; at the time he left to go down stairs, I did not see if he opened the door or not; I was sitting with my back to the door; I don't know why I refused to be introduced to the lady when he first asked me the question; my father and Mr. Thr—— accompanied me to the Mayor; Mr. and Mrs. T—— and my two uncles were there; my father was there before I was.

"*Re-examined.*—I said that Dr. B—— generally used me like a gentleman; he said a year ago that he should like me for his second wife; he had a good many children, but they should not trouble me, as he would get nurses for them; I spoke of it at home to my mother and sisters; after the doctor took me out of the chair after the operation, all that I said was in answer to questions by him, or to remarks; the reason why I did make another appointment with him (Dr. B——) was that I did not want him to know that I knew anything of his conduct; I had not concluded what course to pursue."

We leave the comments upon the legal proof of penetration or of rape in this case to our colleague; the question as to the capability of evidence on the part of a female, relative to what has occurred during the period of etherization, and the possibility of resistance under such circumstances, may, we hope, receive an answer in the subjoined remarks.(*q*)

(*q*) There is a striking analogy between the effects of ether and those of alcohol; the chief difference between them being in the more rapid and complete insensibility produced by the former, and in the more evanescent character of the intoxication. There is a period of excitement, of stupor, and of recovery, and the phenomena observed in different individuals vary according to their temperament and habits. In general, the state of excitement in etherized patients is short, and verges rapidly into that of unconsciousness and insensibility to pain. The vapors of ether seem literally to ascend and diffuse themselves through the brain, and to permeate every portion of the body; the patient has a sense of fulness and warmth; the whole body feels lighter and seems to spurn the earth; the sense of hearing becomes confused, the sight dim, and the touch benumbed. External objects lose themselves in a confused mist, which appears to swell their proportions and contort their shape; the muscles become relaxed, and the patient sinks lethargic and unconscious into a profound sleep.

During the transition into a stage of entire insensibility, he responds to external impressions only in an automatic manner: the most painful incisions, if felt at all, seem to him like the marking out of lines upon the skin, and the extraction of deep-seated tumors like the crackling of hair between the fingers. All his movements are instinctive; an expression of suffering is often depicted upon the face; the hands are raised against the operator as he attempts to draw a tooth, and when spoken to, he answers in a vague and dreamy manner. The recovery from this condition, or from a more advanced stage, is apparently sudden, but, as in the waking from profound natural sleep, the perceptions are for a few moments confused, even while the person thinks himself fully awake and appears to be so.

Dr. Forbes has well described the *psychical* state under the influence of ether. "Generally speaking," he says, "the sense of external impressions becomes at first confused, then dull, then false, with optical spectra or auditory illusions, general mental confusion, and then a state of dreaming or utter oblivion. In the majority of cases, the mind is busy in dreaming, the dreams being generally of an active kind, often agreeable, sometimes the reverse, occasionally most singular, and frequently a great deal is transacted in the few short moments of this singular trance. Many of the patients who have undergone the most dreadful operations, such as amputation of one or both thighs or arms, extraction of the stone, excision of bones, extirpation of the mamma, have readily detailed to us, and most with wondering thankfulness, the

§ 444. Finally, although a woman may be of age and strength sufficient for effectual resistance, she may be naturally so simple-minded, or so ignorant

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dreams with which, and with which alone, they were occupied during the operations. The character of the dreams seemed to be influenced, as in ordinary cases, by various causes, immediate or remote, present or past, relating to events or flowing from temperament." * * * * * "A good many seemed to fancy themselves on the railway, amid its whirl and noise and smoke; some young men were hunting, others riding on coaches; the boys were happy at their sports, in the open fields or the filthy lane; the worn Londoner was in his old haunts carousing with his fellows; and our merry friend, Paddy, of the London Hospital, was again at his fair, wielding his shilela in defence of his friends. Others of milder mood, and especially some of the women patients from the country, felt themselves suddenly transported from the great city and crowded hospital-ward, to their old quiet home in the distant village, happy once more with their mothers and brothers and sisters. As with the dying gladiator of the poet, the thoughts of these poor people—

'Were with their heart, and that was far away.'

Some seemed transported to a less definite, but still happy region, which they vaguely indicated by saying they were in heaven; while others had still odder and warmer visions which need not be particularized." (Brit. and For. Med. Chir. Review, April, 1843.) It is with this psychical condition that we have now chiefly to do.

What then is the influence of the inhalation of ether upon the *perceptions?* It undoubtedly cuts off, more or less quickly, the life of relation, and severs us from the external world. The lapse into unconsciousness is gradual but rapid, and does not admit of division into distinct intervals. The sensation of pain is often lost before outward consciousness has become totally obscured. Indeed, instances are related in which the patient has himself looked on as a calm spectator of the painless mutilation of his body. A patient of Prof. Pitha, being put under the influence of chloroform, at once fancied himself in his beloved Italy, and gave full vent to his expressions of delight; he raised himself up during the operation for the liberation of a hernia, and watched it with great interest—answering to the question whether he felt any pain, "*Si, io sento l'incisione, ma non sento dolori.*" (Prager Vierteljahrschrift, 1848, 3 Bd.) Such cases are rare, and it is important that we should not be misled by this apparent outward consciousness. In the instance just cited, the perception was by no means unperverted; since, although the patient replied correctly when questioned, he imagined himself in a distant country. During an extremely painful operation performed by Velpeau upon a young girl, she raised herself into a sitting position, as if to observe it. She said afterwards that she supposed herself seated at a dinner table. (Rev. Méd. 1847.) In the greater number of cases, however, the perceptions are greatly perverted—illusions being sometimes suggested by the scene actually passing, and at others arising without being prompted by the external perceptions. Some cases, illustrating this fact, we quote from the interesting work of Dr. Flagg. (Ether and Chloroform, &c., by J. F. B. Flagg, M. D., Surgeon Dentist, &c. Philadelphia: Lindsay & Blakiston, 1851.)

After an operation performed on the forehead of Mr. T——, a dentist of this city, he said that, although his eyes were shut, he saw every cut of the knife. "He saw the shape of the wound upon the forehead; and, what was better than all, this cutting appeared to him to be done upon somebody else." A lady dreamed that she was at Cape May, and was going into the surf, and that while in the water she was attacked by a shark, which held her fast, but without pain, until the company present extracted his teeth and liberated her. A little girl, the extraction of whose tooth made a report like the drawing of a cork, sprang out of the chair, "crouched upon the floor, and looked up anxiously at me and inquired if anybody was killed." She supposed she was travelling upon a locomotive engine, which had been blown up and thrown her into the air. A boy fancied himself in a cotton-mill; an Irish woman dreamed that she had been home, and seen her friends engaged in spinning; and others dreamed that they were in railway cars or shipwrecked: the dream in some cases being suggested intentionally by the dentist, or being due to accidental noises. A countless number of cases might be adduced to show that patients under the influence of ether have been completely ignorant of all that passed around them while in this condition, and have been surprised to find, upon their recovery, that they have undergone the most severe surgical operations. But this fact is too familiar to need illustration. It is only important to observe that during this state of utter oblivion the mind is often busily engaged upon its own inward perceptions, which may or may not be pertinent to the actual position of the patient. These perceptions shape themselves into dreams entirely similar to those of natural sleep, being grotesque and improbable,

of the nature and consequences of the sexual act, as to offer the greatest facilities to any one who may have the knavery to take advantage of her. A case

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cheerful or painful, according to the temperament, occupation, and habitual mode of thought of the individual.

One of the most extraordinary effects of the inhalation of ether is its effects upon the *emotions*. Thus some persons are seized with the most irrepressible mirth, while others seem to sink under the weight of despondency. Women are especially liable to these effects. Hysterical paroxysms are by no means a rare accompaniment of ether inhalation. In others the erotic propensities are strangely excited. Siebold relates the case of a woman whom he rendered insensible by ether. Upon regaining her consciousness she appeared to be in a highly excited state, and was loud in her praises of the delightful condition in which she had been; her eyes sparkled, and a certain erotic excitation was very observable. (Ueber die Anwendung der Schwefel-Æther-Dämpfe in der Geburtshülfe, Göttingen, 1847.) Pitha observed excitement of the sexual feelings in two cases, one of a woman and the other of a man, upon whom he operated. (Prager Vierteljahrschrift, 1847, Bd. 3.) "In one of these cases, observed by M. Dubois, the woman drew an attendant towards her to kiss, as she was lapsing into insensibility, and this woman afterwards confessed to dreaming of coitus with her husband while she lay etherized. In ungravid women, rendered insensible for the performance of surgical operations, erotic gesticulations have occasionally been observed; and in one case, in which enlarged nymphæ were removed, the woman went unconsciously through the movements attendant on the sexual orgasm, in the presence of numerous bystanders." (A Lecture on the Utility and Safety of the Inhalation of Ether in Obstetric Practice, by W. Tyler Smith, M. B., Lancet, March 27, 1841; also in Bulletin de l'Académie, vol. xii. p. 406.) We doubt not that other cases might be brought forward to illustrate this fact, but the paucity of published reports of such a nature will be readily attributed to the natural unwillingness of patients to disclose painful illusions of this kind, and of physicians to make them known. In further illustration of the disordered condition of the mind under the influence of ether, the following case may be cited. A female rendered insensible by ether, after some unintelligible phrases, related some most circumstantial details of her private life. This involuntary confidence, which might have been followed by serious consequences had it taken place anywhere but in a hospital, was discovered afterwards to have been perfectly true. (Ann. Medico-Psycholog. vol. xii. p. 376.)

In the above observations it may very plainly be seen that the *will* no longer exercises its control over the mental operations. The thoughts run headlong upon their accustomed track, or in any direction in which they may have been impelled by fortuitous impressions made upon the nerves of general or special sensation. There is no power to restrain them, and, while the dream is a pleasant one, no desire to do so. Often, however, the illusions are painful or disagreeable, and in such cases the individual may make an effort to escape from or to repel them. Movements under these circumstances, therefore, imply an exercise of the will. This resistance is almost always to illusions proceeding from external impressions. We have already referred to the frequent occurrence of instinctive struggles against the hand of the operator, while the impression, as afterwards related, has been upon the mind of the patient that he was playing a part in some very different scene. Thus the little girl whose case is before referred to, and who fancied, when her tooth was drawn, that she was blown from a locomotive, *sprang* from her chair upon the floor while still unconscious.

Another young lady, mentioned by Dr. Flagg, when the forceps was placed upon the tooth, cried out, "Stop pulling! stop pulling!" The tooth was nevertheless extracted. "She *rose* from the chair in much excitement, and would have fallen to the floor, but I caught and sustained her for a moment, when the ether instantly passed off." This young lady dreamed that she was in danger of shipwreck, and, seeing the rocks and breakers ahead, cried out to the man at the wheel, with all her strength, to "stop pulling." In another instance, a lady, while under the influence of ether, resisted the attempt to extract her tooth. She *got up* from the chair, seeming much offended, and took her seat in another part of the room. When the effect of the ether passed off, which was in about a minute, she was much astonished at finding herself so remote from the position she occupied when she fell asleep. (Flagg, p. 102.)

The following singular instance may be appropriate in this place. A young man having been sufficiently etherized, the dentist prepared to extract a tooth. In a moment he dashed the instrument from his mouth, *left the chair*, and, striding about the room, demanded what they meant to do with him. In a few moments the effect of the ether passed off. Being again put under its influence, the same scene was enacted, with even greater violence, and he endeavored to jump out of the window. When he regained his memory, he related that he imagined himself surrounded by a great

in point may be found in the second edition of Wharton's Criminal Law, p. 439. Here a girl allowed a medical man to have connection with her, under

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number of enemies, one of whom endeavored to drive a nail into his mouth, and being unable to struggle with them, he had sought safety in flight. (Union Méd., Sept. 1857.)

Mr. Gerdy, in trying the effect of ether upon himself, with the object of observing closely its successive phenomena, found that, with the exception of the vibratory and benumbed sensation which rendered the sense of touch and of pain obtuse, and the noise in the ears which dulled the sense of hearing, his intelligence was clear, his attention active, and his *will* so firm that he willed to walk, and he did walk, in order to observe the effect upon his locomotion. He found that his step was only less sure than usual, and was similar to the gait of an intoxicated person. (Bulletin de l'Académie, vol. xii. p. 304.)

We have cited these examples, out of many of a similar nature, for the purpose of showing that the power of the will over muscular movement is not entirely abolished in etherization. It is true that the muscles are speedily relaxed, but they are not paralyzed. The patient may exercise his will, or he may not; if he does, it is to escape from danger, real or imaginary, but which has always to him the form of reality. If he does not make any movement, the fact is due either to the pleasurable or trivial character of his mental perceptions, or to the temporary but complete unconsciousness and insensibility in which he is plunged. That advanced stage of etherization in which perfect narcotism is produced is, in reference to the present question, of considerable importance; for if the power of resistance is then lost, so also is the consciousness of a real motive for it. To be more explicit, if an outrage be perpetrated upon a woman lying wholly helpless and unconscious, she cannot be aware of the liberties which are being taken with her person, and will not, therefore, make any opposition to them. She cannot, moreover, afterwards describe, with elaborate detail, the manner and particulars of the assault, and yet have been incapable of withdrawing from or repelling it. If her muscles and voice have been paralyzed, so also has her outward consciousness.

The recollection of what has passed during this stage of etherization is wholly confined to the inward mental perceptions—to the dreams, which have all the vividness of real occurrences. In the language of Dr. Forbes, "the old story of the magician in the Arabian tales seems more than realized; the ether being like the tub of water, one moment's dip of the head into which produced a life-long vision in the dreamer's mind." It is possible that these dreams may be so vividly impressed upon the mind that they may have afterwards to the patient all the force of real occurrences, and that he may refuse to believe that they have been merely the disordered perceptions of his own brain. In general, these dreams being of a trivial or of a pleasing character, it is not surprising that the patient should acquiesce in the belief of their unreal nature, but the case is very readily conceivable in which the hallucination may have been so distinct and, at the same time, of so repulsive a character as to leave an indelible impression upon the mind and a conviction of its reality. Authentic published evidence of this fact is indeed wanting, and we purposely forbear, for reasons which cannot fail to be apparent to our readers, to refer to that which was said to have been offered in the recent trial, as well as to that which we possess from private sources.

The following cautious remarks of M. Bayard are not without significance: "If," he says, "in some cases, individuals have rendered an exact report of what has passed around them, or of the liberties which have been taken with them while under the influence of ether and chloroform, it must not be forgotten that very frequently they have dreams, hallucinations, and illusions which they relate with a conviction of their actual reality. Experts should therefore receive with extreme circumspection declarations made before them under these circumstances, and, both in their written reports and verbal depositions, should endeavor to enlighten magistrate and jury upon the relative value and credibility of such revelations." (Appréciation Médico-légale de l'Action de l'Ether et du Chloroforme. Ann. d'Hygiène, vol. xlii. p. 201.) It appears to us, from what has now been stated, that the following positions may be assumed as correct:—

1st. That the consciousness or perception of external objects and impressions is impaired in the early and lost in the final stage of etherization.

2d. That during the time the mind remains susceptible to external impressions at all, these reach it in a feeble or perverted manner.

3d. That the emotions, and especially those of an erotic character, are excited by the inhalation of ether.

4th. That voluntary muscular movement is not paralyzed until the state of perfect narcotism is produced, at which time, however, all outward consciousness is extinct.

the belief that this was medical treatment. Dr. Fleischmann(*r*) relates a case which occurred in his own practice. He was consulted by the parents concerning their daughter, a girl seventeen years of age. She had been brought up in a very secluded manner, and was both weak-minded and wholly inexperienced. Her monthly periods were suppressed, and a certain train of symptoms set in which awakened in his mind suspicions of pregnancy. The mother indignantly repelled this idea. He still, however, continued his attendance, and prescribed various remedies, without any avail. At last the violence of her pains compelled the girl to take to her bed. Here she lay for a short time in a half-unconscious condition, but suddenly she gave a loud cry, threw aside the cover, and displayed, to the astonishment of all, a living child, just born, lying between her thighs. In answer to her mother's anxious inquiries, she declared, with the greatest candor and simplicity, that she had never slept with a man, and knew nothing more except that, a long while before, her cousin N——, on a Sunday, when her parents were not at home, had played with her, and caressed her a great deal, and then, said she, "*er hat mir auf dem sofa recht schön gethan.*"(*s*)

§ 445. Very little need be said of the *physical signs* of rape upon the adult female. Where the violence employed has been great, it will be found generally that it has been expended in overcoming the resistance of the woman before an actual penetration has been attempted. Hence, although bruises may be found upon the thighs and knees, and on other parts of the body, they are certainly inconclusive of rape, without some marks of injury can be found upon the private parts also. We of course refer only to the medical evidence, as it is plain that the fact of rape having been attempted may be established by other testimony. We have already alluded to the fact that a medical examination in cases of rape is seldom had early enough to secure

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5th. That the memory of what has passed during the state of etherization is either of events wholly unreal, or of real occurrences perverted from their actual nature.

6th. That there is reason to believe that the impressions left by the dreams occasioned by ether, may remain permanently fixed in the memory with all the vividness of real events.

[Since these remarks were written, there has been much evidence published, given at meetings of the dentists in New York and Baltimore, which fully confirms what has been now stated, and places the whole of the positions assumed by us beyond the possibility of a doubt as to their accuracy. We have only to add that the dentist, Dr. B., was found *guilty* by the jury, and sentenced by the judge to four years and six months imprisonment. We sincerely believe that a great wrong *may* here have been inflicted upon an innocent man, which can only be compensated by the probability that the fallible nature of the evidence upon which he was convicted, will hereafter render it difficult to sustain an accusation upon similar proof.] To complete this history, it may be added that Dr. B. subsequently received a pardon from the Executive of the State, in consequence of the large mass of testimony presented by physicians and dentists, going to prove the entire possibility that the whole accusation grew out of a hallucination such as ether is competent to produce. A case closely resembling that of Dr. B., in the text, occurred at Montreal in 1858. A dentist was indicted for attempting to commit a rape upon one of his patients under the influence of chloroform. At the trial, a witness testified that his wife was under the strongest impression that she had been violated by the prisoner while under the influence of chloroform; yet her husband was present during the whole time she was unconscious. The verdict of the jury was "guilty of an attempt to commit a rape, with a recommendation to mercy"! (Boston Med. and Surg. Journ., Nov. 1858, p. 287. For a similar case in Ohio, in 1860, see *post*, § 459.)

(*r*) Henke's Zeitschrift, 1839, p. 294.

(*s*) We know of no equivalent English phrase by which to translate this remark.

any useful data; this is especially vexatious in the case of adults, in whom, of course, the traces of sexual connection will soon disappear.

§ 446. 4th. *Physical Evidences of Rape.*—The only valuable indications are deduced from the *condition of the hymen and the traces of blood and semen.*

(1.) *Condition of the hymen.*—This comes under consideration only, of course where the female is represented as having been a virgin. Indeed, the hymen is looked upon as the infallible sign of virginity. A brief mention of the various circumstances which affect its value as a test of virginity, will show under what limitations evidence from it may be received.

§ 447. (*a.*) *It is not always destroyed by the first connection.*—This is abundantly proved by the numerous instances in which it has been preserved entire until the occurrence of parturition; a fact which proves also that it is not an insuperable obstacle to impregnation.(*t*) The accoucheur has sometimes been obliged to incise it, in order to allow the delivery of the child; in some rare cases, on the other hand, it has become gradually dilated and extended in such a manner as to permit the child to pass without its being ruptured. Maschka refers to the case of a girl, eighteen years of age, whose vagina was notably enlarged by coition, although the hymen was uninjured. This membrane was crescentic, thick, and fleshy, but as elastic as India rubber.(*tt*)

In *Henke's Zeitsch.* vol. xl. p. 173, is related with detail, a case in which, after four years' marriage, the hymen was found to be still uninjured, being thick and parchment-like, although yielding and presenting an opening about the size of a pea. The pair fulfilled their marital duties, imperfectly, of course, yet nevertheless the lady became pregnant, and was confined prematurely in the sixth month. Dr. Montgomery says: "The existence of the hymen at the time of labor has been observed by Ambrose Paré, Willis, Ruysch, Nægelé, Baudelocque, Mauriceau, and many others; the cases related by the last two are particularly remarkable. Dr. Blundell met with four cases of impregnation in which the hymen remained unbroken; the diameter of the vaginal orifice not exceeding that of the little finger; and he knew of three other cases in which the male organ was not suffered to enter the vagina at all; yet impregnation took place from the mere deposition of semen on the vulva."(*u*)

§ 448. (*b.*) *It may be lost from other causes than coition.*—Without insisting upon the fact of its occasional congenital absence, which, although mentioned by Capuron, is probably, as a solitary defect, extremely rare, the hymen may be destroyed by accident or disease. Siebold(*v*) mentions a

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(*t*) Canstatt's Jahresbericht für 1851. Credé, Bd. iv.; Kluge, Med. Preuss. Vereinzeitschrift, 1835, No. 22; Siebold,—Siebold's Journal, Bd. xii. S. 210; Scanton, Lancet, Mar. 8, 1851; Schmittmüller, Henke's Zeitsch. Bd. xli. S. 172; Möller, Ibid. Erg. Heft. No. 32, 1843; Schildbach, Ibid. Bd. xl. p. 210; Ribke, Casper's Wochenschrift, 1835, No. 2, S. 16; Streeker, Henke's Zeitschrift, Bd. xxxix. S. 218; Himmer, Neue Zeitsch. für Geburtskunde, Bd. iv. H. 1 S. 3; Montgomery, Signs of Pregnancy, &c., 2d ed., p. 366 et seq. where numerous other references will be found. See also a recent case in Casper's Vierteljahrschrift, 1855, p. 93.

(*tt*) Prager Vierteljahrs., lxvi. 69.

(*u*) Op. cit. p. 366.

(*v*) Handbuch, p. 102.

case in which this membrane was destroyed by an ignorant midwife, in examining a young lady for a supposed prolapsus of the womb. He also refers to a case related by Steinberger, where a young girl who had climbed a tree to gather fruit, fell down in such a manner that a stake, planted underneath, penetrated the vagina an inch and a half deep, producing serious injury, and of course destroying the hymen. A case, in which the hymen was lost in a somewhat similar manner, is related by Jörg. It is sometimes destroyed by riding on horseback, by ulceration, by the first eruption of the menses, and by self-abuse. From a consideration of these circumstances it follows, that while the hymen is far from being good proof of chastity, it may be lost, and the female still be pure. Perhaps the only exception to this remark will be found in cases where the traces of its destruction are recent. Here, of course, the presumption will be, that its laceration is due to sexual connection, unless other means are apparent. Where the female supposed to be violated does not deny having previously had carnal intercourse, the signs from the presence or absence of the hymen do not come under consideration.

§ 449. The other traces of sexual intercourse, such as turgescence and bruising of the parts, with heat and moisture may, where opportunity for an early examination is given, be of some weight when taken in connection with other evidence. An interesting case of *post-mortem examination*, in which these signs were of value, may be found in *Henke's Zeitschrift*, vol. xlvi. p. 41. The external genitals were found swollen and red, the clitoris in a state of partial erection, and the vagina, turgescent and very moist. The mucous membrane of the uterus was highly injected, and the mouth of the womb open. In its cavity there was found a yellowish white liquid of gelatinous consistence, and which from its smell and other peculiarities by chemical reagents was evidently semen. The dead body of the woman had been found lying near a public road, with the clothes thrown up over the face, exposing the lower part of the body, and the thighs stretched widely apart. Other marks of violence were found upon the body, but the cause of death was forcible suffocation. This opinion, given by the official surgeon, was confirmed by the subsequent confession of the criminal, that while violating the person of the deceased, he had endeavored to stifle her cries by forcing the clothes over her face.

§ 450. (2.) *Seminal stains* upon the clothing of the female, form, however, the most reliable medical evidence in rape either upon children or adults. It is of course evident that they will not always be present, since none of the semen may have been shed outwardly. On the other hand, the mere presence of seminal stains upon the female's clothing is, of itself, no proof at all that violence was attempted, and still less that penetration was effected. Moreover, all that constitutes the crime of rape, including penetration, may have been completed without the occurrence of seminal emission. The detection of semen upon the female's clothing must, therefore, be regarded only as corroborative of the signs derived from the condition of the genital organs and other parts of the complainant's body, as well as from other circumstantial evidence. Practically there is considerable difficulty in ascertaining the presence of seminal spots; in illustration of this remark, we cannot do better than

quote the words of the acute Dr. Casper, than whom there is, perhaps, no better authority.(*w*) He says: "In all the numerous cases which have come under my observation, I have never omitted, even when several months have elapsed since the alleged rape, to direct my attention to the *chemise*. But this is not the white, fine, and frequently changed garment of the upper classes of society, but almost without exception, of coarse material, ragged, and not washed for weeks or months; the lower half presenting two large, disgusting stains, made up of a compound of menstrual blood, dirt, excrement, urine, gonorrhœal matter, &c. &c. Nothing is said of this 'in the books;' and hence the possibility of recognizing traces of semen in such a mixture is out of the question. But we have in the microscope, which, as well as I am aware, Rudolph Wagner first used for this purpose, an excellent means of diagnosis."

§ 451. The microscopical characters of semen can be recognized equally in the dried spot and in the recent secretion. In the former, however, the spermatic animalcules will most probably be dead, and in a fragmentary condition. M. Bayard(*x*) has been able to recognize them in spots as much as six years old. The following directions for preparing the spots for microscopical examination are given by M. Bayard: "The tissues covered by the stain should be allowed to macerate in lukewarm water for several hours. The liquid should then be filtered, and if the spots have not entirely disappeared, the tissue should be placed in a porcelain cup with a little distilled water, and heated over an alcoholic lamp to 176° F. If any glutinous matter still remain upon the filter, it should be again macerated in water, to which a sixth part of ether or ammonia has been added. All the resulting liquids should then be poured upon the same filter. The point of this, being carefully cut and reversed upon a glass slide, should be moistened with ammonia to dissolve the fatty matters, and the paper then removed, leaving the matter to be examined upon the glass." This method is objectionable because the degree of heat and the various successive manipulations must tend to disintegrate the animalcules. Schmidt, in his valuable paper,(*y*) recommends the following simple plan, which has, moreover, the advantage that the spot need not be cut out. The inner surface of the spot, which is known by a slight shining prominence in the centre, and easy to find by the light of a candle, should be turned outward, and the tissue so folded that the middle of the spot shall form the apex of a funnel-shaped bag, which should dip in a watch-glass half filled with water. After three or four hours, warm the water in the watch-glass over an alcohol lamp, after the addition of a drop of ammonia. A drop of the water may then be examined for *spermatozoa*, and being dried upon a glass plate, kept for future reference. Koblanck recommends the still simpler method of cutting out the suspected portion of linen, macerating it for five or ten minutes in a few drops of distilled water, and pressing it with a glass rod.(*yy*)

§ 452. Spermatic animalcules exist in all animals capable of procreation,

(*w*) Vierteljahrschrift für ger. ŭ öff. Medecin. Bd. 1. H. 1.
(*x*) Ann. d'Hyg. t. xxii.
(*y*) Die Diagnostik verdächtiger Flecke in Criminalfällen.
(*yy*) Canstatt's Jahresbericht, 1853, vii. 15.

and are found in the semen of man from the age of puberty to quite an advanced period of life. "They are extremely small, scarcely surpassing the one-fiftieth, and at the very most the one-fortieth, of a line in length. The little, oval, somewhat flattened, almond-shaped, and perfectly transparent body, seldom exceeds from the one six-hundredth to the one eight-hundredth of a line in length; the filiform tail at the top is thickish, and so strong, that the double contours are plainly visible, but towards the end it becomes so fine, that it cannot be followed even with the highest powers, to the point; so that it is possible the delicate extremity proceeds further than it can be traced, and that the animalcule is actually longer than it can be determined to be by micrometric admeasurement."(*z*) It is hardly possible for one accustomed to microscopic examinations to confound spermatozoa with other objects, unless they should be *all* in a fragmentary condition. In such case, an opinion should be given and received cautiously. When *any* are found entire, we do not think that there is any other microscopic animalcule which a practised observer can mistake for them. It is important to bear in mind that the absence of spermatozoa from the suspected stains, is not conclusive of their not being seminal. For it is certain that after debilitating sickness or excessive venery, and also in old men the seminal liquor often contains but few, if any animalcules. In a case reported by Dr. Beale(*zz*) fibrillæ were found in the urine bearing a certain resemblance to spermatozoa, but which were concluded to be forms of fungi.

§ 453. With respect to the *chemical* relations of semen, we think little need be said. The spots are usually of a slightly yellow color, somewhat stiff, as if the tissue were starched, and give out the peculiar odor of semen when moistened. They become of a deeper color by being held near the fire, and small whitish specks become visible in them—an effect which is said not to occur with stains from other discharges. Devergie first showed that spermatic stains on linen, when held near the fire, assume a deep nankin-yellow tint, while albuminous spots remain unaltered. This method has proved successful even when the matter of a suspected stain upon some dark-colored stuff has been soaked out of it and transferred to white linen. M. Lassaigne informs us that a similar color is developed in *albuminous* stains when they are heated after having been moistened with a solution of plumbate of potassa, but this effect is not produced in spermatic stains, nor in those produced by gelatin, starch, gum, or dextrine.(*a*) Semen is alkaline, glutinous, and but slowly soluble in water. When seminal stains are not mixed with any other matter, they may be recognized by the following properties, in addition to those just mentioned. The solution obtained by macerating the stain in distilled water is not limpid, is not coagulable by heat, gives a characteristic odor on evaporation, and when the latter is complete, there is left a shining transparent substance, sparingly soluble in water, but yielding a glutinous solution with potash. Pure nitric acid causes no precipitate.(*aa*)

(*z*) Wagner's Physiology, translated by Dr. Willis. London, 1841, p. 9.
(*zz*) Archives of Medicine, No. iii. p. 251.
(*a*) Annales d'Hygiène, 2ème sér. x. 405.
(*aa*) For evidences derivable from traces of *Blood*, vid. BLOOD-STAINS.

§ 454. 5th. *Feigned Rape.*—The following singular case occurred in France. Marie V——, aged twenty-three years, was seen to fall down, apparently in a faint, near the house of her uncle, the district schoolmaster, at the entrance of a field adjoining the public road. Her hands were found fastened by a cord, her handkerchief was tied over her mouth, her hood (capote) was drawn over the upper part of her face and fastened by pins in front of the eyes, leaving, however, a sufficient interval for the use of sight; her clothes were soiled with mud at the lower part only, and her camisole was laced. She did not apparently regain consciousness for several hours: she then related, with circumstantial detail, that she had been assaulted by four young men who had endeavored, though unsuccessfully, to violate her person. A medical examination being ordered, a vast number of superficial linear incisions were found, made apparently with the point of a knife or scissors; there were no contusions, or marks of recent violence on the genital organs, or their vicinity. Her clothes were not torn or crushed, and in her pockets a penknife and scissors were found, on the points of which there were slight traces of blood. The girl at last, after much hesitation, confessed that she had not been the victim of any assault, but that, in a paroxysm of hysteria, without any reason to account for the strange idea which took possession of her mind, she had herself inflicted these wounds with scissors on the parts of her body which she had been able to reach. The legal proceedings were consequently stopped.(*b*)

§ 455. 6th. *Rape by Females.*—An instance of this kind is related by Casper, in which a child, only six years of age, received a gonorrhœa from his governess, with whom he slept. In another and far more horrible case, a mother satiated her unnatural lust with her own son nine years of age, upon whose body, however, no traces of the crime were perceptible.(*bb*) Two cases have occurred in France, in one of which, a female of eighteen years, obliged a boy, under fifteen years, to comply with her wishes; and in another, a girl of eighteen was charged with rape upon two children, the one of thirteen, and the other only eleven, years of age. She was affected with syphilis, which she communicated to the children. It is stated also, that, from a narrowness of the vagina, she was unable to gratify her propensities with adults. The only means by which the rape can be established through medical evidence, is where gonorrhœa or syphilis has been thus communicated.

§ 456. 7th. *Pæderasty.*—This unnatural crime demands but little notice from us. It has been customary for authors, in describing the physical results of this vice, to enumerate various local injuries, such as laceration and a patulous condition of the sphincter ani, prolapsus of the rectum, and ulcerations, together with constitutional effects, as consumption, dropsy, &c., as the inevitable results by which the commission of it could be ascertained. Tardieu,(*c*) speaking of the recent signs of unnatural violence, says that they are found to differ with the amount of force employed, the size of the organs, the youth of the victim, and his freedom from previous pollution of the same kind. In different cases they vary from redness, excoriation, and painful heat

(*b*) Lond. and Ed. Month. Journ. Dec. 1853, p. 550; from Gaz. des Hôp. Oct. 30.
(*bb*) Gericht. Med. ii. 129.
(*c*) Attentats aux mœurs, p. 133.

in the anus, and difficulty in walking, to fissures, lacerations, extravasation of blood, and inflammation of the mucous membrane, and its subjacent cellular tissue. The observations of Parent-Duchatelet,(*cc*) and of Casper,(*d*) show, however, that such consequences are far from being even the common effect of this disgusting vice. The former of these authors speaks from a long experience; he says that he has *never* observed the results above enumerated. Dr. Casper, in a valuable monograph on this subject, in which he communicates a number of cases which fell under his notice, says, that none of the signs enumerated by authors are to be depended upon. In one case, however, mentioned by him, in which a medical examination was obtained *immediately* after the commission of the crime, the sphincter ani was lacerated to the depth of two lines, and the parts irritated and painful. The most frequent result which he witnessed may be described in the words of Zacchias, strangely heretofore overlooked: "Multo magis frequentem tam nefandi coitus usum significare poterit ipsius podicis constitutio, qui cum ex natura rugosus existat, ex hujusmodi congressu lævis ac planus efficitur, obliterantur enim rugæ illæ in ani curriculo existentes ob assiduam membri attritionem." He also describes a funnel-shaped depression of the nates, as a frequent result. It should be remembered, however, that these observations were made upon persons whose lives had been spent in the practice of this degrading vice, or who had been for a considerable time in the practice of it. Syphilitic ulcerations or growths, in these parts, although of suspicious origin, may be really due to other causes than a direct transmission by unnatural connection. Marks of violence may be naturally expected in young persons.

The frequency of this crime is probably much greater than the statements above quoted from Parent-Duchatelet and Casper would seem to indicate. Tardieu states that on two occasions the sudden descent of the Parisian police upon certain dens of vice resulted in the capture of eighty-seven in the one, and of fifty-two in the other, persons found *flagrante delicto*. From these in part he obtained the perfect confirmation of the description of Zacchias in regard to the signs of this vice when habitually indulged in. In two hundred and five cases of avowed criminality, these indications were wanting only fourteen times. In addition to the details already given, he describes relaxation of the sphincter ani, dilatation of the anus, incontinence of fæces, ulcers, piles, fissures, fistulæ, &c., as consequences of this detestable crime.

It is unfortunate that there is no medical evidence by which the crime can be brought home to the *active* transgressor; Tardieu, however, describes as effects of habitual indulgence in it, a tapering form of the whole penis, when this organ is slender, and when it is of large dimensions, a similar shape of the glans alone.

(*cc*) De la Prostitution dans la ville de Paris, vol. i. p. 225.

(*d*) Vierteljahrschrift für ger. u. öff. Med. Bd. i. H. 1. Also Ibid. Bd. vii. H 2. For an historical account of this vice, see "Geschichte der Lustseuche im Alterthume nebst ausführlichen Untersuchungen über den Venus und Phalluscultus, Bordelle, Νυσσος δόλεια der Skythen, Pöderastie und andere geschlechtlichen Ausschweifungen der Alten, &c." By Dr. Julius Rosenbaum. Halle, 1845. 8vo.

Legal Relations of Rape.

§ 457. 8th. The points to which medical testimony is most likely to be invited, in prosecutions for rape, are the following:—

1st. Submission of prosecutrix.

(1) From artificial stupefaction.
(2) From ignorance of the nature of the act.
(3) From mistake of person.
(4) From fear.

2d. Prior want of character of prosecutrix.
3d. Subsequent suppression of the fact by prosecutrix.
4th. Extent to which coition was carried.
5th. Want of age of defendant.
6th. Want of sexual capacity of defendant.

The law on each of these points will be now briefly considered.

(1.) *Submission of Prosecutrix.*

This may happen from either of the following causes:—

(*a*) *From Artificial Stupefaction.*(*d*)

§ 458. It makes no matter whether the drug was given for the purpose of producing stupefaction, in order that the rape might be effected on the female thus made unconscious, or whether it was administered for the purpose of causing sexual excitement, and thereby leading to a voluntary submission. It is rape in either case; the law being, that the overcoming of chastity, and the destroying of resistance by artificial means, is rape, when the offence is consummated. If the result of the dose be stupefaction, and if on the woman thus become insensible, carnal intercourse be effected, it is rape, though the intention was merely to excite. Thus, where the prosecutrix was made drunk by the prisoner, who then violated her person, it was held in England, where, from the offence being capital, it is kept within its strict common law limits, that the crime was rape, though the jury expressly found that the liquor was given with the intent of *stupefying*, not *exciting*.(*e*) And in this case it was held, that where the insensibility is the defendant's act, and where the defendant knows that "the act was against the prosecutrix's consent at the last moment she was capable of exercising her will," it is rape. On this point agreed all the ten judges of England, constituting the final Court of Revision in criminal causes; and it was not required by the exigencies of the case that they should go further. Several, however, thought—and this view is in accordance with the analogous cases to be hereafter noticed—that the crime was consummated by the mere act of knowingly violating an insensible woman, whether the insensibility was produced by the defendant himself or not.

(*d*) See the medical relations of this point, *ante*, § 435.
(*e*) R. *v.* Camplin, 1 Car. & K. 746; Wh. Cr. Law, § 1140.

§ 459. In the late prosecution of Dr. Beale, in Philadelphia, which has been noticed above,(*f*) the point was not made, and it was assumed by both sides, that carnal intercourse with a woman who was stupefied by chloroform was rape, though the chloroform was administered, at her request, for the purpose of facilitating the extracting a tooth. And if the law—and the cases to be subsequently noticed unite with the reason of the case in indicating that it is—it goes to establish the broad position, that rape is sexual intercourse with a woman, not *against*—as has been formerly said—her will, but *without* it.

In January term, 1860, Dr. Davis Green was tried before the Common Pleas of Mercer County, Ohio, for a rape on Jane Gray. According to the statement before us, which was prepared by the defendant's counsel for the *Western Law Monthly*,(*g*) the prosecutrix was a "truthful, virtuous girl, robust and healthy, of limited education and intelligence, though of good natural sense, aged seventeen years on the 21st of August, 1857." The evidence, according to the same statement, was that "on the night of the 23d of June, 1857, she lodged in bed with a daughter of defendant of about the same age, in the northeast corner room of a village hotel, in Mercer County; that in the adjoining room, south, there lodged a man and his wife, and in the adjoining room, west, with an unfastened door between them, there lodged the defendant, and other persons in other beds; that the prosecutrix and her bed companion retired about 10 P. M., and after talking a short time fell asleep; that during the night, the first thing remembered by the prosecutrix was that the defendant had her by the arms, pulling her out of bed; that he said he was Dr. Green, and he had come to have sexual intercourse with her; that he placed her in a position with her feet touching the floor, and her weight partially resting on them and on the pillows; that in that position he had complete sexual intercourse with her; that she experienced the pain of rupture of the hymen, but experienced upon her clitoris a pleasurable sensation from the coition; that the act lasted but a few minutes; that upon leaving her the defendant said to her she must never tell it, that it would not hurt her; that he held his hand upon her mouth, and she felt a rag between his hand and her mouth; that she heard what was said, was conscious of all that occurred; that she tried to speak, but felt so weak and scared that she could not, or would not speak aloud, and did not say but a word or two—said, 'Go away; oh, dear!' that she tried to force him away, but could not; that she experienced a ringing sensation in the head, felt weak, drowsy or sleepy, but did not sleep any more that night; that she remained in bed until morning, made no outcry, and told no one of the occurrence until about last of December, 1857; that next morning she felt unwell, and presented a sad and gloomy countenance, and for a week or two was nervous and easily alarmed; that the ringing in the head lasted a day or two; for three or four days she could not sit up for any considerable time; the symptoms of the weakness lasted two weeks; that this time, 23d June, was the usual period for the return of the menstrual discharge, and symptoms of it were felt, but no actual discharge had yet occurred; that

(*f*) See *ante*, § 445.

(*g*) April, 1860, p. 183.

on the morning of the 24th she observed a spot, as of blood, on her chemise, the only night dress she wore, which she supposed was a slight menstrual discharge, but that no discharge followed at any time thereafter; that she conceived and gave birth to a child on the 26th March, 1858; that after retiring to her room on the 23d June, before going to bed, her nose bled; that she never saw chloroform before, but smelled it on trial, and believes the smell to be like that she experienced on night of 23d June; that she first thought defendant had intercourse with her twice that night, and told others so, but, on reflection, was sure it was only once; that she saw him with shirt and drawers on, but had no other clothing; that she made an effort twice with both hands to resist him, but could do nothing; she weighed 130 pounds; was in good health, and had always enjoyed good health; did not smell medicine when first awoke, but did after defendant left her room, in about six minutes; the effect was unpleasant, cannot say painful; that her mind was clear from the time she awoke, and she knew everything; her feet were about six inches; more than half her weight on her feet, the rest thrown back on the upper part of the bed; the rail of the bed came in contact with the middle of her thighs; she made no effort to awaken the daughter of defendant, though her hand was near or touching hers; did not halloo nor call any body; her hands were not restrained at any time; defendant only touched her with one of his hands; is sure she remembers everything that occurred accurately."

The defendant was a physician. A large amount of evidence was offered to prove or disprove the offence. The defendant's daughter, a highly intelligent young lady, testified that she was not disturbed, perceived no odor of medicine in the room, and noticed nothing unusual in the appearance of prosecutrix the next morning. The defendant was just recovering from a long and severe attack of phlegmonous erysipelas. The left hand very sore; poulticed; the neck very stiff and sore, and the right hand also sore and in ulcers. No one about the house heard any noise or disturbance during the night, after parties had retired. The partitions between the rooms were of boards; had stood twenty years; had shrunk so that there were cracks between them nearly an inch in width. The boards were an inch in thickness. The bed of ordinary size.

It was also testified, as we learn from the judge's notes, that the defendant, before retiring to bed, took a vial from his pill-bags, which he said contained a weak solution of chloroform; that he bathed the court-plaster on his hand with it, saying that it relieved pain; that he took this vial up to bed with him, saying that he might need it in the night, if his hand became painful; that when he retired he asked which room the girls were in, and selected a bed near the door of their room, saying that he could be near the girls and could wake them early; that he rose before them next morning, and they were called to breakfast by other persons.

He offered no evidence as to his character. He is a married man, age over forty years.

A witness swore (without objection) that he once, under the influence of chloroform, had a tooth which the surgeon endeavored to pull, but it broke off, when an effort was made to extract the root with a screw; that he saw,

heard, and knew all, but his volition was overcome—had no inclination to resist.

The court (Lawrence, J.), in charging the jury, adopted substantially the views in the text. The defendant was convicted, and a motion for a new trial refused.(*e*)

(*e*) From the judge's charge we extract the following:—

"When the *will* acquiesces in *coition*, there cannot, as a general rule, be any rape. But the acquiescence which defeats a prosecution for rape, is that of a will so far under the enlightened guidance and control of the other faculties, that the mind can fairly comprehend the nature, and judge of the consequences of the act, unless, as before stated, the defect of capacity is unknown to the accused. (The judge, in a previous part of the charge, had said that if the prosecutrix, having the capacity to understand the nature, and judge of the consequences of sexual intercourse, and the power to resist it by act or word, and neither such capacity or power was overcome by force, fear, or chloroform, her acquiescence in the act would defeat a prosecution for rape.) If the faculties have been, to some extent, suspended by chloroform, but enough remain to reasonably comprehend the nature, and judge of the consequences of the act, their acquiescence in coition will defeat a prosecution for rape.

"But if, through the influence of chloroform, either directly upon the *will*, or the *consciousness*, or other *faculties* of the mind or the *sexual feelings* and emotions, the mental capacity is so benumbed, suspended, or perverted as to be unable reasonably to comprehend the nature and judge of the consequences of coition, and by reason of such condition, known to the defendant, the act is acquiesced in or consented to, such acquiescence or consent will not alone defeat a prosecution for rape. Rape may exist with such acquiescence, thus knowingly obtained.

"It is of the utmost importance that you should ascertain whether chloroform was administered; and if so, whether it deprived the prosecutrix of mental and physical powers.

"If it be assumed (and whether it be, is for the jury to say) that there is evidence tending to show that chloroform was administered to the prosecutrix while asleep; that sexual intercourse was had with her; that she partially or wholly awoke before it commenced; that she was conscious of it, and all the movements attending it; that she could and did hear and understand words spoken in a low tone; that the intercourse produced upon her clitoris a pleasurable sensation; that this was preceded by the pain of a ruptured hymen; that she did not speak; that she felt a desire to resist physically, endeavored to do so, but could not; that the act was followed by pregnancy, and the birth of a child in 276 days; that she was a vigorous girl, in her seventeenth year, virtuous, truthful, of limited education and intelligence; that the act was at the proper time for the return of the menstrual period, but before any actual discharge; it will be important to ascertain whether there is any stage in the effect of chloroform upon the human system where these facts can exist consistently with the idea that such intercourse could be had without her consent.

"The inquiry may be assisted by ascertaining whether the various powers of the mind and body fade away under the influence of chloroform, gradually and coequally, and return in like manner, as the influence passes off; or whether some—and if so, what ones—precede others in thus fading away and being restored, and the order thereof, in all the various stages of the influence; and whether some—and if so, what—faculties are retained, and the extent and capacity of them.

"In the case which I have assumed, where the sense of hearing remained, and the sensations of pain and pleasure were felt in a greater or less degree, these facts would tend to show that the stage or condition of *anæsthesia* had either not been reached, or was past; and if so, it might be much more probable that memory would retain its power than if the facts were otherwise. And if the capacity to remember existed, statements made by its aid might be reliable. But as failure to resist by *word* and *act*, having the capacity to do so, would be strong if not sufficient evidence of acquiescence in the *coition*, it would at once become necessary to determine if the faculties of *hearing* and *feeling* could coexist in a sound body, without either the capacity to speak or make forcible resistance. If that be not possible, then due weight should be given to such consideration, in determining whether she acquiesced in the coition. But if the capacity to hear, feel, and remember be consistent with incapacity to speak or forcibly resist, then the evidence of guilt may thereby be enhanced. What may be the truth, you will determine from the evidence in the case.

"But if the prosecutrix had the capacity to hear, feel, and remember, and a capacity to speak and forcibly resist, but the inclination to do so was lost, the will overcome by the action of chloroform, either operating upon the *will* faculty, or the *judgment* and

§ 460. (*b.*) *From ignorance of the nature of an act.*—A striking instance of this is to be found in the case of the imbecile girl already mentioned, who had no notion of what the sexual act consisted, and who was totally unable to account for her pregnancy, except by the statement that her cousin had played with her on the sofa.(*f*)

§ 461. In England the point received a judicial decision on the trial of a physician, who had sexual connection with a young girl, who made no resistance, solely from a belief that the defendant was, as he represented, treating her medically. All the judges held the case was rape.(*ff*) And it was said in another case, where the patient was directed to lean forward, for the purpose of receiving an injection, and where sexual intercourse was then attempted, that if the attempt had succeeded, rape would have been complete.(*g*)

§ 462. It is no defence, also, that the party ravished gave consent, or even aided in the commission of the offence, when from her very tender years she is to be presumed incapable of knowing the nature of the act.(*h*)

§ 463. From the same reasoning it results that it is a rape to have carnal intercourse with an idiotic or insane woman, even though her consent is given, she being incapable of intelligent submission.(*i*)

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reflective faculties (or sexual emotions), so that the mind was thereby incapable of fairly comprehending the nature and consequences of sexual intercourse, and the defendant, knowing these facts, had unlawful carnal knowledge of her, forcibly, that would be a rape. And it would in such case be wholly immaterial whether the entire mind was disordered and overthrown, or only such faculties thereof as are rendered incapable of having just conceptions, and drawing therefrom correct conclusions, in relation to the alleged rape.

"Whether the physical or mental capacities I have named could operate normally while other faculties of the mind—as the judgment, the understanding, the reflective and reasoning faculties—were so deranged or overthrown as to destroy the capacity to comprehend the nature and consequences of coition, is a question of fact for the jury to determine, upon all the evidence in the case.

"But if the prosecutrix had the capacity to hear, feel, remember, speak, and to resist, or in any event, it should not be presumed her will was overcome, without proof of that fact beyond a reasonable doubt.

"If chloroform may produce *delusion* in the mind of its subject in any one of its stages, you will inquire if it existed in this case; whether its existence is consistent with the other mental and physical phenomena which you may find to have existed; and you will give due effect to your conclusions on this subject.

"With these principles as to what are necessary to constitute rape, the jury will proceed to inquire into the prominent points of controversy, and ascertain if it is proved that the defendant forcibly had unlawful knowledge of Jane Gray; and if so, was it against her will?"

(The judge then read to the jury section 212 of 3 Greenl. Ev., and section 468 of Wharton and Stillé's Med. Jur., and called the attention of the jury to the prominent points of evidence relied upon to prove and disprove the fact of sexual intercourse, and upon the subject of acquiescence.)

Verdict of the jury, Guilty.

Motion for new trial overruled.

Motion in arrest of judgment continued to next term, by agreement of counsel.

(*f*) See *ante*, § 445.

(*ff*) R. *v.* Case, 1 Eng. R. 544; Wh. Cr. Law, § 1143.

(*g*) R. *v.* Stanton, 1 Car. & Kir. 415.

(*h*) Hays *v.* People, 1 Hill, N. Y. R. 351.

(*i*) This point was lately affirmed by a highly respectable Ohio court, in the following case: The defendant was indicted—1. For having committed a rape on the person of Louisa Dowler; 2. For an assault with the intent to commit a rape on said Louisa; and, 3. For having carnal knowledge, she, the said Louisa, being an insane woman, and he, said defendant, knowing her to be such. The defendant pleaded not guilty, and the cause was tried by a jury at the March Term of the Court of Common Pleas. The evidence on the trial proved that the said Louisa Dowler was of unsound mind,

§ 464. (*c.*) *From mistake of person.*—Very early in the judicial history of this country, a conviction of rape was sustained in New York by a very

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and had been so from her nativity: though she was not so absolutely destitute of mind that she did not perform the necessary functions and calls of humanity; but that she had not mind enough to testify as a witness or to be held legally responsible for her acts, whether civil or criminal. The words of the statute are: That if any male person, 17 years old and upwards, shall have carnal knowledge of any other woman than his wife, such woman being insane, he knowing her to be such, every person so offending shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be imprisoned in the penitentiary and kept at hard labor not more than ten nor less than three years. Mr. Knowles for the State, Messrs. Nye and Jewett for defendant, claimed that the said Louisa being an idiot, had no will, and therefore that a rape could not be committed on her person against her will: it was further claimed that the word insane, in the 6th section of the Act, did not embrace an idiot, and hence the defendant could not be convicted of either of the charges embraced in the indictment. Mr. Justice Nash.—It is claimed, *first*, that a female idiot is not the subject of a rape; that she has no will, and hence an act cannot be done to her person against her will. No authorities are cited for this startling position. On looking into the books I can find no such distinction intimated; and if such was the law, it is singular that so important a qualification of the crime of rape should not have been noticed hitherto in any treatise on this subject. Rape is defined to be, the having carnal knowledge of a female *forcibly and against her will*. There is here no limit to the use of the word female; nothing said as to the soundness or unsoundness of her mind as to idiocy or insanity. In this respect our statute follows the common law, and must therefore be construed as the same words were construed in the definition of the crime at common law. There is another consideration not to be overlooked. The section providing for punishing assaults with a criminal intent, declares that an assault committed on another with the intent to commit a rape, shall be criminal. Now, if a rape cannot be committed on the person of an idiot, then it is no crime to assault her person with such an intent. The same question applies also to assaults committed on an insane person; since this argument places them without the protection of the law, punishing the crime of rape. Nor are insane persons protected under the 6th section, since the crime there described is committed only when the perpetrator knows the woman to be insane. Indeed, that section is clearly limited to the case of a male person's knowingly having sexual knowledge of an insane female without resistance on her part, and with her acquiescence. Hence this section cannot be made to embrace the case of one having such sexual intercourse forcibly and against the will or resistance of such insane female. It is further claimed that an idiot is not an insane person under the meaning of that term in the 6th section. The result, then, follows, that a female idiot is left wholly unprotected against this class of crimes. A person cannot be punished for having carnal knowledge of her person forcibly and against her will, as she has no will to overcome; she is not an insane person, and so not under the protection of the 6th section, and neither an idiot nor an insane female is protected against assaults with intent to commit a rape, since a rape cannot be committed on the person of either. It must require some very cogent reasoning, or some very convincing authorities before the court could be induced to give a construction to a statute which must lead to such results. But here is no such authority; no such decision has been found. Is there any more force in this reasoning? Let us examine it for a moment. In the first place, where the carnal knowledge is had by *force*, it must be against the will of the female. Nor need there be any direct evidence of this action of the will; the law implies the want of consent from the force itself. It is the *consent* of the female which takes away all criminality from this connection; it is this want of consent which renders this connection, obtained by force, criminal. Hence if an idiot has no will to be overcome, she has none to consent, and then the law implies that the act being accomplished by force is done against her will. But is it true that an idiot or insane person has no will? What is the definition of these two words? Do they imply a *loss of will* or a mere unsoundness of mind? These words are thus defined by Webster: "Idiot—a natural fool, a fool from birth; a human being, in form, but destitute of reason or the ordinary intellectual powers of man. Insane—unsound in mind or intellect; mad; deranged in mind;" and one of the words used to define *insanely*, is *foolishly*. Fool is defined to be one who is destitute of reason or the common powers of understanding; an idiot. Some persons are born *fools*, and are called *natural fools;* others may become *fools* by some injury done to the brain. In Chitty's Medical Jurisprudence, p. 348, an idiot is defined to be "a person who has been *defective* in intellectual powers, from the instant of his birth, or at least before his mind had received the impression of any idea." Again, Chitty

eminent judge—Thompson, C. J.—upon evidence showing that the prosecutrix mistook the defendant for her husband, and permitted his embraces, under that impression.(*k*) The same point was again taken in subsequent cases: one in New York,(*l*) and another in Connecticut.(*m*) In England it was at first thought that such evidence would not sustain a conviction;(*n*) though afterwards, convictions of the assault with intent, were ordered.(*o*) The in-

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says "that idiocy consists in a defect or sterility of the intellectual powers; but it may be induced in after life; while lunacy or madness consists in a perversion of intellect." All these definitions imply either a *weakness* or *perversion* of the mind, or its powers, not their *destruction*. The powers are still all present but in an impaired and weakened state. Hence an idiot cannot be said to have no *will*, but a *will weakened and impaired*—a will acting, but not acting in conformity to those rules, and motives, and views which control the action of the will in persons of sound mind. Indeed, in an insane person the will is too often fearfully active, and wholly uncontrollable by reason or persuasion. There is here no lack of will, but simply a *perversion* of it. Nor is this the most conclusive answer to this argument. If there is no will, how are voluntary actions continued? Not only actions which, like respiration, are instinctive, and independent of the will; but eating and numerous other acts which necessarily imply the exercise of the will are performed by idiots and insane persons; and their exercise demonstrates the existence of a will—of a will which can assent to, or dissent from, what are clearly voluntary acts. I have therefore no hesitation in holding, that both idiots and insane persons are possessed of a will, so that it may be legally and metaphysically said, that a carnal knowledge may be had of their persons *forcibly* and against their will. The next inquiry is, what is the proper construction to be given to the word *insane?* In the 6th section of the act for the punishment of crimes, Curren's Revised Statutes, p. 184, that section provides: "That if any male person seventeen years old and upward, shall have carnal knowledge of any woman, other than his wife, such woman being *insane*, he knowing her to be such, shall be deemed guilty," &c. It is claimed that this word *insane* does not embrace a female who is an idiot. We have already seen that idiocy may be induced after infancy, as well as be congenital, Chitty's Med. Jurisp. p. 347, and that both terms are defined by the same words, *unsoundness of mind*. In the one case this unsoundness of mind develops its existence in want of capacity to reason at all; or, at least, in a much less degree than the generality of mankind; while in the other there is, perhaps, greater acuteness, though upon false and fancied hypothesis. (Chitty's Med. Jurisprudence, p. 348.) Still, in both cases, unsoundness of mind is the cause. The very origin of the word *insane* demonstrates this; in its Latin origin, it is a word simply meaning *unsoundness* and nothing more; and in the popular language it is used in this sense to this day, whatever may be the specific meaning attached to it by writers on mental diseases. If, then, the object and policy of this statute embraces idiots as well as lunatics, there is nothing in the use of the word *insane* which absolutely precludes us from giving that elementary meaning to the word in this statute. The reason of this provision clearly applies to idiots as well as to lunatics; if there is any reason in the case of female lunatics, why sexual intercourse with them should be prohibited, equally strong is the reason why it should not be permitted with female idiots. If the offspring in one case might be affected with insanity, so in the other it might with idiocy. Whatever reason, therefore, can be found to so declare the law in relation to female lunatics will apply equally forcibly to idiots. If the one class ought to be protected, equally so ought the other. Such, then, being the manifest scope of the law, I can have no hesitation in concluding that such was the intention of the legislature; that this word *insane* was used in its elementary and popular meaning, as descriptive of that unsoundness of mind, which renders individuals civilly and criminally irresponsible for their acts, whether the unsoundness uncloses itself in idiocy or lunacy. In accordance with these views I hold that a female idiot, or an insane female, is the subject of rape; and, hence of an assault with the intent to commit that crime; and that a male person, of proper age, who shall have carnal knowledge of a female idiot, knowing her to be such, is guilty, under the 6th section, of having carnal knowledge of an insane woman, knowing her to be such. The jury were so charged and they returned a verdict of guilty of an assault with an intent to commit a rape, and not guilty on the other two counts. And sentence was passed on the prisoner.—State *v.* Crow, Common Pleas of Athens County, Ohio.—*Western Law Journal*, vol. x. pp. 501–5.

(*k*) 1 Wheel. C. C. 381. (*l*) People *v.* Metcalf, 1 Wheel. C. C. 378.
(*m*) State *v.* Shepard, 7 Conn. 54. (*n*) R. *v.* Jackson, R. & R. 487.
(*o*) R. *v.* Saunders, 3 C. & P. 265; R. *v.* Williams, id. 286.

timation, at the same time, was thrown out, that if the question arose again, it would be reconsidered; and, indeed, it is difficult to reconcile an acquittal under such circumstances, with a conviction upon evidence that consent was given under the impression that the act was, as it was represented to be by the aggressor, an application in a course of medical treatment.(*p*)

In Virginia, Tennessee, and Alabama, it would seem that such intercourse does not constitute rape.(*pp*)

§ 465. (*d.*) *From fear.*—If consent is forced by fear of death, or by duress, it is no defence that such consent was given.(*q*)

§ 466. (2.) *Prior want of character of prosecutrix.*—While it is no defence that the woman was a common strumpet, or even that she was the defendant's mistress, the question of prior chastity is always a material one to be considered by the medical examiner, since unchastity can be shown by the defendant, not as an excuse or justification, but as a fact throwing much light on the value of her testimony. Thus it has been expressly decided, that it is competent for the defendant to show that the prosecutrix's previous character for chastity was bad, and that she had before been connected with himself; though the general opinion in England has been, that he cannot show particular acts of unchastity, except those committed with himself.(*r*) But, even in England, a wider range seems now to be encouraged, it having been held admissible to ask the prosecutrix "whether she was not, on the Friday last, walking on the High-street to look out for men," and, upon her denying this, to call witnesses to contradict her.(*s*) And in New York it is now ruled, that the prosecutrix may be asked whether she had not had previous connection with other men; and that, in such case, she is not privileged from answering.(*t*)

§ 467. The *object* of such testimony is twofold: 1st, in making the fact of *coercion* less likely; and, 2d, in diminishing the witness's weight as respects credibility generally. It is less likely that a strumpet, or one holding herself out as submitting to illicit intercourse, though on special inducements or occasions alone, would resist to the extremity which a prosecution for rape requires, than would a chaste woman. And although, under ordinary circumstances, it is inadmissible to impeach *veracity* by attacking *chastity*, yet, in such an issue as the present, this seems but proper. Such being the case, it will be seen that medical testimony as to the prosecutrix's prior condition is of peculiar value. Evidence of any prior venereal complaints, or of any other facts tending to prove previous illicit intercourse, it is always proper, under such circumstances, to receive.

§ 468. (3.) *Subsequent suppression of the fact by prosecutrix.*—It is here that the presence or absence of a medical examination tells most forcibly. The omission of the friends of the injured party to obtain an instantaneous medical

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(*p*) See Wharton's Cr. Law, § 1144. (*pp*) Ibid.

(*q*) 1 Hawk. P. C. Ca. 41; Whar. C. L. § 1142.

(*r*) R. *v.* Hodgson R. & R. 2; R. *v.* Clarke, 211 Stark. 243; R. *v.* Barker, 3 C. & P. 589; R. *v.* Martin, 6 C. & P. 562. See People *v.* Abbott, 19 Wend. 192; Campo *v.* State, 3 Kelley, 417. Whar. C. L. §§ 1149-51.

(*s*) R. *v.* Barket, 3 C. & P. 589.

(*t*) People *v.* Abbott, 19 Wend. 192.

inspection may be their misfortune, arising from ignorance or false shame; but it is better that they should suffer from it, in the acquittal of the offender, than that the stimulus to supposititious prosecutions be given, which will always result from dispensing with this most salutary check. It is not, of course, pretended that the *want* of immediate medical inspection is a legal *bar*. This it is not; for no matter how suspicious the omission may be, it is for the court to leave the whole question of the reality of the alleged rape to the jury alone. But it is maintained that it is a salutary rule of policy, which juries should themselves enforce, in no case to sustain a prosecution for rape unless the prosecutrix's evidence is corroborated by the testimony of experienced persons, medical or otherwise, who were called in to inspect her person as soon after the occurrence as the circumstances of the case would allow. And such seems to be the case in England, where the courts agree in telling the jury that unless there be positive medical evidence of some sort of violence to the person, there is not sufficient penetration to constitute the offence.(*u*)

The nature and character of the testimony so to be obtained has been already discussed. Under this head it is enough to say that in all cases the results of, as well as the fact of, an examination are admissible evidence. It is admissible, also, for the prosecutrix to prove that she made a complaint, though she cannot put in evidence what were the particulars of her statement.(*v*)

§ 469. (4.) *Extent to which coition was carried.*—The English law, as to the extent to which the act must have been consummated, has undergone much fluctuation. Thus it was at first held that *emission* must be proved. Great difficulty was thus produced, which was obviated by the statute of 9 Geo. IV. c. 31, which dispensed with proof of emission. Then the question arose as to the *degree* to which penetration must be shown to have taken place. In Ireland it was said, somewhat loosely, by Lord Carlton, C. J., in 1800,(*w*) that it was enough if the prosecutrix swore to "carnal knowledge of her person." But in England it has always been held that the entrance of the private parts of the man within the private parts of the woman must be specifically proved. The first case tried on this point laid down a rule which, though once or twice subsequently departed from, may now be considered as the settled law, viz., that though it is not necessary to prove the *hymen* to have been ruptured, yet the evidence of penetration must be positive.(*x*) The only point in which this rule has fluctuated has been in respect to the necessity of a rupture of the *hymen*. Thus, in 1832, in a case before Mr. Baron GURNEY, that learned judge said that "if the hymen is not ruptured, there is not a sufficient penetration to constitute the offence."(*y*) In 1839, however, Chief Justice TINDAL declared the only question for the jury to be, whether the private parts of the man did or did not enter into the person of the woman; and that, therefore, though it appear from the evidence, beyond all possibility of doubt, that the party was disturbed immediately after penetration, and before the completion of his purpose, yet he must be found guilty of having

(*u*) R. *v.* Gammon, 5 C. & P. 321, *post*, §§ 469, 470. (*v*) Wharton's C. L. § 1150.
(*w*) R. *v.* Lidwell, 1 M'Nally's Evid. 606.
(*x*) R. *v.* Russen, 1 East, P. C. 438, 439. (*y*) R. *v.* Gammon, 5 C. & P. 321.

committed the complete offence of rape.(z) In the same year a boy named John Jordan was indicted for carnally knowing a girl under ten years; and there being no evidence of a rupture of the hymen, it was insisted by the prisoner's counsel, on the authority of Gammon's case, just cited, that the offence had not been completed. The defendant was acquitted on other grounds; but Mr. Justice WILLIAMS told the jury, "I am of opinion, as matter of law, that it is not essential that the hymen should be ruptured. In the case of Rex *v.* Gammon it was proved that the hymen was ruptured, and the point was, therefore, not necessary to the decision of that case. I also think that it is impossible to lay down any express rule as to what constitutes penetration. All I can say is, that the parts of the male must be inserted in those of the female, but I cannot suggest any rule as to the extent."(a)

§ 470. Shortly previous to this, though not reported until afterwards, was a trial before Mr. Justice BOSANQUET, in which Mr. Justice COLERIDGE and Mr. Justice COLTMAN concurred with that learned judge in saying that it "is not necessary, in order to complete the offence, that the hymen should be ruptured; but that, where that which is so very near the entrance has not been ruptured, it is very difficult to come to the conclusion that there has been penetration so as to sustain a charge of rape." In consequence of this charge, the defendant was acquitted of the rape, and convicted of the assault, although there was evidence from the surgeon who attended the injured party that her private parts internally were very much inflamed, but that, in consequence, he could not tell whether the hymen was ruptured or not.(b) In 1841, however, the question was put to rest by a case which came before the twelve judges, in which the early decision of R. *v.* Russen was finally reviewed and sustained. The prisoner was charged with having feloniously ravished Mary Ann Wesley; and it was very clearly proved by her—she being a girl between eleven and twelve years of age—as well as by a woman who detected the prisoner in the act, that carnal intercourse had been attempted. With respect to penetration, a surgeon was called, who deposed to the appearances in and about the child's private parts, and stated his belief that penetration had taken place, but that the hymen, which in the prosecutrix was placed at the usual distance from the opening, had not been ruptured. The jury returned a verdict of guilty, finding "that there had been penetration, but that the penetration had not proceeded to the rupture of the hymen." On this finding the prisoner was sentenced, and the judgment sustained by all the judges.(c) In accordance with this result, in a case tried in 1844, where the surgeon deposed that "the hymen of the child was not ruptured, but that upon the hymen was a venereal sore, which must have arisen from actual contact with the virile member of a man," Mr. Baron PARKE left it to the jury to say "whether, at any time, any part of the virile member of the man was within the labia of the pudendum of the prosecutrix; for if ever it was (no matter how little), that will be sufficient to constitute a penetration, and the jury ought to convict the prisoner of the complete offence." The verdict was, not guilty.(d)

(z) R. *v.* Allen, 9 C. & P. 31.
(a) R. *v.* Jordan, 9 C. & P. 118.
(b) R. *v.* M'Rue, 8 C. & P. 641.
(c) R. *v.* Hughes, 8 C. & P. 752.
(d) R. *v.* Lines, 1 C. & K. 393.

§ 471. In this country, the rule thus laid down—that there must be *some* entrance proved of the male within the female organ, but that neither rupture of the hymen nor emission need be proved—has been universally followed.(*e*) Perhaps the furthest limit to which it has reached, is in a recent case in Philadelphia, where, though there was no medical examination, it was held that proof by the prosecutrix of pain in the sexual organ, and of the juxtaposition at the time of the defendant's face to her own—she at the time being in a dentist's chair, under the influence of ether—was enough to justify a jury in presuming that there was penetration, and that the penetration was sexual. The general result of both medical and legal opinion, however, is, that while the learned and able judge who tried the case properly left it to the jury as a question of fact, as he was obliged to do, to determine whether penetration had taken place, the verdict was not sustained by the evidence, and forms an unsafe precedent for the future.(*f*)

§ 472. (5.) *Want of age of defendant.*—There is an absolute rule, in this respect, at common law, viz., that an infant *under* fourteen is to be presumed positively incapable of committing a rape, though he may be convicted of an assault with an intent to ravish.(*g*) *Over* fourteen, this question resolves itself into the ordinary one of capacity.

(6.) *Want of sexual capacity of defendant.*—This is purely a medical question, which has been examined under another head.(*h*)

(*e*) State *v.* Leblanc, 3 Brevard, 339; Penns. *v.* Sullivan, Add. 143; Stroud *v.* Com. 11 S. & R. 177; Com. *v.* Thomas, 1 Virg. Cases, 307. See Wh. C. L. § 1137.

(*f*) Com. *v.* Beale, Phil. 1854, cited Whar. C. L. (3d ed.) 518–9; see *ante*, § 443 *et seq.*

(*g*) Wharton's Cr. Law, § 1134.

(*h*) See *ante*, § 419–425.

BOOK IV.

QUESTIONS RELATIVE TO IDENTITY.

ANALYTICAL TABLE.

CHAPTER I.

IDENTIFICATION OF THE LIVING OR DEAD.

1st. Cases of doubtful identity, § 473.
2d. Means of identification, § 474.
- (1.) Establishing age from the skeleton, § 474–5.
- (2.) By means of the teeth, § 477.
- (3.) Determination of sex from inspection of the skeleton, § 478.
- (4.) Fractures, deformities, and peculiarities in the dead body, § 479.
- (5.) Cicatrices, § 481.
- (6.) Hair, § 483.
- (7.) The length of time that has elapsed since death, § 484.
  - (*a.*) Heat as influencing decomposition, § 485.
  - (*b.*) Air as influencing decomposition, § 487.
  - (*c.*) Water as influencing decomposition, § 488.
  - (*d.*) Dryness and moisture of the soil as influencing decomposition, § 489.
- (8.) Putrefaction in the fœtus, § 491.
- (9.) Influence of lime on the putrefactive process, § 492.

§ 473. 1st. *Cases of doubtful identity.*—Many curious cases of doubtful or disputed identity might be cited to illustrate the singular fortuitous resemblance between individuals, not only in their general personal appearance, but also in accidental marks. Other cases also might be related, in which long absence and various circumstances have so changed a person, that his nearest relatives have not been able to recognize him. Usually, in cases of disputed identity, whether of the dead or living, a scar, a deformity, or some congenital or indelible mark, as a nævus maternus, or mother's mark, a mole, tattooing, &c., has proved the only means of recognition.

Salomé Muller sued for her liberty before the courts of Louisiana, alleging that she was a white woman, and had come over from Germany with her parents, at the age of three years. Since that time she had been held in slavery. She was recognized by her resemblance to her family, and further identified by the existence of two small *nævi materni* upon the inside of each

thigh, which were correctly described by the midwife who assisted at her birth, and the woman who took care of her upon the Atlantic passage, after the death of her mother.(*a*)

Usually, medical testimony can hardly be required respecting the identity of the living. In disputed cases, it may become necessary for the physician to give his opinion respecting the permanence of scars, tattoo marks, and congenital or acquired deformities. But more frequently he is called upon to assist in the identification of the dead, or to state after how long a period of time and under what circumstances such identification is possible. Krügelstein says that he assisted at the inquest upon the body of a man found dead in a morass. The body was recognized by a number of persons present, as well as by the wife of the deceased, who, however, remarked that her husband when he had left her, wore a different jacket from the one on the body. Some time afterwards, however, the man who was supposed to have been dead, came home again, and upon investigation it was finally discovered that the deceased was a person belonging to a neighboring village, who had left his home at an early age, and upon his return was recognized by no one. The likeness between the two men, it is stated, was most extraordinary.(*b*) Dr. Kinlock, of Drumoak, Aberdeenshire, relates a case of mistaken identity under extraordinary circumstances. The body of a man between sixty and seventy years of age, was found slightly imbedded in the sand, on the bank of a river; both eyes had been picked out by hooded crows, but decomposition had made no progress. The left ear and the first finger of the left hand were wanting, having the appearance of having been lost in early life. The body was conveyed to a suitable place, and persons were requested by advertisements to come and identify it. After some time, two young women claimed it as the body of their father, who, they stated, was a lawyer; that he was in the habit of leaving home for two or three weeks at a time, without informing them where he went, and that he had lost the left ear, and first finger of his left hand. They apparently recognized the clothes and the body, and gave vent to expressions of grief on the event. Subsequent doubts in the mind of the one sister were overruled by the confident affirmations of the other. The funeral took place accordingly, and was attended by the daughters and friends of the supposed deceased lawyer. Returning from the funeral, the boatman of the ferry which they had to cross, asked them for whom they were in mourning, and upon receiving their answer, laughingly informed them that he had, only half an hour before, ferried their father over alive and well, and directed them where they would find him. This, to their great joy, proved true. Whose was the body they had buried in the churchyard at Drumoak remained undiscovered.(*c*) Cases might be indefinitely multiplied by citations

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(*a*) Beck, vol. ii. p. 664, from the Monthly Law Reporter, Boston, 1845, Wh. C. L. (2d ed.) 337.

(*b*) Henke's Zeitschrift, 1850, 4 H.

(*c*) Ed. Month Journ. Feb. 1854. The following curious case occurred in Boston: it was said that upon the testimony of the captain of a vessel and six of his crew, a man named James Guard had been arrested by the police on the charge of attempting to rob a vessel, but was afterwards released on its appearing that he could not be the man, as on the night of the robbery he was safely slumbering in the watchhouse of

from the annals of criminal procedure, to show that nothing is more common than the failure of the nearest friends to identify the body of a deceased person, or than the most positive judicial testimony in regard to the identity of persons found dead, but which subsequent events have proved to be utterly erroneous.

§ 474. 2d. *Means of identification.*—The means of recognizing from the skeleton the age of the deceased, are found chiefly in an observation of the degree of ossification. A brief description of this process at different ages up to the time at which it is completed, will enable us to determine the question in an appropriate manner. One of the most reliable indications of age in the skeleton of a supposed new-born child, will be found in the osseous point in the cartilaginous epiphysis of the lower extremity of the femur. Its importance in this relation was first pointed out by Beclard, but has lately been further substantiated by the observations of Ollivier and Mildner.(*d*) At the commencement of the last month of intra-uterine existence, there may be seen upon a transverse section of this epiphysis, a spot which is more vascular and darker than the surrounding structure, in the midst of which a body of the size of a poppy seed or the head of a fly may be recognized, which, upon drying, will be found to be of newly formed bony matter. At the time of birth, this osseous point has attained the size of a pea or lentil, is hollow and incloses a porous and vascular substance; the shell itself being of a firm, bony nature. From the observations of the above-mentioned authors, it results that, 1st. If this osseous point be wanting, the skeleton is that of a fœtus of not more than eight months; 2d. When it has attained the size of a poppy seed or the head of a fly, the fœtus is probably in the last month of gestation; 3d. When it has acquired a diameter of one and a quarter lines, the full period has been reached; and, 4th. If the point of ossification be three lines, or more, it may be assumed that the child has lived after its birth. These

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the North End, whither he had repaired for lodging. It was also stated, that on Monday night a body was found in the water at the end of Commercial Wharf, which an officer of the north station testified before a coroner's jury was the body of the unfortunate James Guard, who, but a night previous, had been so falsely charged with crime, but who, nevertheless, appeared to have rather suddenly come to a tragic end.

The coroner's jury had no doubt, from the testimony of the officer, that the body was really that of James Guard, and they returned a verdict in accordance thereto, stating that "James Guard came to his death by accidental drowning." Thus the matter was deemed and considered to be settled, when—so runs the report—last night, as the aforesaid officer sat meditating in his office, at the station house, upon matters connected, no doubt, with the city's welfare, the door slowly opened, and what appeared to be the body of James Guard entered. In these days, a police officer is not apt to be a believer in ghosts, but, for a moment, thoughts of that character flitted through his brain. A request for lodgings uttered in no ghostly tones, awakened him to a sense of reality, and an explanation ensued, when it appeared that James Guard, who had been once charged with robbery, and on the oath of a coroner's jury with having been picked up drowned, was in reality alive and kicking, with sufficient love of the things of this world to receive with gratitude the gift of a soup ticket, presented to him by the penitent police officer. Thus the body now lying in the dead-house is not that of James Guard, but of some one who so closely resembled him as to have been mistaken for him by a dozen persons. It is probably fortunate for the living, that this "Dromio," who might have continued to work mischief for him, has really deceased. It is, certainly, a strong case of personal resemblance. Boston Law Reporter, vol. viii. No. 1, page 55, &c.

(*d*) Prag. Vierteljahrschrift, 4, 1850.

statements have been verified by their authors, but, it is needless to say, that having so important a bearing upon questions of infanticide, as well as upon other questions not less vital in their character, much additional confirmation is required to entitle them to our unreserved confidence.

§ 475. The length of the skeleton of a new-born, mature child is between fifteen and sixteen inches. At the end of the *first* year, the two sides of the frontal bone are united in half their length, the fontanelles diminish in size, the temporal bone is still composed of four pieces, and the four incisor teeth have appeared. Points of ossification are found in the coracoid process of the scapula, in the ensiform cartilage, and in the patella. At the end of the *second* year, the length is about thirty-two inches; the four portions of the temporal bone form but one piece; the anterior fontanelle is usually closed, and both halves of the os frontis are united. Two canine and four molar teeth have made their appearance. The pelvic bones, which are afterwards consolidated in the acetabulum, touch each other; the epiphyses of the metatarsal and metacarpal bones are ossified, and points of ossification are seen in the lower end of the tibia and fibula. At the expiration of the *third* year, the sutures of the bones of the head have a zigzag appearance; all the first set of teeth are fully extruded; the odontoid process of the second vertebra is firmly united with the body; the spinous processes of the vertebræ ossify, as do the trochanter major, the patella and the cuneiform bones. At the end of the *fourth* year, the child is about three feet long, the styloid process of temporal bone is formed, and the process of ossification continues in the parts mentioned. In the *fifth* and *sixth* year, no further trace of the division of the os frontis is found; the sutures unite, the arches of the vertebræ become united with the bodies and the lower extremity of the ulna, and the pisiform bones are ossified. In the *seventh* and *eighth* year, the second set of teeth replace the first. If the eight permanent incisors are present, the age is probably at least nine years. The canine and molar teeth make their appearance between the *tenth* and *twelfth* year, with the exception of the last molar, which is very irregular in the period of its extrusion. Orfila describes the ossification at this period as follows: At *eight* years, the upper extremity of the radius; at *nine*, the navicular bone of the carpus; at *twelve*, the trochlea of the os humeri; from *thirteen* to *fourteen*, the trochanter minor and the three parts of the os innominatum, which last is sometimes delayed till the fifteenth year; and at *fifteen*, the sacral vertebræ are united together. From this period up to the age of twenty-five, the same author observes that the process of ossification is most noticeable in the following points: From *fifteen* to *sixteen*, the coracoid process of the scapula is united with the body of the bone, and the acromion contains an ossific point; from *fifteen* to *eighteen*, an osseous point in the sternal end of the clavicle; from *fifteen* to *twenty*, ossification of the last bone of the coccyx. At *sixteen* years, an osseous point is seen in the head and tubercles of the ribs; at *seventeen*, bony union of the epiphyses of the phalanges; and at *eighteen*, of the head and trochanter of the femur. From *eighteen* to *twenty-five*, union of the sphenoid and occipital bone of the three parts of the tibia; and from *twenty* to *twenty-five*, of the first piece of the sternum to the rest of the bone. Between *twenty-five* and *thirty* years, occurs

the complete union of the first to the second bone of the sacrum; from *forty* to *fifty*, of the ensiform cartilage to the lower extremity of the sternum; and between this and the *sixtieth* year, the union of the sacrum and coccyx. In advanced life, the bones lose their density; the earthy matter predominates, and they hence become more brittle. According to Sömmering, they lose nearly a fourth part of their weight. They are yellower than in the previous years of life; the diploë in the flat bones disappears, so that the two plates of bone touch each other, are thin and sometimes lose their substance in this part, forming an opening. The sutures in the bones of the skull become indistinct, and generally first on the inside of the cranium. The intervertebral substance loses its thickness, and the borders of the cervical vertebræ are smaller before than behind. If the teeth have been lost, the alveolar processes become absorbed, but if they remain, they bear unmistakable signs of age in their yellow color and worn appearance. The ensiform cartilage is completely ossified, as well as those of the ribs. There are, however, no such alterations in the condition of the skeleton as would give more than an approximate appreciation of the exact age at this period of life.(*e*)

§ 476. *Stature.*—When the whole skeleton has been preserved, and the articulating ends of the long bones have not been wasted by decay, the height of the individual can be obtained by adding from one and a half to two inches to the length of the skeleton. Should, however, the bony remains be in a fragmentary condition, an accurate estimate of the height of the living person cannot be made. Orfila and Sue have, indeed, by assuming the superior border of the pubes to form the exact centre of the body (as it should do in a well-formed adult), considered it possible to calculate the height. The tables prepared by M. Orfila comprise, moreover, measurements of the several cylindrical bones, from which he proposes to calculate the stature of the skeleton and of the living body.(*f*) Dr. Guy has found, however, upon a careful examination of these tables, that they cannot be relied upon as accurate, since in one instance the upper half of the body exceeded in length the lower by five and a half inches, and in another the excess was six inches in a contrary direction. By taking the average of all the measurements, this author states that we may be in error to the extent of two and a quarter inches; and in the table of the measurements of the cylindrical bones we may be led into error in calculating from them the height of the skeleton, to the extent of more than four inches, and in no case of less than one and three-quarter inches.(*g*) Hence, owing to the false inferences (which occasionally may be of serious importance) to which these calculations may lead, the physician should use great reserve in giving an opinion as to the stature of the body, from the inspection of merely a portion of the skeleton.

§ 477. (2.) *Teeth.*—The most striking part of the evidence by which the identification of the remains of the murdered Dr. Parkman was secured was

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(*e*) The foregoing statements have been taken chiefly from the works of Mendé, Nicholai, and Friedreich, who have devoted particular attention to the subject; also from Dr. J. Miller, Das Knochengerüste des Menschen, &c., in Henke's Zeitschrift for 1852, 3 H. p. 62.

(*f*) Traité de Méd. Lég. 4th ed.

(*g*) Forensic Medicine, p. 24.

that given by the dentist, Dr. Keep. He testified that about three years previously he had made and fitted a set of teeth for Dr. Parkman, a set for each jaw, consisting of manufactured artificial teeth, formed in combinations of three blocks to each jaw, and set upon gold plates fitted and adjusted thereto. He stated that several natural teeth and stumps remained, to which, as well as to the natural shape and peculiarities of the jaws, it was necessary that the plates should be adjusted. An attempt having been made to consume the head by fire, in an assay furnace, the gold had melted away, but the mineral teeth, being composed of an infusible material, remained, preserving more or less of their original shape. Dr. Keep recognized the blocks of mineral teeth as of his own manufacture, and as having been made for Dr. P., and showed that they could have belonged to no one else, from their correspondence with the trial-plate and the mould of the jaw of the deceased, which had been carefully preserved and marked with his name. In addition, the lower jaw had a certain peculiarity of natural formation which served to distinguish it from others, and render the correspondence of the block of mineral teeth with it more significant than it might otherwise have been.

Dr. Guy states that a doubtful case of identity, in Edinburgh, was decided by a dentist, who produced a cast of the gums which he had taken before death. So also the remains of the Marchioness of Salisbury, discovered among the ruins of Hatfield House, were identified by the jaw-bone having gold appendages for artificial teeth.(*h*)

In Mr. Sargent's history of Braddock's expedition(*i*) is narrated a very interesting instance of identification by means of an artificial tooth. Sir Peter Halket, in 1758, after the reduction of Fort Du Quesne, proceeded to the spot of Braddock's defeat for the purpose of discovering, if possible, the remains of his father, who was there killed. "In reply to his anxious questions," we are told, "one of his tawny guides had already told Halket that he recollected, during the combat, to have seen an officer fall beneath such a remarkable tree as he should have no difficulty in recognizing; and, at the same moment, another, rushing to his side, was instantly shot down, and fell across his comrade's body. As they drew near the spot, the detachment was halted, and the Indians peered about through the trees to recall their memories of the scene. With speaking gesture, they briefly discoursed in their own tongue. Suddenly, and with a shrill cry, the Indian of whom we have spoken sprang to the well-remembered tree. While the troops rested on their arms in a circle around, he and his companions searched among the thick fallen leaves. In a moment, two gaunt skeletons were exposed lying together, the one upon the other, as they had died. The hand that tore away their scalps had not disturbed their position; but no sign remained to distinguish the relics from the hundred others that strewed the ground. At the moment, Sir Peter remembered him of a peculiar artificial tooth which his father bore. The bones were then separated, and an examination of those which lay undermost at once solved all doubts—'It is my father!' exclaimed the unhappy youth, as he sunk into the arms of his scarce less affected friends."

(*h*) Guy's Forensic Medicine, p. 23.

(*i*) Philada. 1850, p. 277.

A most singular case of disputed identity, in which there was between two persons such a similarity of name, time, place, age, occupation, and circumstances, as for a long time utterly to perplex the investigation, occurred in London. The body of a woman supposed to have been murdered, was missing, and another woman was arrested upon suspicion of having secretly made way with her and sold her remains for dissection. Both direct and circumstantial evidence brought the crime home to her. The day after the alleged murder, an old woman, of the description of the supposed deceased, was found, with a fractured thigh, lying exhausted in the streets. She gave her name as Caroline Walsh, and said that she was from Ireland. She died, and was buried at the London Hospital. The name of the missing woman was also Caroline Walsh, and she was also Irish. The prisoner, Elizabeth Ross, when arrested, insisted that this was the female whom she was accused of having murdered. Various points of difference were established by the evidence of a large number of witnesses, but the chief distinction was, that while it was stated that the missing woman had very perfect incisor teeth (a remarkable circumstance for her age, which was eighty-four), the other one, who died at the Hospital, had no front teeth, and the alveolar cavities corresponding to them had been obliterated for a considerable time. Moreover, the non-identity was further confirmed by the granddaughters of the missing woman, who swore that the exhumed body of Caroline Walsh was not that of their grandmother.

§ 478. (3.) *Sex.*—The determination of sex from an inspection of the skeleton, is seldom attended with much difficulty, and even when but a few of the bones remain it is sometimes possible to give a positive opinion relative to the sex of the deceased person. The general osseous development is greater in man than in woman; in two persons of equal weight, of the two sexes, the proportion is, according to Autenrieth, as 8 : 10. The skull of the female is a little smaller than that of the male, while the facial portion is obviously shorter and smaller; hence the apparent disproportion between the cranium and the face in the female. Its bones are also thinner, the forehead is lower and narrower, the frontal sinuses and all the foramina smaller, the orbits comparatively larger, and the buccal and nasal cavities less capacious than in man. The thorax is shorter and narrower than in the male, and the difference is particularly marked in the upper part; the clavicles are less bent, and the shoulders are lower and narrower, the arms and hands shorter, and the fingers more delicate and pointed. The bodies of the lumbar vertebræ are higher, and the intervertebral substance thicker than in the male skeleton. The ribs are shorter, thinner, and flatter, and have sharper edges than in the male, and have also other peculiarities, which it is not necessary to dwell upon. The most striking difference, however, is in the pelvis; the hip-bones being more widely apart, and all the diameters of the true pelvis, both of its entrance, cavity, and outlet, being greater than in man; the sacrum is more concave, the upper border of the symphysis pubis is inclined more forward, and the arch of the pubis is wider. On account of the greater width of the pelvis the hip-joints are further apart than in the male, although the trochanters are smaller; the neck of the femur forms an angle of 120°–125° with the body of the

bone, while in the male it is from 127°–135°; the femur is shorter, more bent, and directed obliquely inwards, and the tibia is also shorter, and the bones of the feet smaller and more delicate.(*j*)

Some of these differences are not so striking in the skeletons of females advanced in life, but the essential characters of the pelvic bones remain and are sufficient to indicate the sex.(*k*)

§ 479. (4.) *Fractures, deformities, and peculiarities in the dead body.*— Dr. Taylor relates an instance in which the utility of evidence of this kind was shown. A gentleman was tried in India for the murder of a native. It was stated that the prisoner had struck the deceased, a few hours before his death, several blows upon the chest and had thereby broken his ribs. A skeleton was produced as being that of the dead man, and upon examination it was found that one of the ribs had been broken, but that it was united by a firm osseous callus. Hence the opinion was very properly given that the fracture could not have been caused a few hours before death, but must have taken place from another cause some time previously. The period at which callus is fully formed after a fracture depends somewhat upon the age and constitution of the individual; it is usually, however, several weeks before it is sufficiently firm to bear the weight of the body, when one of the long bones of the lower extremity has been broken. Gunshot and other penetrating wounds of the skull are generally identified by the form of the opening and the sharp and broken character of the edges. Sometimes a portion of the weapon or the ball is found in the head. The absorption of bone made by the pressure of a tumor is recognized by the loss of substance around the opening and its smooth and polished character, and the previous existence of necrosis can also be readily known by its diffusion around the orifice, and in other parts of the skull.

In 1814, portions of a human body having been found floating in the Seine, were taken up and submitted to a medico-legal examination. The body was identified from the fact that disease of both hip-joints was found, which must necessarily have caused considerable deformity and lameness, since it was evidently of old standing, new cavities having been formed above the acetabula, in which the heads of the thigh-bones rested. The assassin was afterwards discovered.(*l*)

§ 480. In those cases in which certain portions only of the human body are found, or in which all appear to be present, though in a dissevered condition, the preliminary step to the identification depends necessarily upon the ability of the examiner to so adjust the parts together as to be certain that they naturally formed parts of one body. This has been successfully done in many

(*j*) Dr. Jno. Neill found, upon an examination of thirty-two skeletons, that the *thyroid foramen* in the *male* is *oval*, and in the *female* triangular. He also observed that the male foramen is longer and narrower, and that the long axis is nearly parallel to the rami of the pubes and ischium; whereas in the female, the foramen is not only smaller and triangular, but the apex of the triangle is downward, its internal side nearly parallel to the rami, and the base of the triangle is proportional to the chord of the arch of the pubes.—*Trans. Coll. Phys. of Phil.* vol. iii. No. 2.

(*k*) Krause, Handbuch der Menschl. Anat. 2 Aufl. Bd. 1, p. 225.

(*l*) Briand, Méd. Lég. p. 586.

remarkable cases, as in the one just quoted; in the case of Ramus, where the head was found in the Seine, the trunk in a sewer, and the legs near the Pont-Neuf; and in that of Dr. Parkman, where the remains of the bones of the head were found in a furnace, and the thorax and limbs concealed in different localities. In the last case, the head having been almost entirely consumed, nothing remaining but a few fragments of bone, there could be no clue to identity from the features; but it having been found that the other portions of the body could be adjusted to each other in such a manner as to prove that they had once constituted a whole, a presumption of identity was established from the computed stature, certain peculiarities of form, the presence of gray hair upon various portions of the body, and, finally, from the block of mineral teeth, which, as before stated, fitted the mould of the jaw of the deceased, as previously taken by a dentist.

§ 481. (5.) *Cicatrices.*—The indelible marks upon the skin which are left by wounds, cutaneous diseases, and surgical operations, afford frequently valuable means of identification. The tissue of which the scar is formed is of a dense and fibrous nature, and it is distinguished from the surrounding skin by its whiter color, and the absence of hair and sebaceous follicles. When not distinct, it can often be brought out by friction, which reddens the adjoining skin, but does not affect the scar. Some have, however, a red or purplish color, especially those which are the result of eruptions depending upon a constitutional cause, as syphilis or scurvy. The *shape* presented by cicatrices is very various. A *linear* cicatrix is the result of a simple incised or punctured wound, which has healed by adhesion. But all incised wounds do not leave scars of this shape. They are sometimes curved or elliptical, owing to the retraction of the skin, or to the wound having been inflicted upon a convex surface. Whenever the injury has been attended with loss of substance, the healing process must necessarily take place by granulation, and the scar will be irregular in shape. *Gunshot wounds*, when a bullet has been the projectile, leave a *round* and *sunken* scar, which is usually much smaller than the ball, if no efforts to dilate the wound have been made, and it is also adherent to the subjacent parts. If the shot has been fired close to the individual, the grains of powder will also sometimes penetrate the skin, and give it a tattooed appearance. A round scar is sometimes also left by a penetrating wound from a weapon with a rounded or triangular blade, but it has not the sunken appearance left by a gunshot wound. The cicatrix which results from the healing of a scrofulous or syphilitic sore has considerable similarity to that made by a ball. If the scar has resulted from a scrofulous abscess in the gland, the appearance of it is peculiar. Its shape is more angular than round; it is traversed by adherent bridles of skin, and is therefore uneven and fenestrated, although its surface is shining, smooth, and white. When it is seated on other parts of the cutaneous surface it is not so deep, except it has become adherent to a subjacent bone, and resembles in its smooth and enamelled surface very much that which is left by a burn. Those which are caused by *syphilitic* ulcerations are irregular in shape, are puckered, hard, often elevated, and more or less of a

(*m*) Guy's Forensic Medicine. (*n*) Lond. Med. Gaz. vol. xxxviii. p. 481.

copper color. The position of these cicatrices will often, moreover, give a key to their origin, being usually seated over the lymphatic glands. The cicatrices resulting from burns are too familiar to need description.

§ 482. The question may arise as to the possibility of the *disappearance* of a scar. We believe that, as a general rule, all scars resulting from wounds and from cutaneous diseases, which involve any loss of substance, are indelible; the only exception that can be made being in regard to trifling punctured wounds, where but little violence has been done to the skin. *Tattoo* marks are also usually considered indelible. This is not the opinion of Dr. Casper, who, in a trial at Berlin, where the question came up, stated, as the result of his inquiries made among the old soldiers at the invalid hospital in that city, that the marks of tattooing can disappear.(*o*) The evidence, however, was not, we think, of sufficiently precise a character to warrant this statement. "Out of 36 examples, the marks had become faint with time in 3, were partially effaced in 2, and completely obliterated in 4." Hence, for the actual previous existence of these last he had to depend upon the word of the person whom he examined. Moreover, the age and the substance with which the operation was effected are not reported. No doubt the pigment used is often partly absorbed, since the lymphatic vessels leading from the spot have been found filled with it, but better evidence of its complete disappearance is yet required before the well-established belief of the contrary can be shaken.

§ 483. (6.) *Hair.*—A curious case, illustrating the possibility of a fraudulent decolorization of the hair interfering with the identification of a person, is reported by Orfila.

A man named Benoit was arrested on suspicion of murder. Some witnesses testified that they had seen him in Paris at two in the afternoon with black hair, while others declared that *they* saw him at Versailles, with fair hair, at five or six in the evening of the same day. The question being proposed whether it was possible to change the color of the hair from dark to light, Orfila deposed that it was. He made numerous experiments to show this, from which it resulted, that by washing the hair with solutions of chlorine, black hair could be changed to various lighter shades, according to the strength of the solution, and the length of time it remained applied. This mode of decolorization can, however, readily be detected by the peculiar smell of the chlorine, and by there being something unnatural in the color resulting from its application. He found also that the most effectual way to darken hair naturally light, was by the employment of a compound of litharge, chalk, and fresh lime in nearly equal parts. After the hair which has been wetted with a solution of these materials, has become dry, the chalk and oxide of lead remaining attached to the hair are removed by weak acetic acid, and cleaned with the yolk of an egg. The hair is thus effectually dyed black, without any injury to its texture. The fraud can, however, easily be detected by steeping some of the hair in dilute nitric acid, which dissolves the ingredients with effervescence, and on testing the solution with hydrosulphuric acid, the black sul-

(*o*) Casper's Vierteljahrschrift, 1852, 1 Bd. 2 Heft (Der Process *Schall* eine *cause célèbre*).

phide of lead will be obtained. Such cases can, however, very seldom come before courts of justice, this being, as far as we know, the only instance in which, since the ancient union of the functions of the barber and the surgeon, they have been again combined.

The color and peculiarities of the hair may undoubtedly, in many cases, assist in the identification of the dead, but it is not unimportant to remember that in those cases where the body has been exposed to the vicissitudes of the weather for some time after death, the hair becomes bleached by the exposure, and thus hair which was really dark during the lifetime of the deceased, may present a tawny appearance.

§ 484. (7.) *The length of time which has elapsed since death*, as ascertained from an inspection of the remains of the human body, can seldom be known with great precision, and in many cases, especially at a late period in the process of decomposition, many errors may be committed. The rapidity of this process depends upon a great variety of circumstances, and the influence of these, it is therefore of some importance to consider.

The age and constitution of the person, his last sickness and mode of death, the existence of wounds, the length of time the body has remained exposed to the air before interment, and the temperature and hygrometric condition of the air at this time, the nature and depth of the ground, if the burial has taken place, and if not, the nature of the medium in which the body has remained, and many other causes which it is here needless to particularize, must all be carefully considered in any estimate of the time that has elapsed since death.

§ 485. (*a.*) *Heat*, especially when accompanied with humidity, is a powerful accelerating cause of putrefaction. Dry heat, if the temperature is elevated, does not promote it. Thus, the bodies of those that have perished in the caravans that traverse the African deserts, are often found in a dry and mummy-like condition. Even in temperate climates corpses interred in very dry vaults, as in the Catacombs at Rome, the leaden vaults of Bremen, the convent of the Capuchins at Toulouse, a church at Bordeaux, &c., remain in a tolerably perfect condition, very much resembling the Egyptian mummies.

The following case illustrates the present topic, and affords a striking illustration of the important aid which justice may receive from science. In March, 1850, a workman engaged in repairing a Rumford fireplace, found in the hot-air chamber the body of an infant which had been introduced through an opening made by the removal of two bricks. The body was mummified. During the preceding years four tenants had successively occupied the apartment. On examining the remains, M. Bergeret, to whom this duty had been judicially assigned, found within them a large number of bodies as large as a grain of wheat, dry, friable, open at either end, and of a mahogany color. These were the shells of the nymphs which produced the insects, the larvæ of which had devoured nearly all the abdominal organs. These nymphs were found in great numbers about the mouth and neck of the body. The interior of the limbs was filled with larvæ, or maggots. Now the succession of these transformations is as follows: The female fly lays her eggs, from which in due time the larva, or maggot, issues, and is after a time transformed into a nymph, or chrysalis, which is inclosed in a sort of case or shell, and from which the perfect

insect ultimately escapes. A year is necessary for these metamorphoses. The eggs are laid in the summer and their changes result in the reproduction of the insects at the commencement of the following summer. Now the eggs which produced the larvæ found in the body in March, 1850, must have been deposited in the summer of 1849. But the body also contained a number of empty nymph cases which must in their turn have been preceded by larvæ produced by eggs laid in 1848. Hence it was concluded that the death of the child had taken place in the summer of 1848, and consequently that no suspicion could attach to the persons who had occupied the room since that date. The inquiry having thus received a definite direction, a female who lived there apart from her husband, at the time indicated, was arrested, and a variety of circumstantial evidence rendered it certain that she had been pregnant and delivered of a child about that time. She was, however, acquitted of the charge of infanticide, on the presumed ground that there was no proof that her child had not died a natural death.(*oo*)

§ 486. In very cold climates, bodies may be preserved for a long time. This is the case in some parts of Norway, where persons dying in the winter are not interred until the spring, the ground being frozen too hard to permit burial, and the corpse is preserved uninjured for several months. The body of Prince Menschikoff, banished to Siberia by Peter the Great, was found ninety-two years afterwards entirely unchanged. In the beginning of this century, the thawing of large masses of ice on the banks of the Lena, left exposed the body of a mammoth, which was in such a state of preservation, that the flesh was eagerly devoured by dogs, bears, wolves, &c. The corpses which are preserved at the hospice on the top of Mount St. Bernard, where the thermometer stands nearly the whole year round below the freezing point, are perfectly recognizable after the lapse of several years.(*p*)

(*oo*) Annales d'Hygiène, 2ème sér. iv. 442.

(*p*) There is upon the summit of the Great St. Bernard, a sort of morgue (*dead-house*), in which have been deposited, from time immemorial, the bodies of those unfortunate persons who have perished upon this mountain by cold, or the fall of avalanches. The study of the circumstances of locality and of temperature in which this establishment is placed, may, to a certain degree, indicate the most favorable conditions for the long preservation of bodies. Thus are shown to travellers, bodies, which they assert have been sufficiently well preserved to be recognizable after the lapse of two or three years. A physician, whose position as former prosector of the faculty of Medicine of Paris, rendered him curious to visit this part of the hospital in all its details, verified, with his own eyes, all that travellers have written, and has transmitted to us the following observations:—

"The hospital of St. Bernard is, as is well known, the most elevated habitation of Europe, being 7,200 feet above the level of the sea. The temperature of this part of the globe is always very low, rarely above zero, even during summer. This extensive establishment is built upon the borders of a lake, at the bottom of a gorge in the mountain; the principal mass of the building represents a long parallelogram, placed in the direction of the gorge, so that its two principal faces, pierced with numerous windows, are sheltered from the wind by the rocks; whilst the two extremities, on the contrary, are exposed to all the violence of those which blow from one side of the gorge to the other. About fifty steps beyond the principal building, and a little out of a right line with it, is situated the morgue, a sort of square chamber, the walls of which are three or four feet thick, constructed of good stone, and the arched roof of which is very solid. Two windows, about four feet square, are pierced in the direction of the breadth of the valley, directly facing each other, so that a perpetual current of cool air traverses the interior of the chamber. There is, further, but a single table in this morgue, upon which they place the bodies when first introduced; after a while they are arranged around the walls in an upright attitude. At the time of my passage of the Great Saint

§ 487. (*b.*) The *air*, at its ordinary temperature, favors the progress of putrefaction. In bodies which are exposed for a long time to all the changes of the weather, it is estimated that all the soft parts are completely destroyed in less than six years, and most of the bones in twelve, as they become light, brittle, and honeycombed in their appearance.

§ 488. (*c.*) *Water* being a natural constituent of the human body, is also one of the elements necessary for the progress of decomposition. If, however, the body be sunk in water, putrefaction does not advance so rapidly as in the air, and often the changes which take place are different from those of ordinary decomposition. The soft parts of the body become converted into substance, called, by Chevreul, *adipocere*. It is solid, white, and fusible. The ammonia which results from the decomposition of the muscles, as well as a certain quantity of potash and lime, form a combination with the oleic and margaric acids of the fatty portions of the body. The bodies of children, and of stout, fat persons, undergo this change most readily. But the presence of considerable moisture is necessary for it, and it therefore occurs only in the water, or in moist soils, especially where many bodies are buried together. It is uncertain at what time this saponification takes place in the water: according to Devergie's observations, it is pretty complete in five months. In the ground, the process is much slower, requiring at least three years for a total transformation. A remarkable example of this change observed in New York is reported by Dr. Dalton.(*pp*)

§ 489. (*d.*) *Soil.*—The dryness or moisture of the *ground*, the depth at which the body is buried, and its more or less complete isolation from contact with the earth, are circumstances which modify the progress of putrefaction, and render any general opinion as to period of death inapplicable. The body of Numa Pompilius was preserved in a stone sarcophagus for several centuries; and the bones of Dagobert, who died nearly twelve hundred years ago, were found entire, having been placed in a wooden coffin inclosed in a stone tomb. The bones of Abelard and Heloise were so well preserved, after a lapse of five hundred years, that the female skeleton could be readily distinguished from the male.(*q*) On the other hand, the body of a child buried in the earth has been found reduced to the mere bones in nine months; and that of a young

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Bernard (31st August, 1837), there were several of these mummified bodies along the walls of the chamber, but a greater number were entirely divested of flesh, and lie scattered about the earthy floor of the room. They informed me that decomposition only took place when the bodies fell by accident to the ground, which was owing to the humidity occasioned by the snows, which occasionally entered with the currents of air through the windows of the morgue."

Dr. Harlan says, "Early in September, 1833, I had an opportunity of inspecting the contents of the morgue of Saint Bernard. Among the group of bodies of every age and sex, we were particularly struck with two figures, one, that of a man, whose countenance was horridly contorted by the act of desiccation; each limb and every muscle of the body had assumed the expression of a wretch in purgatory. The other was that of a mother holding her infant to her bosom, the latter with an imploring expression, looking up to the face of the mother, whom it appeared to have survived some time, as is generally the case when mother and child are frozen together, a greater power of forming animal heat, existing in children." (History of Embalming, &c., by J. N. Gannal. Translated from the French by R. Harlan, M. D. Philadelphia; Judah Dobson, 1840.)

(*pp*) New York Journ. of Med. Nov. 1859, p. 375.

(*q*) Blumenbach, Geschichte u. Beschreibung der Knochen, &c., Göttingen, 1807.

man, who died of smallpox, in less than six.(*r*) In general, observation has shown, that of the body of an adult, buried in an ordinary coffin, nothing at the end of twenty years will remain but the skull and the thigh bones, sometimes also the arm-bones; and Schürmayer states, that in general, in churchyards, the time will not exceed fifteen years. In order to show, however, how little dependence can be placed upon the uniformity of these changes, the following case will serve as an example. A skeleton was found, in digging the cellar under an old house. A question arose whether the individual to whom it belonged had died more than twenty years before. Soon afterwards, other skeletons were found near by; and finally, an investigation having been set on foot, the fact was clearly made out that the site of the old house had formerly been a burial place, and that the skeleton was at least 200 years old.(*s*)

The following general results have been obtained by Orfila, whose celebrated treatise, *Sur les Exhumations juridiques*, contains nearly all that is accurately known on this subject:—

1. Putrefaction is, under equal conditions, more rapid in manure, than in water, privy soil, or the ground.

2. In privy soil it is not so rapid as in water, but more so than in the earth.

3. Water especially, when frequently renewed, accelerates decomposition next in rapidity to manure.

§ 490. Dr. Waller Lewis, who was engaged for many months in the years 1849 and 1850, in inspecting the vaults of the churches of London for the General Board of Health, states, among many other interesting facts, which are not here in place, the following, relative to the time for decomposition in vaults: "The complete decomposition of a corpse, and its resolution into its ultimate elements, is by no means accomplished in a period of ten years; nor is that description accurate which represents, that at the end of that period nothing 'but a few brittle bones are left in the else vacant shroud.' On the contrary, so extremely slow is the process, under the circumstances, that I have but rarely seen the remains in a leaden coffin, of any age, in the condition described. In a wooden coffin, the remains are found exactly in this state in a period of from two to five years. This period depends upon the quality of the wood, and the free access of the air to the coffin. But in leaden coffins, fifty, sixty, eighty, and even a hundred years, are required to accomplish this. I have opened a coffin in which the corpse had been placed for nearly a century, and the ammoniacal gas formed dense white fumes when brought into contact with hydrochloric acid gas, and was so powerful, that the head could not remain near it for more than a few seconds at a time. The putrefaction is, therefore, very much retarded by the corpse being placed in a leaden coffin."(*t*)

In estimating the period that may have elapsed since the death of a person, it is very important to be acquainted with the fact that the process of putre-

(*r*) Joh. Miller. Knochengerüste des Menschen, &c. Henke's Zeitschrift, 1852, 3 H.
(*s*) Miller, *ante*.
(*t*) Lancet, Aug. 9, 1851.

faction is not equally rapid in all of the organs, but that it invades them successively, and, for the most part, in a determinate order. There are tissues, says Casper,(*tt*) which require from twenty to thirty times as long as others to become putrid, and the relative condition of certain internal organs in this respect affords a securer basis than that of the superficial parts for making a probable conjecture as to the period of death. This author presents the results of his observations, of which the following is a concise summary:—

Of internal organs the trachea, with the *larynx*, is the first to undergo decomposition. Its lining membrane may be completely softened when greenish spots are only beginning to appear upon the surface of the abdomen. The *brain* of children within the year follows next in order. The *stomach* soon becomes putrid. The earliest traces of this change are visible in from four to six days, in the fundus of the organ, and consist of dirty reddish spots varying in size from mere specks to that of the palm of the hand, without regular shape or limits, and traversed by bluish venous streaks. The importance of this fact in cases of suspected poisoning is very evident. As time elapses the dirty red color diffuses itself and gradually changes to a grayish-black tint, and in the same proportion the softening of the submucous tissues proceeds. In no case, says Casper, have I met with a separation of the mucous from the muscular coat, such as follows the action of a caustic poison, and which could not be distinguished from the merely emphysematous disintegration of the mucous membrane produced by putrefaction alone. Putrefaction of the *intestines* follows that of the stomach and passes through the same stages. In the majority of cases the *spleen* is next in undergoing decomposition; but this depends upon its greater or less degree of soundness. It grows softer and softer, so that at last it may be readily broken down with the handle of the scalpel. Its color turns to a pale bluish-green.

The *omentum* and *mesentery* resist change somewhat longer, especially if they contain but little fat. They then become dry and grayish-green in color. Usually the *liver* continues firm for some weeks after death. It changes more rapidly in new-born infants than in adults. The alteration begins upon the convex surface with shining green spots, which gradually invade the whole organ and change its color to coal-black. The gall-bladder resists longer. Next in order of change is the *brain* of adults. It gradually contracts after death. Putrefaction begins at its base, giving the parts a pale greenish color, proceeding upwards, and from the cineritious to the medullary substance. In moderate weather the brain becomes soft in two or three weeks, but a month elapses before it is converted into the reddish paste into which the brain of infants so speedily turns. If air has access to it, these changes occur more rapidly.

The preceding organs may be associated as quickly putrefying. The following are more slowly changed. Even after the stomach, intestines, liver, &c., are far gone in putrefaction, the *heart* appears fresh, and all its parts are recognizable. Gradually it softens, first in its internal muscles and then in its walls, becoming soft, greenish, and finally black. About the same time as

(*tt*) Handbuch der Ger. Med. i. 51.

the heart, but sometimes earlier, the *lungs* undergo decomposition. In bodies which externally are far advanced in putrefaction, the structure of these organs is commonly very evident. This remarkable slowness of putrefaction in the lungs proves how little practical foundation there is for the notion that in the bodies of new-born children, otherwise fresh, the floating of the lungs in water can be ascribed to decomposition of their substance. The first evidences of this change consist in small collections of air beneath the pleura from the size of a millet seed to that of a bean. They may form on any part, but, as the process advances, they become more numerous, especially upon the posterior surface of the lungs. Notwithstanding the development of these vesicles the color of the organs is very slowly altered. As putrefaction advances they become darker, of a bottle-green and finally of a black color, and in the same degree the parenchyma grows soft and collapses. The *kidneys* putrefy still later, first assuming a chocolate color and then softening. But their granular structure is very long retained. The *bladder* does not begin to decay until complete putrefaction of all the above mentioned organs has taken place.

The *œsophagus* in this respect does not at all resemble the rest of the digestive canal, and it is found months after death moderately firm, and in color a dirty grayish-green, when no trace of stomach and intestines remains. As regards the *pancreas*, for a long time it remains of a dirty reddish color, and when it becomes decomposed the rest of the body must have utterly gone into putrefaction. The *diaphragm* is one of the parts which yields the latest to this process. It is true that within a few weeks after death it is spotted with green; but after the lapse of from four to six months its muscular can be distinguished from its tendinous portion. The larger *bloodvessels*, and the *arteries* especially, change very slowly. Devergie mentions a case in which the aorta of a body exhumed fourteen months after burial was perfectly distinct. The *uterus* is, however, of all the organs the one which retains its form and texture the longest. When not another organ is in a condition suitable for examination, the uterus remains tolerably fresh and firm, of a dusky red color, and so well preserved that it may be cut and its interior examined. These statements are not less applicable to the female fœtus and new-born infant than to the adult. A case is related by Casper of a woman whose body was found in a privy well nine months after she had suddenly disappeared, reports having meanwhile become current that she had concealed herself or been murdered by a certain person, otherwise of good repute, to avoid the discovery of her pregnancy. Her remains were in the last stage of putrefaction, all except the uterus, which was of a light red color, hard when handled or cut, and presented all the characters of a virgin's womb.

§ 491. (8.) *Putrefaction in the Fœtus.*—The fœtus dying within the uterus, undergoes a change which is different from the putrefactive process. The body is remarkably flaccid in all its parts, and if it have died previous to the fifth month, it will often, after having undergone a certain degree of maceration, wither, contract, and become hard, principally upon the surface, exactly as if it had been preserved in a weak saline solution. In the later months, however, its tissues soften and lose their cohesion, the skin has a spotted appearance, and when the cuticle is detached, has a brownish-red color.

The abdomen is usually bare of the cuticle, which is, however, easily detached from all parts of the body. The head lies flat in whatever position it may be placed, and all the joints are extremely relaxed. The umbilical cord is of a brownish-red color, and very flaccid. The cellular tissue is infiltrated with bloody serum, and the cavities of the body contain the same liquid. The viscera are disorganized, easily lacerated, and very loosely connected with each other; gas is developed in the lungs and liver, and the kidneys and uterus are usually better preserved than any other parts. The lungs are of a dark brown color, and punctuated with black blood. The odor is peculiar, but not that of putrefaction, unless the child has been born after a lingering labor, and air has had access to it. The child which dies immediately before birth, will not, of course, present these appearances. When the fœtus has been retained a long while in the womb, it is said that it may be converted into adipocere. This is not unfrequently the case with extra-uterine fœtuses. There is no difference in the putrefaction of children born alive, from that of adults, except in the greater rapidity of its progress. In order to determine the length of time which may have elapsed since the birth of the child, with a view to its identification when it is found in a putrid condition, recourse must be had to the same sources for an opinion as those already indicated, viz., the locality, temperature, medium, &c., to which it has been exposed, or in which it has lain.

§ 492. (9.) *Influence of lime upon the putrefactive process.*—The belief is a very general one, that lime has the property of hastening the process of decomposition, and it is usually with this view that it has been thrown upon human remains which are sought to be rapidly destroyed. A few years since, upon the trial of the Mannings, in London, for the murder of O'Connor, medical evidence to this effect was given; the advanced state of putrefaction in which the body was found being attributed to the action of the lime, and, in particular, the destruction of the brain, to the fact of this substance having penetrated through the wounds of the head, and thus exercised a direct action upon it. But more attentive observations and careful experiments have shown that it does not possess the property thus attributed to it. The following conclusions were drawn by Dr. Taylor, from some experiments made for the purpose of ascertaining the effects of lime on animal matter:—

1. Lime neither retards nor hastens decomposition in dead bodies, whether whole or in fragments.

2. It has, however, the effect of hindering the diffusion of noxious effluvia from the dead body, from its combination with carbonic acid, sulphuretted and phosphoretted hydrogen.

3. Lime is therefore one of the best, safest, and cheapest means of preventing the effluvia from dead bodies.

4. The belief, therefore, that it hastens the putrefactive process, is entirely groundless.(*u*) The experiments of Mr. John Davy(*v*) confirm these conclusions. He placed various structures of the bodies of animals in wide-mouthed

(*u*) Henke's Zeitschrift, 41, E. H. p. 294.
(*v*) Edinb. Month. Journ. Jan. 1850.

vessels, and covered them with a paste of freshly-prepared caustic lime. At the end of a month they were found perfectly well preserved, although somewhat softened. Even seven months afterwards, they were found nearly in the same condition. At the end of two years, certain changes had taken place. The membranous portions were soft and transparent, the muscular tissue was converted into adipocere but had no offensive smell, and the other structures were no longer recognizable. In other experiments of the same kind, it was found that the lime was destructive only to the hair, nails, and epidermis; and that, in animal tissues which were already beginning to putrefy, the immersion in fresh lime destroyed all foul smell, and brought the process to a standstill. The green color which the muscular tissue receives from contact with lime, is ascribable to a chemical action of this substance upon the coloring matter of the blood contained in them.

A detailed account of the changes which take place in the body after death, will be found in Chapter XVI.

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PART I.

POISONING.

CHAPTER I.

GENERAL CONSIDERATIONS.

§ 493. 1st. *Definition of poisons.*—Physicians generally understand by the word *poison* a substance having an inherent deleterious property, which renders it, when taken into the system, capable of destroying life. It is difficult, however, to give a definition to the term which will meet the signification attached to it by different classes of persons; for while, in common language, poisons are understood to be those articles only which are deadly in small doses—as strychnine, prussic acid, arsenic, &c.—the lawyer and the physician will unite in affixing to it a general meaning, similar to that which we have given above. Some substances are habitually classed as poisons which, according to the popular signification, would have a doubtful claim to be so called, being fatal only in large doses; and every medical practitioner is aware that very many active remedial substances may, in an overdose, produce serious and fatal effects. Moreover, questions may arise as to the applicability of the term to substances which destroy life by mechanical irritation, such as powdered glass, &c. Therefore, in order to avoid the evil of giving too wide or too restricted a meaning to the word "poison," we adopt the definition above

given, which makes no reference to the quantity required to produce a poisonous result, nor to the mode in which it is introduced into the system.

§ 494. 2d. *Mode of action.*—The *mode of action* of poisons, although exceedingly interesting as a physiological question, cannot here occupy our attention. Whether a poisonous substance exercises its specific deleterious action by being absorbed into the system, by entering into the blood, or by an immediate or remote action upon the nerves, is a question that must often remain undecided. Its mode of action may be conjectured by the comparative rapidity and the nature of its effects. These it is important to study, since they are the basis upon which any classification of poisons must be founded. We will therefore return to them hereafter. The poisonous effect of any article is, however, not universally the same. There are certain peculiarities of constitution which in one case will prevent the injurious effects of a substance which is generally poisonous, and in another will render a comparatively innocuous alimentary or medicinal article highly pernicious.

§ 495. (1.) *Conversion of harmless substance.*—The *idiosyncrasy* which converts a harmless substance into a poisonous agent, is very frequently observed in the case of articles of food. Thus mussels, fish, pork, mushrooms, and mutton have frequently given rise to all the symptoms of irritant poisoning. It should be remembered, however, that the symptoms in these cases may result as well from the mechanical irritation of the food—too large a meal having been taken, or from the fact of its being in a condition unfit for use. The cases in which a really poisonous substance has been taken with impunity are more rare. In the majority, the immunity is only comparative, the person being affected merely in a less degree than is usual. An instance is, however, related, on the authority of Dr. Christison, in which a gentleman, unaccustomed to the use of opium, took nearly an ounce of good laudanum without any effect. Dr. Hartshorne says, that a medical friend of his had "lately seen a man in this city swallow about five grains of corrosive sublimate, and was informed by the apothecary at whose shop he witnessed the act, that the individual in question was in the habit of taking the same quantity every day."(*a*)

§ 496. (2.) *Habit.*—The influence of *habit* in rendering the system tolerant of poisonous substances is daily seen in the increased doses rendered necessary in the continued use of certain medicinal articles. Thus the system becomes rapidly tolerant of opium and its preparations, and doses increased beyond the usual limit of safety are required in order to produce the effect originally obtained. Those who have become addicted to the vice of eating or smoking opium for the sake of creating a pleasurable excitement of the system, find it necessary to gradually augment the amount they consume, and are unable to suspend or discontinue the habit without experiencing the most distressing sensations. Accounts have been lately published, which would seem to show that the system may become tolerant even of *arsenic*, and that the dose may be gradually increased without the production of toxical effects. General medical experience is certainly not in harmony with this statement. On the

(*a*) Taylor's Med. Jur. Am. ed. p. 98.

contrary, a slight increase of the dose is very soon followed with a sensation of heat in the throat and stomach, inflammation of the eyes, swelling of the face, together with nausea, griping, and other alarming symptoms. The accounts alluded to are those coming from various sources relative to the practice of arsenic-eating in some of the provinces of Austria. A case in which a person was charged with poisoning, was tried at Cilli, in Styria. The victim was an old soldier, who died suddenly, and in whose stomach arsenic was found. It is said that the court, in submitting the case to the jury, asked the question, "Was the deceased an arsenic-eater?" To which the jury replied, "Yes, he probably was." This question had reference to the fact, that "in the provinces of Lower Austria and Styria, bordering on Hungary, it is quite common with men to chew particles of arsenic, mixed with their bread, very much as the Chinese chew opium. The absorption of the small quantity thus used, induces a fresh and clear complexion, and, to a certain extent, brightens the intellectual faculties; but with those who make a habit of thus eating it, there follows, before long, debility, and a premature death. Females do not at all indulge in it, and the few men thus distinguished are known by the name of *eaters of poison*."(*b*)

Dr. Tschudi states that the peasantry purchase it under the name of hedri (*hedri, hedrich, hatter-rauch*), from wandering herbalists or peddlers, who, on their part, obtain it from workmen in Hungarian glass, from veterinary surgeons, and from charlatans. "These poison-eaters (*toxicophagi*) have a double aim; first, they wish to give themselves, by this dangerous habit, a fresh and healthy appearance, and a certain degree of embonpoint. Many of the peasant girls, and even the men, have recourse to this expedient from coquetry and a desire to please; and it is remarkable what success they attain, for the young toxicophagi are distinguished by the freshness of their complexion, and by the aspect of flourishing health. The following is one of many instances. A girl who attended cows, in good health, but pale and thin, was employed at a farm in the parish of H——. Having a lover whom she wished to attract yet more by her personal charms, she had recourse to the usual method, and took arsenic several times a week. The desired result was soon attained, and after some months she became fat, chubby-cheeked, and, in short, quite to Celadon's taste. To carry the effect further, she increased the dose, and fell a victim to her coquetry—she died poisoned. The number of deaths from the abuse of arsenic is by no means inconsiderable, especially among young people. Dr. Tschudi states, that so careful are the victims of this practice to conceal it, that the secret often is revealed only on the death-bed. The second advantage gained by the toxicophagi, is that they become more free in respiration, and are able to ascend high mountains with ease. Upon every long excursion into the mountains, they take a little bit of arsenic which they let dissolve in the mouth. The effect is surprising. They ascend without difficulty heights which would have been almost insurmountable without this practice. They commence with a piece of arsenic the size of a lentil seed, or about

(*b*) Journ. des Connais. Méd.-Chir. Dec. 1851; and Am. Journ. Med. Sci. July 1852, p. 270.

half a grain. They keep to this dose, which they swallow several times a week, morning and evening, for a long period, to become accustomed to it. Then they increase the quantity insensibly, but with precaution, until the desired effect is produced. A countryman, named R——, of the commune of Ag—, a sexagenarian, and in excellent health, was in the habit of daily taking four grains. He had followed the habit forty years, and had transmitted it to his son. There was no trace of arsenical cachexia in this individual, no symptoms of chronic poisoning. It is to be remarked, however, that when the practice is dropped, emaciation generally ensues from some cause, either from the withdrawal of the stimulus, or from accidental or acquired disease. The custom does not diminish the sexual passion, as is the case with the opium-eaters of the East, or with those who use the betel, in India and in Polynesia. On the contrary, the feeling becomes more strong. It may be as well to bring to mind a general use of arsenic in Vienna, among the stablemen and coachmen of the great houses. They mix a good pinch of the powder with corn, put a piece the size of a pea in a linen bag, and attach it to the bit of the horse. The saliva dissolves the poison. This produces a bright aspect of the skin, roundness and elegance of form, and foam at the mouth. The coachmen of the hills adopt the same practice before commencing a laborious journey; and horse-dealers carry with them small balls of arsenic, to be given to those animals which they are leading to the market. Should a horse thus treated pass into the hands of a master who does not employ arsenic, he gets thin, loses his freshness, becomes dull, and, in spite of abundant food, does not recover his former sleekness.(*c*) The practice of arsenic-eating, and the singular effects which are attributed to it, are wholly discredited by Drs. Pereira, Taylor, and Christison, and are irreconcilable with our positive knowledge of the action of this substance upon the human system, as well as upon animals. The detailed account just given, possesses at least some literary interest, and may, perhaps, at some future time, receive that explanation of which, at present, it seems to stand so much in need. The only fact at all corroborative of this tolerance of arsenic, is that mentioned by Flandin. He states that he gave to animals doses of arsenic, commencing with $\frac{1}{65}$th of a grain mixed with their food, and that in nine months, by progressive increase, they bore a dose of upwards of fifteen grains of arsenious acid, in powder, in twenty-four hours, without their appetite or health becoming affected."(*d*)

§ 497. (3.) *Disease.*—Disease also has sometimes the effect of rendering the system tolerant of substances which in the same doses would, in a healthy state of the system, be poisonous. On the other hand, certain diseases render the body more susceptible to the influence of poisons. Examples of the fact first mentioned are seen in the tolerance of large doses of opium, or other narcotics in tetanus, mania-a-potû, and some other diseases marked by great nervous tension. During the active stage of severe inflammatory and febrile diseases, mercury may be given in large and repeated doses without producing

(*c*) Med. Times and Gaz. July, 1854, from Gaz. des Hôpitaux, May 16.

(*d*) Traité des Poisons, vol. i. p. 737. The statements in the text are confirmed by Mr. Heisch, of London, who gives, as authority, Dr. Arbele, Dr. Kottowitz, Dr. Lorenz, and a director of the arsenic works near Salzburg. Ranking's Abst. (Am. ed.), xxi. 27.

salivation. Illustrations of the second are presented by the aggravation or the ready production of cerebral symptoms, after the use of small doses of narcotics, in those who have a predisposition to cerebral congestion or apoplexy, and by the extreme facility with which salivation follows the administration of mercury in persons affected with the disorganization of the kidney, which usually accompanies albuminous urine. The use of iodide of potassium after mercurial preparations, is said to favor the development of the mercurial cachexia.(*e*)

§ 498. 3d. *Evidence of poisoning.*—The medical evidence in cases of suspected poisoning, is derived from several sources, to wit, *the symptoms, the post-mortem appearances, chemical analysis, and experiments on animals;* the whole evidence being at the same time strengthened by reference to the known effects of the poison in *other* well authenticated instances.

§ 499. (1.) *Symptoms.*—It is but rarely that some knowledge of the symptoms preceding death is not obtained, even where the mode of their invasion has been unobserved. Occasionally, indeed, persons are found dead from the effects of poisoning, of the precise manner of whose death nothing can be learned, the suspicion of poisoning arising only in consequence of the finding of the phial from which the poison has been taken, or other circumstantial evidence of a similar character. Such are, in general, cases of self-destruction; the unfortunate victim of misfortune or excess having designedly withdrawn himself from observation, with the view of being undisturbed in his purpose. But in most cases of accidental and homicidal poisoning, some knowledge is acquired, either directly or indirectly, of the nature and progress of the symptoms. With few exceptions, medical aid is sought, and the direct testimony of the physician can thus be obtained.

With regard, therefore, to this portion of the medical evidence, it is important that the following circumstances, bearing upon the probability of poisoning, should be considered :—

(*a.*) *The mode of invasion of the symptoms.*—In most cases of acute poisoning, by which is meant those in which a single dose capable of destroying life is taken, the symptoms arise more or less *suddenly.* In the chapters upon the individual poisons, the length of time elapsing before the accession of the symptoms, will be given; it varies with each poison, and is influenced also by several circumstances, such as the fulness or emptiness of the stomach, the state of health and the habits of the individual. Although arising suddenly, the symptoms do not necessarily follow *immediately* the ingestion of the poison. If it have been swallowed in food or drink, the symptoms announcing the fact of poisoning may not come on for an hour or more afterwards. This fact has been frequently observed in arsenical poisoning, and is usual in poisoning by opium, belladonna, digitalis, and some other narcotics. But when the symptoms have begun to manifest themselves, there is a progressive development of them, and they present (like any disease) certain features, which, combined, form a portrait by which they may be referred to some one class of the poisons, or be known to depend upon a particular poison. It

(*e*) Trans. Coll. Phys. Philad. vol. ii. No. 8, 1855.

is not indeed meant that there may not be a remission of the symptoms in poisoning, due either to the influence of treatment or to the spontaneous struggles of nature; but this circumstance, which is more apt to take place when a dose insufficient for the destruction of life has been taken, can hardly affect the value of the fact of the sudden accession and development of characteristic symptoms. It should not be overlooked, that poisons have sometimes been taken or administered otherwise than by the mouth, as by the rectum or vagina, and in the case of volatile poisons, as carbonic acid, prussic acid, ether, chloroform, &c., by the lungs.

(*b.*) The *duration of the symptoms* is another consideration, which has important bearings. Although sudden death is not produced by the majority of poisons, or at least by such as are usually swallowed, yet death from acute poisoning is an early result. A few minutes or hours may suffice; and, on the other hand, the patient may survive for days. No general rule upon this point can be laid down; arsenic usually destroys life within twenty-four, opium within twelve hours, and prussic acid in a few minutes. Exceptions are seen to all of these general rules; and with no poison is there so wide a range in the duration of the symptoms as in arsenic, since it has been known to prove fatal in less than two hours, and after several days. The reader will find sufficient details upon this point hereafter.

§ 500. All the importance of the evidence derived from the symptoms, depends upon the possibility of showing a distinction between them and a disease suddenly developed. This distinction should be sufficient, not merely to satisfy the mind of the physician, but to afford convincing proof to the jury upon the subsequent trial. This is often the most difficult and annoying duty of the physician; for while his own mind may be perfectly satisfied of the correctness of his judgment, he can rarely, with perfect conscientiousness, assert that the symptoms might not be explained upon the supposition of disease. Hence, this portion of the medical evidence cannot stand alone, but must be supported either by the positive correspondence with it of the post-mortem appearances and chemical analysis, or by the absence of any evidence from the autopsy confirming the notion of disease. Thus, in suspected poisoning by strychnia, the tetanic convulsions caused by this alkaloid might be readily and plausibly ascribed to other external or internal causes; upon the symptoms alone, it would be impossible to base evidence sufficiently strong to procure a conviction. Or again, should a person die with the symptoms of irritant poisoning, the physician would find it difficult to defend the position that similar phenomena might not be witnessed in an attack of cholera, or in gastro-enteritis, arising from some other cause. Dr. Lee says: "During the prevalence of malignant cholera in 1832, we mistook a case of poisoning by arsenic for an attack of this disease. A lady took more than a drachm of the arsenite of potash, as we afterwards ascertained, with the intention of destroying her life, which was followed by severe retching, vomiting, cramps, livid, cold, and clammy skin, and the other symptoms which usually attend a severe attack of cholera."(*f*)

(*f*) Copland's Dict. Am. ed., art. "Poisons."

Certain portions of the ordinary circumstantial evidence blend closely with that which is purely medical; hence, the medical expert should carefully distinguish in his own mind, between the evidence required of him as a physician, and that of which he is no better qualified to judge than any other good observer. One of these cases is that in which a number of persons are suddenly seized with similar symptoms of poisoning after a meal, while one or more of them remains unaffected. This evidence will often not merely support the fact of poisoning, but also indicate its source. Not unfrequently, this circumstance has been the first to awaken suspicion, and direct inquiry in the right direction. Although this portion of the evidence cannot be considered as falling exclusively within the province of the physician, its value may here be illustrated by one or two examples. The following are related by Casper:(*ff*) A woman acting as the accomplice of her lover, poisoned her husband with phosphorus in bread and butter. The husband ate only half of the bread, for he did not like its taste, and soon afterwards symptoms of poisoning appeared, and after a short illness he died. No dissection was made of the body at the time, but, afterwards, suspicions of foul play arose; it was taken up, and found to be far gone in putrefaction. Nevertheless, traces of inflammation were clearly to be seen in the stomach. An imperfect chemical examination gave negative results. The examination of witnesses would have been equally fruitless had it not been for the remarkable evidence of several witnesses, simple-minded peasants, servants, &c., who testified that the man's fingers which he had used in eating the bread and butter, were observed to emit light when he soon afterwards went into the dark stable, and also that on the next day the piece of bread which he had left uneaten smelled like lucifer matches—a circumstance which the witnesses were unable to account for. Another case in which a similar criminal motive may be presumed, is related by the same author. A man of high rank was accused of having poisoned the husband of his mistress with arsenic. It appeared that as often as the accused had been entertained at the table of the deceased person, the latter, who was a healthy and vigorous person, was attacked with symptoms resembling those of an irritant poison. At last he died, and his widow married the prisoner. A good while afterwards the dead body was disinterred, and found to be greatly mummified, but no arsenic was detected by a chemical investigation. On searching the house, however, a box was found belonging to the prisoner, containing arsenic, and a less quantity of it than he was proved to have purchased.

In such cases as the above, the medical expert is not called upon to give an opinion as to the guilt or innocence of the accused, but simply whether the symptoms which were observed could have been produced by the poison alleged to have been administered. On his affirmative decision, it becomes the province of the law to inquire whether the poison was actually administered, and not voluntarily taken, and whether or not the accused was guilty of its administration.

§ 501. (2.) *Post-mortem appearances.*—There is no portion of the medical evidence of poisoning which demands closer scrutiny than this. In the majo-

(*ff*) Gericht. Med. i. 408.

rity of cases, the *post-mortem* appearances are *not* conclusive of poisoning; in some, there are no alterations whatever of the natural structure, and in others, what little force may lie in this portion of the evidence, may be practically lost by ingenious explanations or suggestions. With the exception of the destructive changes caused by the corrosive acids, or other caustic substances, there are perhaps none which can stand unsupported by the evidence from symptoms; so that, in cases of death in which these have been unobserved, no satisfactory conclusion can be obtained. In such cases, the reality of poisoning can be ascertained only by a resort to chemical analysis. From the prevailing want of familiarity with the usual appearances of the viscera after death, it is to be feared that many errors are daily committed; phenomena, the result of cadaveric change simply, or perhaps the effect of disease, being mistaken for the immediate and characteristic effects of some poisonous substance. A striking illustration of this fact, will be referred to in the chapter upon "Aconite." Sometimes, however, the undissolved remains of the poison may be found in the stomach and intestines, or its presence may be detected by its peculiar odor or color. These are enumerated in each case under the "*post-mortem appearances*," and often afford valuable hints as to the nature of the poison which has been swallowed. Thus the salts of copper, for example, may be detected by their color; hydrocyanic acid, or the oil of bitter almonds, by its powerful odor; and the leaves of savine, and some other vegetable irritants, taken in substance, by their botanical characters. The physician, however, should guard himself against the error of too readily depending upon these indications, for the senses of smell and sight are both often deceived in such cases, and the odor or color supposed to be due to the presence of some poison, may really depend upon natural causes.

§ 502. Nevertheless, the value of the microscope in identifying the presence of some vegetable poisons by their botanical characters, has not received that attention which it deserves. Dr. Frazer, in the course of some judicious remarks upon this point,(*g*) says:—

"The point in such an investigation, which we require to determine in the first instance, is identically similar to the first step in deciding on the nature of a botanical specimen; if the specimen consists altogether of cellular tissue, it is to be classed as one of the 'cellulares,' and possibly may prove to be some of the poisonous fungi; should it, however, yield us distinct evidence of vascular tissue, in that case we will have, as our next duty, supposing it is a fragment of leaf which we are examining, to decide on the nature of the venation, which at once points out whether it constituted a portion of an exogenous or of an endogenous plant, the latter having the well-known parallel venation, and the former presenting an equally distinctive reticulated arrangement. Having advanced so far, we then have four other points, at least, for aiding our further identification of its source.

"1st. The presence or absence of hairs; their relative abundance on the upper or under surface of the leaf; and their shape, composition, and arrangement.

(*g*) Monthly Journ. April, 1855.

"2d. The appearance of the epiderm on the upper surface of the leaf; the form of the cells of which it is composed; the existence or non-existence of stomata; and, if they are present, their shape, size, and disposition in the epiderm.

"3d. Similar observations on the epiderm, upon the under surface of the leaf.

"4th. The disposition of the parenchyma of the leaf; the development of various crystalline matters (raphides) in this tissue, and their form, when they exist."

He suggests, that as the chemist may exhibit, in a sealed tube, his sublimates of arsenic or mercury, so the microscopic observer may produce, to corroborate his testimony, accurate drawings of the fragments of a poisonous plant, printed by solar light, as photographs, or more slowly obtained with the aid of a pencil and camera.

§ 503. (3.) *Chemical analysis.*—The indefatigable researches of Orfila in the domain of toxicology, and the assiduous culture of this science by other eminent chemists, have placed in our hands perhaps the least fallacious of all the means for verifying the fact of poisoning. It is of the utmost importance that the chemical analysis in cases of suspected poisoning should be intrusted to a competent chemist, capable not only of conducting it with system and accuracy, but also of meeting the numerous objections that may, at the subsequent trial, be brought against his evidence. In the majority of cases of poisoning chemical tests are applicable and yield a positive result; they may, except where the poison is of a volatile character, or is liable to destructive decomposition, be employed with the certainty of valuable results, at considerable periods after death. The substance or liquid submitted to analysis may be either a portion remaining unconsumed, or the food in which the poison has been taken; it may be the matters rejected from the stomach, or the secretions by which the poison is eliminated from the system; it may be the contents of the stomach as found after death; or, finally, the viscera themselves or the blood where it has arrived by absorption. The fallacies attending chemical analysis, when conducted by an expert chemist, are few; they arise chiefly from the fact of the possible accidental impregnation of the reagents or of the substance to be examined, with the same mineral poison as that which it is the object of the analyst to detect, or its existence as a natural constituent of either. Other objections that may be raised are due to the faulty manner of conducting the investigation, or to an over-hasty inference from too limited a number of tests. In estimating the value of the chemical proof of poisoning, the quantity of the supposed poison is of essential importance. The question of the life or death of the accused person in trials for murder, or of his character under other circumstances, is too momentous a one to be determined upon any but the most positive proof. This, in the present instance, consists in the extraction from the dead body, or from the matters discharged during life, a substantial portion of the alleged poison, which can be recognized not only by its behavior with different reagents, but by its physical qualities, the form of its crystals, if any, its taste, smell, &c. Unless, moreover, this evidence points to the same cause of death as that which is indicated by the symptoms, it would be not only hazardous, but cruel, to conclude that a crime had been

committed. Indeed, the only value of chemical analysis in judicial questions such as those referred to, is, when its results are positive, to corroborate the evidence derived from the symptoms during life. With regard to the possibility of poison being surreptitiously introduced into the stomach *after* death with a view of casting suspicion upon others, we may safely say that its consideration is not required until some authentic instance of the fact can be produced. This is one of the chimeras of medical jurisprudence, which the ingenuity of authors has evoked, but whose existence is fabulous if not absurd.

§ 504. (4.) *Experiments upon animals.*—In the succeeding pages it will be found that little allusion is made to these, in proof of the mode of action of poisons. It appears to us that well authenticated instances of poisoning in the human subject are far better adapted to advance our knowledge of toxicological agents than are experiments upon the lower orders of animals. The frequent variation in the effect of poisons upon these creatures, the security enjoyed by some of them against poisons which are virulent in their action upon man, and the difficulty of accurately distinguishing the symptoms which are the result of the operation often required for the introduction of the poison into the animal's stomach, from those which are due to it alone, are the principal grounds on which we are disposed to rest our exclusion of this kind of evidence. We can better afford to dispense with evidence of such doubtful and fallacious character, when it is remembered that practically an appeal to such experiments is rarely received with favor. The only case in which the effect of poison upon animals practically becomes a question, is in those not uncommon instances in which some one or more of the domestic animals have sickened and died in consequence of eating portions of the suspected food which has been thrown out, or where, for sake of experiment, it has been given to them. But here the mere fact of their dying suddenly after eating of the suspected food, is in itself important enough to direct inquiry into the case. The peculiar symptoms manifested by them cannot be a matter of much interest, although it may occasionally be necessary to make a chemical analysis of the contents of the digestive organs for the purpose of ascertaining the nature of the poison contained in the food. This course has frequently been resorted to, and much light thereby thrown upon cases which might otherwise have remained doubtful.

§ 505. 4th. *Differential diagnosis of poisoning.*—The physician is often at a loss, upon the first view of a case of poisoning, to determine whether the symptoms presented by the patient may not be really due to disease. The aspect of a case of irritant poisoning presents a certain resemblance to cholera or to gastro-enteric disturbance, and most of the phenomena of narcotic poisoning are found in acute diseases, affecting the brain or spinal marrow. Should he content himself with remaining a silent spectator of the case, he may remain in doubt until its close; but if, on the contrary, he has witnessed or been made aware of the time and circumstances under which the symptoms came on, and their mode of invasion, he will be less embarrassed, and if an autopsy is obtained, can seldom be at a loss to give a decided opinion. The diagnosis must always remain incomplete without a *post-mortem* examination, whether its results be positive or negative; and hence, for practical ends, the

careful analysis of symptoms in those diseases, which leave but few traces behind them, is of primary importance.

§ 506. (1.) The diseases most apt to be mistaken for *irritant* poisoning are:—

(*a.*) *Cholera.*—This disease in its *malignant* form, as is well known, is often rapidly fatal; it may supervene shortly after a meal or a draught of liquid; its onset is sometimes sudden, although usually preceded by diarrhœa; there is great thirst, vomiting, and purging without effort, of a thin and slightly turbid liquid; the surface is cold and shrivelled, the features collapsed, the voice almost extinct, the pulse feeble or imperceptible, and the intellect undisturbed; the lesions discovered after death are not sufficiently characteristic to be used in evidence, the most uniform, perhaps, being an increased development of the glands of Brunner in the small intestine. In most of the symptoms enumerated, it may resemble very closely a case of poisoning by arsenic or other irritant, but there are, nevertheless, sufficient means of distinction. In poisoning by the irritants, a burning sensation in the throat and stomach, and pain and distress in the whole abdomen, but chiefly over the stomach, precede, or are simultaneous in their occurrence with the vomiting. They are the most prominent and constant symptoms during the continuance of the case. The matters passed from the stomach and bowels, after their previous contents have been evacuated, are mucous and bloody, and are not spouted forth as in cholera, but rejected with great distress and effort. The anus is often indeed excoriated by their irritating properties. Furthermore, it may be observed, that those who have once witnessed a case of malignant cholera, will most probably have the peculiar, but indescribable features of this disease so impressed upon their memory, that they will not readily mistake for it any case of irritant poisoning. Finally, the epidemic prevalence of the disease, or the fact that about the same time other cases, resembling Asiatic cholera have occurred, will materially assist the physician in giving a positive opinion as to the nature of the attack.

§ 507. (*b.*) *Bilious cholera*, or *cholera morbus*, as it is usually termed, is a disease which has more points of resemblance to the effects of poison, than that which has just been mentioned. In it, both the extreme collapse and the peculiar rice-water discharges are not seen; but, on the other hand, the vomiting and purging are of a bilious character, and there is excessive pain in the abdomen. The progress of the case is, however, different. The pain in cholera morbus is remittent, coming on in paroxysms: and in proportion as the offending matters are discharged, the vomiting is less frequent and painful. In irritant poisoning, on the contrary, the pain is constant, and there is usually also tenderness upon pressure; the vomiting is of mucus and blood, and the discharges from the bowels are of a similar character. The tendency in the latter is to death, in the former to recovery. Cholera morbus is seldom fatal, and when it is, death does not in general take place for several days. The contrary is the rule in poisoning by the irritants. Such are the distinctions usually advanced by authors; and while they are, as a general rule, undoubtedly correct, it should not be forgotten that distinctions valid in medicine, may not be so in their application to criminal cases. While in the science of medi-

cine, diagnosis is founded upon a careful investigation of the prevailing and general characters of diseases, the most delicate questions in medical jurisprudence are, on the other hand, determined by exceptional cases. Now, as experience shows that persons may not die from the effect of the poisonous irritants until several days have elapsed, or, indeed, that they may not die at all, we are at a loss to perceive how, in such cases, it will be possible, in the absence of circumstantial and moral evidence, to decide that the symptoms were due to attempted poisoning, rather than to the disease in question; for, although there may be some points of distinction, as, for example, the early occurrence of a burning sensation in the throat, the unremitting character of the pain and the sanguinolent discharges, yet these may be absent in mild cases of poisoning, and where life is not destroyed. On the whole, we consider the assertion hazardous and untrue, that in every case the symptoms of irritant poisoning can be distinguished from those of bilious cholera.

The corrosive poisons leave traces behind them sufficiently distinct to prevent any likelihood of mistaking their effects for those of disease.

There are certain diseases or sudden accidents partially resembling in their symptoms those of the irritant poisons which are so readily recognized on post-mortem examination, that it is needless to enlarge upon the modes of distinguishing them. These are rupture of the stomach, intestine, biliary ducts, and uterus, and no one will contend that such lesions can be produced by poisoning.

§ 508. (*c.*) *Perforation of the stomach* may, however, give rise to embarrassment; not, indeed, so much from the symptoms of the disease when considered alone, but from their offering perhaps sufficient resemblance to those of poisoning to support the opinion that the lesion referred to may be due to this cause. While it is true that in this disease, the seizure is sudden and the pain in the abdomen acute, it is not preceded by the sensation of burning in the throat and stomach, nor is the vomiting urgent unless upon the ingestion of the liquids. There is again no diarrhœa; the main symptoms are acute diffused pain all over the abdomen arising from peritonitis, and the patient is collapsed from the first. But in a case of this kind which has not been closely observed, the discovery after death of the perforation in the stomach will naturally awaken the suspicion of poisoning. If we now inquire under what circumstances this lesion is produced in cases of poisoning, we will find that with the exception of the corrosive acids it is seldom occasioned by any kind of poison. Perforation from arsenic, which poison is the one to which it will most probably be attributed, is so rare an event that but three cases are said to be on record, and the fact of the perforation being so unusual in a form of poisoning so exceedingly common, renders it highly probable that in these instances it was due to an already diseased state of the coats of the stomach. But the corrosive poisons, which undoubtedly produce, in many instances, a perforation of the stomach, leave in addition such manifest traces of their action upon the throat, œsophagus, and stomach, not to mention the corrosion of the mouth and lips, that it seems to be inexplicable how the single fact of the perforation should leave any doubt in the mind of the examiner or of the jury. Moreover, the character of the perforation alone affords a sufficient

ground of distinction. The stomach in such cases is blackened and extensively destroyed; the aperture is large, its edges rough and irregular, and the coats are easily lacerated. Further, the poison escapes into the cavity of the abdomen, where it may be easily discovered by chemical analysis. In perforation from disease, on the other hand, if the affection be of a cancerous nature there will be no difficulty in distinguishing the cause, and if it be simple ulceration, such as occurs sometimes in persons in the enjoyment of apparently good health, the opening is also characteristic in its nature. "The aperture is usually of an oval or rounded form, about half an inch in diameter, situated in or near the lesser curvature of the stomach, and the edges are smooth. Indeed it has not unfrequently the appearance of having been 'punched out.' The outer margin of the aperture is often blackened, and the aperture itself is funnel-shaped from within outwards—*i. e.*, the mucous coat is the most removed, and the outer or peritoneal coat the least. The coats of the stomach, round the edge of the aperture, are usually thickened for some distance; and when cut they have almost a cartilaginous hardness." (Taylor.) Death takes place from peritonitis, the contents of the stomach being effused into the cavity of the abdomen.

§ 509. There is still another form of perforation, which is due to a solution of the coats of the stomach by its contents after death. It cannot give rise to a suspicion of poisoning, unless in the absence of any knowledge of the symptoms preceding death. It is purely a cadaveric phenomenon, and may occur in the stomach of persons dying from any cause, provided the peculiar fermentative process necessary for its production exist.(*h*) It is formed only in the larger end of the stomach, the opening is large and irregular, with ragged and pulpy edges and no surrounding inflammation. The edges may be discolored and black, as the result of a chemical action of the intestinal gases upon the coloring matter of the blood. There is no peritoneal inflammation, but the spleen, diaphragm or other subjacent viscus may be softened by the acid. The absence of any disorganization of the pharynx and œsophagus, and of peritoneal inflammation, is sufficient to distinguish this post-mortem perforation from that caused by corrosive poison, with which alone it is possible to confound it. Dr. Budd has found, naturally enough, that this post-mortem softening of the coats of the stomach is more common in hot weather. He says: "During the past summer, which was a very hot one, my attention was casually drawn to this subject, and from the middle of May to the middle of August, I carefully examined the stomach in all the bodies that were opened in the King's College Hospital. In several instances the mucous membrane of the stomach, in the greater curvature, was completely destroyed, and in a very large proportion, it had been clearly acted

(*h*) See Med. Times and Gaz. (No. 246, p. 268), for a case in which the stomach of a child (which had been asphyxiated by its intoxicated mother hugging it too closely) presented the following appearances: Nearly the whole of the great *cul de sac* had disappeared; the edges of the aperture were thin, jagged and flocculent; another similar but smaller opening existed lower down and abutted upon a corresponding aperture in the transverse colon. No unnatural adhesions or other morbid appearances existed, and a quantity of milk was found in the stomach and in the cavity of the abdomen.

upon more or less by the gastric juice. I renewed my observations in October, but the change, in a striking degree at least, was then much less frequent."(*i*)

Should the rules thus laid down for the discrimination of the source of these perforations not prove sufficient, a resort to chemical analysis will render the demonstration complete. If any poison has been taken in so large a dose, or is possessed of such violent properties as to cause the lesion thus referred to, it will readily be found by these means. It has been said that a person may die with the symptoms of irritant poisoning, and after death, perforation, the result of cadaveric change, be found, and that hence the knowledge of the true cause of the perforation does not exclude the idea of poisoning. It is true that such a rare coincidence may happen, but the want of connection between the poison and the perforation merely renders it necessary to support the charge upon other evidence. The case of Miss Burns, for the murder of whom, by poison, a Mr. Angus, of Liverpool, was tried in 1808, is one in which this doubt arose. The charge of poisoning was not sustained by chemical or pathological evidence, and the prisoner was acquitted.

§ 510. *Perforation of the intestines* is also occasionally met with, but as it is not the result of poisoning, except in circumstances where this can be readily known, it is unnecessary to dwell upon it.

§ 511. (*d.*) *Gastritis, Gastro-enteritis, and Peritonitis.*—It is the natural effect of poisonous irritants to produce one or more of these diseases, but as they may arise from other causes, a distinction is in practice necessary. Gastritis is rarely, if ever, primary or idiopathic, and with the other two affections has a more protracted course than is usual in irritant poisoning. Diarrhœa, so universal a symptom of irritant poisoning, is not always present in these diseases, and there is in them an intense febrile condition which is not seen in poisoning. However satisfactory these distinctions may be to a physician, it is apparent that they may have little weight with others; hence, practically, it is important to examine them closely, for the accusation in such cases will have to depend upon the results of the chemical investigation.

(*e.*) *Strangulation of the intestines* has been enumerated among the diseases likely to awaken suspicion of poisoning, but with little justice, for if the symptoms are not sufficient to distinguish it, most certainly it cannot fail to be detected upon the post-mortem examination.

§ 512. The symptoms produced by *narcotic poisoning* may be closely imitated by those of natural diseases, such as apoplexy, epilepsy, congestion of the brain, and tetanus. Indeed, occasionally the similarity is so great, that, upon the medical evidence alone, it may be impossible to acquire a certainty of the cause of death. Many distinctions have been drawn by writers upon toxicology, between the effects of narcotic poisons and those of diseases of the brain and spinal marrow, but they serve only to show the very close analogy between them. When, moreover, it is remembered that the most important of these poisonous agents leave no distinct traces in the dead body of their action, it will be perceived that the differential diagnosis must come

(*i*) Lancet, 1847, p. 593.

to depend mainly upon the results of chemical investigation, and the moral or circumstantial evidence in the case.

(*f.*) *Apoplexy*, it is said, may be distinguished from opium poisoning by the following considerations, viz: that it does not usually occur under the age of thirty, nor come on without warning symptoms, and that the time of seizure is irrespective of the taking of food or drink; but these distinctions are futile, even when, as is rarely the case, an accurate account of the whole history of the sickness can be obtained. More reliable are the facts that in poisoning by opium the symptoms are gradual in their accession, and that the more confirmed effects are preceded by drowsiness, and that the patient, until an advanced period of the stupor, can be temporarily aroused from it. The pupils also, in general, are strongly contracted, and there is no contortion of the face or paralysis of the limbs. In the majority of fatal cases of apoplexy, the attack is sudden, although indistinct warning symptoms may have preceded it; the patient cannot be roused, the pupils are dilated and insensible, and the face is slightly contorted, indicating a paralytic condition of one side of the body. Yet, let us hasten to say, there are numerous exceptions to these rules, a fact which is easily understood, when we reflect that opium in addition to its specific narcotic properties produces the very same pathological condition, with the exception of effusion of blood into the substance of the brain, from which it is our aim to distinguish it.

(*g.*) *Tetanus.*—The same remark is applicable to the resemblance between the convulsions of *tetanus* and those produced by strychnia. It is needless, therefore, for us to draw a parallel between the diseases referred to and the symptoms so closely imitating them, produced by the poisonous narcotics. Where the success of either prosecution or defence comes to stand upon such vacillating ground as this, other sources of evidence failing, it would be better that the most approved works on pathology should be consulted and the descriptions of disease there given be compared with the symptoms enumerated under the narcotic poisons, than that the reader should draw an unwarranted conclusion from such an imperfect abstract as it would be proper for us to give in this place.

In Palmer's case, the distinction between the symptoms of poisoning by strychnia, and tetanus, was thoroughly investigated.(*ii*)

§ 513. Finally, all cases of *sudden death* may awaken suspicion of poisoning. If, as may well be the case, the post-mortem alterations do not clearly indicate the seat and nature of the affection, a review of the manner of dying, and the absence of any positive result from chemical investigation, must at once negative the presumption of poison having been taken. Thus, certain diseases of the heart, over-distension of the stomach, fatal syncope, and some obscure diseases, may not be recognized at the autopsy, but the mode of death in them is entirely different from that in any form of poisoning, except, perhaps, by prussic acid, in which the odor or chemical tests will disclose the cause of death. The importance of a careful collection and comparison of *all* the medical evidence in every case, cannot be too strongly insisted upon; for

(*ii*) Lond. Lancet, May and June, 1856.

upon this combination of proof it is that a correct knowledge of the true cause of death must depend.

§ 514. (2.) *Sources of error arising from natural changes in the body after death.*—Having thus shown the chief means of distinction between the effects of poison and of the natural diseases to which the human frame is subject, it only remains for us to point out some sources of error which the natural changes taking place in the body *after* death may give rise to. This important subject is one which has received but little attention at the hands of medical jurists, but there can be no doubt that the *natural* appearances of those parts of the body usually inspected after death, where poisoning has been attempted or is alleged, are often mistaken for pathological changes induced by the administration of poison. Nothing is more common than to meet with the expressions that "the stomach and intestines were red and inflamed," "the mucous coat corrugated," "the brain was highly congested," "the blood of a dark color, and fluid," &c.—statements which are objectionable not only on account of their want of precision, but because they may be predicated of conditions perfectly natural and healthy. Dr. Yelloly's observations, though often quoted, are deserving of repetition here. He states,

1st. That vascular fulness of the lining membrane of the stomach, whether florid or dark-colored, is not a special mark of disease, because it is not inconsistent with a previous state of perfect health.

2d. That the effects of putrefaction and spontaneous changes, induced by the loss of vitality, are sometimes attributed to the action of poisons.

3d. That the vascularity in question is entirely venous—the florid state of the vessels arising from the arterial character of the blood remaining for some time in the veins after its transmission from the arterial capillaries at the close of life; the appearance, however, is sometimes due to transudation only.

4th. That the fact of inflammation having existed previously to death cannot be inferred merely from the aspect of vessels in a dead part—there must, at least, have been symptoms during life.(*j*)

In the examination of the *stomach* it will be found that it presents variable appearances, according as it is inspected during or after the process of digestion, or after long fasting; whether it is empty or full, distended or contracted; and whether the distension is due to liquid or to air.

During, and immediately after *digestion*, the stomach is filled with gas and the remains of the food, and is, therefore, moderately distended, and its mucous membrane appears thin and does not lie in folds. Its color is of a pale rose, uniformly spread over the surface, or if the organ is unusually distended, it is gray or dirty white. On the other hand, in the *fasting* condition it is strongly contracted, and the mucous membrane is corrugated and thick. Its color is of an ashen gray when it is covered with mucus, but when this is not the case, it is of a reddish-brown. It may be partly contracted and partly distended, in which event, the differences referred to will be visible at the same time in the pyloric and cardiac portion. Moreover, the cadaveric hypostasis, or settling of blood, will be seen on the folds of the mucous membrane, or in those por-

(*j*) Med. Gaz. vol. xvii. p. 309.

tions of the organ which are the least distended. After the process of digestion is entirely completed, the abdominal system of veins is loaded with blood, and the same engorgement occurs in certain diseases of the heart and lungs; should death take place at such a time, the mucous membrane of the stomach is found highly injected, and, in consequence of the transudation of liquids taking place in the dead body, ecchymoses are formed which often have the appearance of submucous extravasations; they frequently occupy the entire half of the stomach and both curvatures, and have a bluish-slate color. This injection may also occur in streaks, and thus give rise to an unfounded opinion that death was due to some irritant. This is especially the case where powdered substances, such as arsenic, are found near them, but it is a mere coincidence, since the existence of folds or rugæ is a sufficient explanation of the adhesion of the powder to these places.(*k*)

§ 515. Inflammatory redness may be known not only by its dirty hue, but by the simultaneous softening of the mucous coat. This is a pathological change which is of very frequent occurrence, especially in persons of intemperate habits —a fact which should not be overlooked in questions of poisoning. The softening of the mucous coat after death has been already referred to, when speaking of perforation of the stomach; it is of course seen in lesser degrees, and, most probably, when not equally distributed over the whole stomach, is purely a cadaveric change depending upon the solvent powers of the liquids contained in the organ. When the mucous coat is found apparently thickened, this condition is often due merely to the stomach being in a contracted state; and, on the other hand, it may appear to be very thin when the appearance is solely due to its distension. Similar sources of error to those we have thus cursorily noticed, arise in the inspection of the brain, heart, and other organs. The physician should be upon his guard against them, and carefully distinguish the changes produced by disease from those which are brought about in the act of dying, or after death, by the position of the body and the transudation of liquids. If familiarity with the ordinary post-mortem appearances does not enable him to form a positive opinion as to the causes of death, it is far better that he should have the candor to say so, than, by giving an unwarranted opinion, incur the risk of causing the innocent to suffer. But in every case it is proper that precise and accurate language should be used in the description of post-mortem appearances, and that such expressions as inflammation, gangrene, &c., which imply the manner in which the morbid change has resulted, should not be used, but rather, instead, such terms as will simply express the *physical* condition of the part, in reference to its size, color, consistence, &c.

§ 516. From the foregoing remarks it is, we think, apparent that the most perfect evidence of poisoning is derived from the combined results of the investigation of the symptoms, post-mortem appearances and chemical proof; should any portion of this evidence be wanting, the effect is thereby weakened, but not necessarily always to an equal degree; since a chemical analysis affording positive results, or a decided and characteristic post-mortem change, or a well marked set of symptoms, may each in certain cases afford high proba-

(*k*) Darstellung der Leichenerscheinungen, &c., von Dr. Josef. Engel, Professor an der Universität zu Prag. Wien. 1854, 8vo.

bility, if not conclusive demonstration of the fact of poisoning. On the other hand, the failure of the chemist to discover poison in the dead body does not always destroy the value of other evidence sustaining the fact of its having been taken, since the whole of it may have been removed by vomiting and purging, or if the patient have lived long enough, been absorbed into the system, and then eliminated from it principally by the urine. Indeed, in the case of the vegetable poisons, the chemical analysis is often fruitless, they having been rapidly volatilized, decomposed or absorbed, but here, on the other hand, the symptoms are less likely to be taken for the effects of disease, or if they are, the fallacy of the assumption is demonstrated by the autopsy.

§ 517. For this reason also the demonstration of the presence of a poison in the body is generally sufficient to establish the fact of poisoning; the amount detected may bear but a small proportion to that which was taken, but is as conclusive as if the whole were discovered. If, for example, the contents of the stomach contain sufficient arsenic, to form the metallic ring or spot, by Marsh's process, the evidence is quite as good as if a more ponderable quantity had been found. As, in every case, the opinion of the expert may be strengthened by the perfect combination and correspondence of all the medical evidence, no portion of it should be neglected, since however strong it may appear to be, in a medical point of view, it is far from certain that subsequent inquiry may not evoke some doubts, which a more perfect examination might have obviated.

§ 518. 5th. *Classification of poisons.*—We have followed in this treatise the classification usually adopted, viz: into IRRITANT, NARCOTIC, AND NARCOTICO-IRRITANT poisons. This division cannot be rigorously maintained except for the end of convenient reference; since there are poisons usually classed under irritants, which are likewise sometimes narcotic in their action, as, for example, arsenic and oxalic acid; and, on the other hand, some of the pure narcotics, especially opium, occasionally produce the symptoms of irritant poisoning. The classification is, however, sanctioned by the use of the most eminent toxicologists, and in the present imperfect state of our knowledge of the mode of action of poisons, has fewer objections against it than can be urged against any other.

The symptoms produced by each class of poisons are sufficiently indicated by their name. Thus, the irritants produce vomiting and purging, intense abdominal pain, and fatal exhaustion. Septic irritants produce, in addition, symptoms which are known as typhoid; and certain metallic irritants in small and long continued doses give rise to impaired digestion and nutrition, and death by a gradual exhaustion of the system. Their primary action is expended upon the intestinal tube, causing inflammation or corrosion, and the effect upon the nervous system is secondary. The narcotics produce fulness of the head, vertigo, dimness of vision, delirium, coma, paralysis, and sometimes tetanic convulsions. The narcotico-acrid poisons produce stupor or delirium and convulsions, and also irritate the stomach and bowels, causing vomiting and purging. Both these and the irritant poisons are commonly known by their taste, which is hot and acrid, metallic, nauseous, or bitter; arsenic is the chief exception to this rule, as its taste may be either unperceived

or be only distinguished as rough or sweetish. The corrosive poisons, such as the mineral acids and caustics, have so violent an effect upon the mouth and throat, that the mere fact of their having been taken, affords a good presumption, in this country, at least (from the readiness with which any kind of poison can be obtained), against their having been voluntarily swallowed. The pure narcotics have only a slightly disagreeable taste. This class is, however, but a small one compared with the others, and, with the exception of opium, rarely gives rise to judicial investigations.

CHAPTER II.

IRRITANT POISONS—ACIDS.

I. *Sulphuric Acid.* (Oil of Vitriol.)

§ 519. Concentrated sulphuric acid is a dense, oily, transparent and colorless liquid, with an energetic attraction for water. When diluted with water, heat is evolved by the mixture. It rapidly destroys and carbonizes organic matter, the extent of the destruction depending, of course, upon the degree of concentration of the acid, and the length of time it remains in contact with the organic structure. It is more frequently taken and given by mistake than by design, at least in our country, although cases are not wanting, in which it has been criminally given to young children. An interesting case is related in Henke's Zeitschrift, where it was used with the hope of inducing abortion. From the ease with which it can be procured, without awakening suspicion, it is sometimes made the means of self-destruction, and of late years, in England, numerous cases have occurred where it has been employed for the purpose of disfiguring the person, by being clandestinely thrown upon the face or neck.

§ 520. 1st. The *symptoms* which follow the ingestion of this acid depend for their intensity upon its degree of concentration, and the quantity taken. When the strong acid has been taken, violent symptoms at once arise. The lining membrane of the mouth, throat, œsophagus and stomach, being instantaneously corroded by it, extreme agony is felt in these parts, violent efforts to vomit are made, and dark and bloody masses of mucus and detached and altered membrane are discharged. Death takes place in extreme suffering, generally within twenty-four hours. In a case observed by Mr. Traill, death occurred in one hour, and in another related by Casper, where an adult took by mistake a mouthful of crude sulphuric acid, death took place in two hours. In most instances it will be found that the early administration of antidotes has mitigated the symptoms and prolonged existence for a short time. The last named author mentions the case of a child, only seven weeks old, which lived eight days after it had been given concentrated sulphuric acid by its mother. Here the child was made to take carbonate of magnesia shortly after the poison had been administered.

When the diluted acid has been taken, the symptoms are less violent and the case is more protracted. The presence of food in the stomach has an im-

portant influence upon the fatality of the dose, since much of the corrosive or carbonizing action of the acid may be expended upon this, and the mucous membrane of the stomach be thereby shielded. Cases are reported in which persons have survived for a long time. Thus, a young woman is referred to by Mayo, who lived eleven months after swallowing a tablespoonful of sulphuric acid, and then died from marasmus, in consequence of imperfect nutrition.

§ 521. 2d. The smallest *quantity* which has been taken, with rapidly fatal results, appears to be that which was given in a case quoted by Dr. Taylor. In it, the quantity is said not to have exceeded forty drops. But the patient was a child only a year old, and antidotes were administered about half an hour after it had taken the acid. The symptoms, however, came on immediately and the child died in twenty-four hours. Dr. Christison says, that one drachm proved fatal to a young man in seven days. It is always difficult, however, to ascertain the exact quantity which has been swallowed, since the immediate impression made upon the mouth by the contact of so corrosive a liquid, naturally excites an instantaneous effort to get rid of it. The amount actually swallowed forms usually, therefore, but a small portion of what is taken into the mouth. It may indeed not reach the stomach at all, its action being expended upon the throat and œsophagus, and proving fatal by the inflammation and disorganization there produced.(*j*) Occasionally, also, it enters the air-passages. A case of recovery after an injection of sulphuric acid, given in mistake for castor oil, is reported.(*k*)

§ 522. 3d. *Post-mortem appearances.*—The following case will illustrate the effects of this poison when concentrated and swallowed. A man, thirty years of age, went to his closet in the dark, and drank a "good mouthful" of commercial sulphuric acid. He was bled shortly after, and the blood is described as being of a syrupy consistence. Milk and soapsuds were given to him, and brought on vomiting, but he died in two hours. The whole tongue was white and sphacelated, and the mucous membrane here and there detached. The fauces and œsophagus were of a grayish-black color; the stomach was perfectly black on both surfaces, and of a soft and pulpy consistence. The omentum majus was likewise partly carbonized, in consequence of the escape of the acid into the abdominal cavity. The upper portion of the small intestine was of a blackish color, and the mucous membrane swollen and indurated. The contents of the stomach yielded, on chemical examination, one drachm and seventeen and a quarter grains of free sulphuric acid.(*l*) In Mr. Traill's case, a washerwoman took a wineglassful of crude commercial acid of the specific gravity of 1.833, in mistake for ale. Although the proper antidotes were very soon administered, she died in one hour. A hole with ragged edges was found at the fundus of the stomach, and the adjacent tissue tore with the slightest touch. The rest of the mucous membrane was mottled with dark-brown patches. There was also great inflammation of the peritoneum, from the escape of the acid.(*m*) When much acid has been swallowed,

(*j*) This happened in a case reported by Dr. W. Hull, in the Lond. Med. Gaz. June, 1850.

(*k*) Ed. Month. Journ. April, 1850.

(*l*) Casper Gericht. Leichenöff. 1 H. p. 117. (*m*) Month. Journ. Aug. 1854.

the stomach presents an appearance which is altogether peculiar and characteristic. It is as black as coal, and its tissue is softened to a jelly. The acid, softening the walls of the bloodvessels, allows their contents to escape, and then acting upon the blood, gives it a dark color. That such is the source of the black color referred to, is proved by the fact that it is not produced when sulphuric acid is introduced into a dead stomach.

In general, the eroded and inflamed appearance of the mouth and throat is found to coexist with the blackened and disorganized condition of the stomach. But sometimes the poison does not reach the stomach, and when this is the case in young children, death may take place from the local action on the fauces alone. In Dr. Hill's case, already referred to, it reached the lungs. The epiglottis was partially destroyed, the vocal chords and the mucous membrane of the trachea were softened, the left pleura was perforated, and a crust of sulphate of lime formed upon the ribs. There was no trace of the acid, either in the œsophagus or stomach. The person was an adult female. It is probable, in such cases, that death takes place by suffocation, the glottis being closed by the tumefaction of the mucous membrane. Husemann reports two fatal cases in children of five years of age. The symptoms were chiefly those of inflammation of the throat and larynx, without any evidence of disorder of the stomach.(*mm*) No dissection was made. In most cases of poisoning with sulphuric acid, there are also traces of its action left upon the skin, near the mouth, either from a portion escaping when swallowed, or from the corrosion of the vomited liquids. The marks thus left upon the skin are of a dark brown color, and of a leathery consistence. Where, however, the acid has been given in a spoon, the anterior portion of the mouth may escape entirely. In a case referred to by Dr. Taylor, the fauces, œsophagus, and stomach of an infant ten days old, were much corroded by sulphuric acid, but there was no appearance of injury to the mouth. This was probably owing to a spoon having been used, and the poison having been poured down the throat slowly, as the mucous membrane was extensively corroded at the back part. A case is reported, in which, although the acid was taken from a teacup to the amount of fifteen and a half drachms, there was not the slightest vestige of a stain on the outside of the lips, angles of the mouth, cheeks, neck, or hands, nor upon the clothing.(*n*)

§ 523. On the other hand, a case occurred in France, in which, although no corrosion, nor any indication of the use of an acid, was seen in the mouth, fauces, œsophagus, or stomach, and the appearances in the last organ were not very striking, yet several eminent men, among whom were Devergie and Lesueur, gave their opinion that death was caused by sulphuric acid. No trace of this acid was discovered in the viscera, and the only ground for the opinion seems to have been the presence of stains of sulphuric acid upon the clothing of the child, and a slight pathological alteration in the stomach. In children, especially, such an opinion can hardly be justifiable on so slender grounds.

We find a case of gelatiniform softening of the stomach, with perforation

(*mm*) Journ. f. Pharmakodyn. ii. 166.
(*n*) Dr. Walker, Ed. Month. Journ. June, 1850.

of the fundus, and effusion of a brownish liquid into the peritoneal cavity, reported by Dr. Casper. In this case there had existed suspicion of poisoning, which his opinion of the result of the examination set at rest; and it is by no means impossible that the preceding case may have been a similar one. Were it admitted, in the absence of direct proof by chemical analysis of the contents of the stomach, that an inflammatory condition, a softening, or ulceration of the stomach could be regarded, apart from any corrosion of the mouth or fauces, as presumptive evidence of poisoning, we should be led undoubtedly into many grave mistakes.(*o*) Spontaneous softening of the stomach in infants, and ulceration and perforation of this organ in adults, are not rare events, but their characters are far different from the charring and disorganization produced by sulphuric acid. We think that in no case is an opinion warranted that sulphuric acid has been swallowed, unless it can be clearly traced by its effects from the mouth or fauces to the stomach.

It has already been mentioned that in a case of poisoning by this acid the blood had a syrupy consistence. This condition is stated by Casper to be the ordinary one. He adds that the blood is generally of a cherry-red color, and that it has an acid reaction. This acidity has also been noticed in a pericardial effusion, and in the amniotic liquid of a pregnant female poisoned by sulphuric acid. It would appear that after death by this poison bodies remain fresh and without smell for an unusually long time; a fact which Casper explains by stating that the acid continues, until exhausted, to neutralize the ammonia which is given off in decomposition.

§ 524. This acid has been given by mistake in enema, and in one case death was produced thereby. It has also been thrown into the vagina, with the view of procuring abortion. In cases such as these the black and disorganized appearance of the parts, and the evidence of the presence of the acid on chemical analysis, will form the grounds of an opinion as to the cause of death.

§ 525. 4th. *Poisoning by ink.*—A drunken soldier had given to him a large glass of ink, under the pretence that it was porter. He drank it, and after sleeping for an hour, awoke in the most violent pain. He suffered extreme weakness, headache, and painful cramps in the thighs. After four or five hours he commenced vomiting a pasty mass mixed with ink, which gave strong indications of sulphuric acid. Mucilaginous and saccharine beverages were given him, and after a short time he improved. He was convalescent on the third day, but still complained of weakness, trembling, and an oppressive pain in the back of the head.(*p*) Ink, we may observe, does not usually contain this acid, and the liquid employed may not have been ink, but blacking, of which sulphuric acid is an ingredient.

§ 526. 5th. *Chemical examination.*—Concentrated sulphuric acid is known by its oleaginous appearance, great specific gravity, its property of setting free the carbon of organic substances (thus charring them), and by the evolution of heat on its being mixed with water. When *diluted*, the best evidence of its presence is obtained by the addition of any of the soluble salts of baryta, the

(*o*) See *ante*, §§ 508, 509.
(*p*) Am. Journ. Med. Sci. April, 1854, from Pharmaceutical Journal, Oct. 1853.

sulphate of baryta being immediately precipitated in the form of a heavy white powder. The precipitate is insoluble in nitric and hydrochloric acids. Further proof of its presence may be obtained by igniting the precipitate with carbonate of soda or with vegetable charcoal, by which the sulphate is reduced to a sulphuret, which may be shown by its blackening a bright silver surface on being moistened with water. In testing a solution for sulphuric acid by means of a salt of baryta, care should be taken that the liquid does not contain too much nitric or hydrochloric acid, as salts of baryta, which readily dissolve in water, are almost insoluble in these acids. The liquid containing the precipitate may be diluted with distilled water, which will redissolve all the other salts but the sulphate. In order to ascertain whether the sulphuric acid exists in a free state, a portion of the liquid may be evaporated to dryness, when, if uncombined sulphuric acid be present, it will be entirely driven off in dense white fumes.

§ 527. When the liquid to be examined is mixed with *organic matters*, it must be filtered; or, if turbid and thick, it should be first boiled with distilled water, and then filtered, before the tests, as above, are applied. In most cases of poisoning by this agent, antidotes have been used, which may have completely neutralized the acid. Hence, although it be not found in a free condition, the presence, for example, in any considerable quantity, of the sulphate of lime, when corroborated by the corrosive effects proper to the acid, will leave but little doubt of its having been used. It should be remembered, also, that if life have been at all protracted, the poison may have been eliminated in various ways. A case has been reported by Mr. Letheby, in which, during the first four days after an ounce of concentrated sulphuric acid had been swallowed, a large quantity was passed in the urine. This same fact has been established by Orfila, in experiments upon dogs.

§ 528. *Stains on clothing.*—The stains on blue and black cloth, made by sulphuric acid, are at first red, and afterwards brown, and the stuff is corroded. The color of black leather is not altered, but the substance is partially destroyed. The stains on all textile fabrics remain moist for a considerable time if the acid have been strong, and, owing to the attraction of the acid for water, they have an unctuous feel. The acid may be detected in these stains after the lapse of many years. Dr. Taylor has detected it in spots made upon a black cloth dress *twenty-seven* years previously. The stain should be cut out, digested in distilled water, and then the liquid, after filtration, be tested by the reagents already mentioned. An unstained portion of the cloth should be submitted to the same test, since many articles of clothing yield slight traces of sulphates when boiled in water. Dr. Taylor has suggested a delicate test for sulphuric acid, founded upon its ready decomposition by organic matter when submitted to heat. About half a grain of the stained dress (cotton) is put into a small test-tube, and gently heated; a piece of paper saturated with starch, and moistened with a drop of iodic acid, being held at the mouth of the tube, the blue iodide of farina is immediately produced by the sulphurous acid generated.(*q*) The only source of fallacy is the occasional presence of

(*q*) Taylor on Poisons, Am. ed. p. 180.

sulphur, as where mucus, serum, or blood may be mixed with the stain. Thus the test is inapplicable, for this reason, to woollen stuffs.

6th. *Aromatic sulphuric acid* (elixir of vitriol).—Besides sulphuric acid, this preparation contains alcohol and aromatics. The proportion of the acid to the alcohol is as 1 : 4.15 by weight (U. S. P.). In an overdose, it produces the same effects as sulphuric acid.

§ 529. 7th. *Sulphate of indigo.*—This is a solution of indigo in Nordhausen, or fuming sulphuric acid. In addition to the other symptoms of poisoning by a corrosive liquid, the deep blue and subsequently greenish color of the vomited matters will at once betray the agent that has been used. In some cases the urine has had a bluish tinge.

II. *Nitric Acid.* (Aqua Fortis.)

§ 530. Concentrated nitric acid, as met with in commerce, varies in color from a light yellow to a deep orange red, owing to the presence of nitrous or hyponitrous acid, but the pure acid is colorless. Red fumes of nitrous acid gas are given off, when a few copper filings are placed in it. It stains organic matter yellow or brown.

§ 531. 1st. The *symptoms* produced by swallowing strong nitric acid, do not differ essentially from those which have been already mentioned as caused by sulphuric acid. There is the same intense burning pain in mouth, throat, and stomach, the same violent efforts to vomit, and urgent constitutional symptoms. The lining membrane of the mouth is stained white, and then yellow or brown, and the enamel of the teeth is attacked. The soreness and swelling of the mouth and throat, the difficulty of swallowing and of respiration, the thirst and salivation, and the excessive pain and distress, are the prominent symptoms. If the person survive long enough, large portions of the lining membrane of the fauces and œsophagus become detached and are thrown up, together with altered blood and shreds of mucus. Similar matters may be discharged by stool. The *diluted acid* occasions the same symptoms in a more moderate degree. Although the immediate corrosive effects of the acid may be recovered from, death may occur subsequently from exhaustion and the injury done to the digestive powers. Dr. Black referred, in some remarks before the Royal Med. and Chir. Soc. of London, to the case of a girl who, "in a fit of despondency, swallowed some strong nitric acid. She left the hospital, but died many months afterwards, but so altered in appearance, that she resembled a woman eighty years of age. She was kept alive for seven weeks entirely by spring water." The œsophagus was nearly closed by the strictures which had resulted from the healing of the ulcerations produced by the acid.(*r*) The period at which this poison proves fatal, varies therefore, according to its dilution, from a few hours to several months. The quantity required to destroy life cannot be certainly known, since, in many cases, it is impossible to ascertain correctly the amount really swallowed. Two drachms are probably sufficient. This was nearly the quantity swal-

(*r*) Lancet, 1850.

lowed, in a case reported by Dr. J. M. Warren. Death ensued on the fourteenth day. (It is stated that three drachms were taken into the mouth, but most of it was spit out.) Dr. Taylor refers to the case of a boy who died in thirty-six hours after taking *two* drachms of this acid. An instance, in which it was poured into the ear of a sleeping person, and caused death after some time, is related by Dr. Morrison.(*s*) Mr. James Haywood, a chemist, lost his life by inhaling the *fumes* of mixed nitric and sulphuric acids in consequence of the breaking of a carboy which held the mixture. The symptoms, which did not appear for more than three hours, consisted mainly of difficult respiration. Death took place in eleven hours. On examination, a considerable effusion of blood was found in the bronchial tubes, and their lining membrane and that of the trachea were congested. The larynx was not examined.(*ss*) As in the case of other corrosive poisons, death from nitric acid may occur within a few hours or after several months, according to the quantity and strength of the acid, and the vigor of the patient.

§ 532. 2d. *Post-mortem appearances.*—The stains made by nitric acid upon the mouth and lips are usually of a deep yellow color; as these consist of a sphacelation of the lining membrane, they are easily detached and the subjacent surface is found even and glistening. If the person have survived several days, they may have been already cast off. The same appearance is found in the fauces, and more or less of it in the œsophagus. The stomach is softened, sometimes perforated, its internal surface is of a greenish-yellow but sometimes of a black color, owing to the erosion of vessels and the effusion of blood, and the mucous membrane is ulcerated or destroyed. In Dr. Warren's case, the patient was a negress, who swallowed the poison with the hope of destroying her child, supposing that she was pregnant. She died on the fourteenth day. On dissection, there was observed great rigidity; upon the middle of the tongue, a large, yellowish, smooth patch; some redness of the epiglottis; the œsophagus was healthy for the first two inches, but below this it was found exceedingly soft, of a greenish color internally, purple externally, and full of coagulated blood. The stomach was in a similar though much worse state; externally, it had the same purple color, and was universally adherent to the neighboring parts by recent lymph, except at the left extremity, where there were old and close adhesions to the spleen; internally, it was of a greenish-yellow color, emphysematous, and so perfectly softened and pliable, that it could not be separated from the surrounding parts without giving way in every direction; the anterior face became detached from the rest of the organ to a great extent when the abdominal parietes were raised; its cavity was filled with recent, coagulated blood, and the open orifices of several vessels were distinctly seen on the inner surface. The intestine contained blood throughout the first two or three feet, but was otherwise uninjured.(*t*) In a case observed at the Hôtel Dieu, at Lyons, the stomach was distended with gas, and perforated in the cul-de-sac; the opening, however, was partially

(*s*) Dublin Journal, vol. ix. p. 98. (*ss*) Lancet, Apr. 1854, p. 429.
(*t*) Extracts from Boston Soc. for Med. Improvement, Am. Journ. Med. Sci. July 1850, p. 36.

plugged by the spleen, which had become adherent over it, but which itself was much corroded. In the small intestine, there were numerous sloughs.(*u*) In another case, where the person survived the poisoning fifty-four days, the stomach was converted into a vast abscess, with fungous walls made by adhesions among the adjacent viscera. The natural shape and structure of the organ could no longer be distinguished.(*v*)

§ 533. 3d. *Chemical examination.*—Nitric acid may be readily known by its physical properties already mentioned, and by the fumes of nitrous acid which are given off when it is poured upon copper, tin, or mercury.

(1.) The *diluted acid* is not so readily detected as many other acids. Its compounds being very soluble, no precipitant can be found for it. Hence, it may be distinguished from muriatic and sulphuric acids by the absence of any reaction with the nitrates of baryta or silver. In order, however, to be able to affirm its presence, the following tests are recommended: The liquid should be neutralized with carbonate of potash, and then slowly evaporated. The crystals thus obtained are nitrate of potash, and are prisms with dihedral summits, permanent in the air. These should be powdered and mixed with *copper* turnings. If heat is now applied, and moderately dilute sulphuric acid added, the red fumes of nitrous acid become visible, which can easily be recognized by their odor. By this test, so small a quantity of nitrate of potash as one-tenth of a grain, and, consequently, one-twentieth of a grain of nitric acid may be detected. This test is therefore quite satisfactory, and others which are less perfect, are rendered thereby unnecessary.

§ 534. (2.) It may not, however, succeed where the liquid to be examined contains the *organic matters* resulting from the presence of food, or detached portions of mucous membrane. In this case, therefore, the liquid must be filtered, to get rid of all insoluble substances, boiled with animal charcoal, and filtered a second time, or until it becomes tolerably clear. It should then be slowly concentrated by evaporation, and neutralized as before. As in the case of sulphuric acid, this acid may form other combinations in the stomach with the substances which have been administered as antidotes, and thus the difficulty of isolating it be increased. Or, again, the whole of it may have been vomited, or eliminated in other ways from the system. Fortunately, however, for the ends of legal medicine, if nitric acid prove fatal, the appearances upon dissection are so unequivocal as to render a chemical analysis hardly necessary.

§ 535. (3.) *Stains on cloth.*—The spots made upon colored cloth by nitric acid are more or less yellow, but become brown after a time, the texture of the cloth is destroyed, and the spot, unlike that made by sulphuric acid, soon becomes dry. To determine the presence of nitric acid, the stain may be cut out and digested in distilled water. If the liquid have an acid reaction, it should be then neutralized with potash, and allowed to crystallize. The crystals may be examined as before, by heating with copper-turnings, and moistening with sulphuric acid. An unstained portion of the cloth should be examined in the

(*u*) Ch. Jantet, Gaz. Méd. de Lyon, p. 82, 1852.
(*v*) Dr. Delaharpe, Canstatt's Jahresbericht, für 1852, Bd. v. p. 101.

same manner. Stains made by nitric acid will not furnish evidence of its presence after a few weeks have elapsed, the acid being much less permanent than the sulphuric. Hence, the necessity of proceeding at as early a period as possible to the examination of any suspicious stains upon a dress. Dr. Christison, however, has obtained evidence of the presence of the acid in stains on cloth made seven weeks before, and Dr. O'Shaughnessy after an interval of some months.(*w*)

III. *Hydrochloric Acid—Muriatic Acid.* (Spirit of Salt.)

§ 536. 1st. *Symptoms.*—The reported cases of poisoning with this acid are few in number; but they present a strong analogy in their *symptoms and post-mortem appearances* with those of sulphuric acid poisoning. Immediately upon swallowing it there is a burning sensation from the mouth to the stomach, but especially in the throat, attended with a feeling of suffocation and followed by uncontrollable vomiting. Deglutition is almost impossible, all efforts to swallow bringing on vomiting; the voice is low and the respiration frequent and labored. The tongue and fauces are usually covered at first with a whitish pellicle, which afterwards becomes detached, exhibiting corroded spots underneath. In a case observed by M. Guérard,(*x*) a woman aged 24 years, who had swallowed about fifty-three grains of concentrated hydrochloric acid, presented the above symptoms. She however survived a considerable time. The matters vomited on the second night did not present any acid reaction, although no chemical antidote appears to have been administered. Death took place two months after the poison had been swallowed; and some time previous, portions of corroded mucous membrane had been discharged both by vomiting and by stool. Profuse salivation also was observed in this case, and in the beginning, white vapors were exhaled from the mouth. The same symptoms and the same prolongation of life were noticed in a case which became the subject of judicial investigation in Belgium, and which is commented upon by Orfila.(*y*) In two cases referred to by Dr. Christison, and in another, of a child, by Orfila,(*z*) death took place within twenty-four hours. In this latter instance, the acid was poured down the child's throat by its stepmother, as confessed by her after her condemnation. A case of recovery after swallowing an ounce of strong hydrochloric acid, is reported in the Lancet for 1850. In this case the stomach pump was used, contrary to the usual caution enjoined in poisoning by mineral acids. A Hindoo, while intoxicated, swallowed about two ounces of hydrochloric acid, but rejected a portion of it by vomiting. Twelve hours afterwards he presented the following symptoms; the head was thrown backwards, the respiration frequent and moaning; the gums were pale and the teeth unaltered; the tongue also was pale, and, near its centre, deprived of its epithelium; the skin was cold, the pulse small and frequent, the epigastrium tender, and the urine scanty. There was neither vomiting nor purging. In twenty-four hours death took place, the mind remaining clear until the last. The urine contained a large propor-

(*w*) Guy's For. Med.
(*x*) Ann. d'Hygiène, tome xlviii. p. 415.
(*y*) Ibid. tome xl. p. 35.
(*z*) Ibid.

tion of hydrochloric acid.(*a*) In a case under the care of Dr. Budd, a woman 63 years of age died in eighteen hours from the effects of half a fluidounce of hydrochloric acid, taken with suicidal intent. Vomiting, collapse, whitening and abrasion of the lips, mouth, and fauces were observed; swelling of the throat and inability to swallow, with stridulous breathing and thick inarticulate voice, and intense epigastric pain were also noted. Death, without loss of consciousness until near the last, took place by exhaustion.(*b*)

§ 537. 2d. *Post-mortem appearances.*—These vary according to the length of time the person has survived, but bear a general resemblance to the effects produced by the other strong mineral acids. The digestive mucous membrane is covered with whitish superficial sloughs, which subsequently become of a darker color and are found in all stages, lying loose or partly detached, and the mucous membrane inflamed, softened or corroded. In some of the above cases, all the coats of the stomach were destroyed in spots, and perforations resulted. In Guérard's case, there was slight peritonitis. It is important, however, to note that the peritonitis, resulting from perforation of the stomach, only occurred in those cases which survived a long time. In Dr. Budd's case the force of the poison was spent upon the mouth, fauces, and larynx. The mucous membrane of these parts was whitened and softened, the soft palate and tonsil swollen, and a portion of the lining membrane of the larynx was entirely removed.

§ 538. 3d. *Chemical examination.*—If any of the liquid which has been taken remain, it will be easy, if it is hydrochloric acid, to detect its nature, since the physical characters and chemical reactions of this agent are very striking. It throws down, if sufficiently dilute, with nitrate of silver a dense, white, curdy precipitate of the chloride of silver, which assumes a violet color when exposed to light, and is completely insoluble in nitric acid, but dissolves readily in ammonia. Its detection, when mixed with organic matters, is not easy, owing to its tendency to adhere closely to them; but in medico-legal researches we are further exposed to the error arising from the presence, *normally*, of free hydrochloric acid in the stomach. As the quantity of this natural constituent of the body is subject to many variations, and since as much as four or five grains of the pure acid have been obtained from a pint of the fluid of water-brash, it is evident not only that the detection of free hydrochloric acid in a case of supposed poisoning is no evidence that it has been swallowed, but that it is extremely uncertain what quantity it would be necessary to demonstrate before we could feel satisfied that it was not normally present. In the Belgian case, before referred to, it was supposed by the chemists that they had established the fact of poisoning by this acid, although the person had survived two months; a subsequent analysis, however, of the stomach of a person of the same age, who had died of phthisis pulmonalis, gave precisely the same result. Moreover, if the mixture be neutral, it becomes necessary to use sulphuric acid to decompose the chloride which has been formed. But as chloride of sodium (common salt) is almost invariably present in the

(*a*) Annales d'Hygiène, 2ème sér. ix. 209.
(*b*) Lancet, July, 1859, p. 59.

stomach, and is, indeed, a natural constituent of some of the secretions, the detection of hydrochloric acid will afford no indication of the manner in which it was introduced.

§ 539. For these reasons, the chief evidence of poisoning must be obtained rather from the symptoms during life, and the post-mortem investigation, than from a chemical analysis. We merely subjoin, to complete the subject, the following process when the matter to be examined is acid, taken from Dr. Christison's work on Poisons: "Boil it with water, if necessary, filter and distil it with a gentle heat till the residue acquire the consistence of a very thin syrup. Subject the distilled liquor to the tests for diluted hydrochloric acid. It will seldom be found there, however, because it is apt to be retained by the coexistence of organic matter. If it be not found, add to the thin extract in the retort a slight excess of a strong solution of tannin, filter, and distil the filtered liquid by means of a hot bath of solution of hydrochlorate of lime (consisting of two parts of crystallized salt and one of water), taking care that the temperature of the bath never exceeds 240°, and stop the distillation just before the residuum becomes dry. Examine now the distilled liquor with the tests for diluted hydrochloric acid."

IV. *Oxalic Acid.*

§ 540. 1st. *Symptoms.*—Oxalic acid is one of the most rapid and certain of ordinary poisons. Its intensely sour taste generally prevents its administration with homicidal intentions, but is not always an obstacle to its being taken accidentally or for the purpose of suicide. Most of the accidents resulting from it have been occasioned by its being mistaken for Epsom salts.

It is worthy of remark, according to Casper, that although this substance is extensively used in Prussia in cotton manufactures, cases of poisoning by it are extremely rare. In Berlin no instance of the sort has come to the knowledge of this experienced toxicologist.(*c*)

§ 541. After the hot and sour taste in the mouth, vomiting is usually the first symptom, and is attended with burning pain and constriction in the throat and stomach, although it does not always occur, and in some cases the pain is absent. The vomited matters are dark-colored, and contain blood and sometimes membranous shreds. When the pain is severe, symptoms of collapse come on rapidly, the extremities are benumbed and drawn up, the surface is cold, and the pulse irregular or imperceptible. A degree of stupor or drowsiness is sometimes observed. The urgency of the symptoms depends upon the degree of dilution in which the salt is taken. In a case quoted by Dr. Christison, no vomiting occurred for seven hours, except when emetics were administered. The person had taken half an ounce dissolved in ten parts of water, and diluted immediately afterwards with copious draughts of water. In another case, a man swallowed an ounce, and immediately drank warm water; he was not seen until fourteen hours after he had taken the poison, and in the meantime had travelled a distance of ten miles.(*d*)

(*c*) Gerichtliche Med. i. 404.

(*d*) Lancet, Sept. 1845, p. 293.

§ 542. 2d. The *rapidity with which a fatal result ensues*, varies a great deal. In some cases the action of the poison is extremely rapid. Mr. Iliff reports a case in which death appears to have been immediate. The wife of a chemist drank a saturated solution of oxalic acid in her husband's shop, she was found dead by the side of the counter, where she had probably fallen and died without a struggle.(*a*)

Dr. Christison quotes a case in which a young man survived hardly *ten minutes;* another, in which a woman, who swallowed two ounces, died in *twenty minutes;* and Dr. Taylor refers to a case where death ensued in *three minutes.* The quantity taken in the last case could not be ascertained. Pereira also mentions a case which he examined, in which a man died in twenty minutes after swallowing oxalic acid in mistake for Epsom salts. Although death usually occurs within a few hours, cases are mentioned in which it was postponed for several days. Dr. Jackson reports one in which the poison did not prove fatal until the tenth day;(*b*) and in a case described by Dr. Frazer, death occurred from its secondary effects upon the twenty-third day. Some instances of recovery are reported. An interesting one was observed by Dr. Didama, in which a woman dissolved two large tablespoonfuls of oxalic acid in mistake for Epsom salts, in a small quantity of water, and took it on an empty stomach. Some twenty minutes afterwards she vomited, at first the solution she had taken, and then a dark-colored, bloody-looking fluid, in which were numerous white membranous patches. Ipecacuanha and afterwards prepared chalk were administered to her, and in about an hour she was found quiet and nearly free from the intense burning pain in her stomach and throat. She subsequently vomited again, and discharged from her bowels a large amount of matter resembling that she had vomited. She soon recovered entirely, and returned to her work. A similar case, in which an ounce was taken, and the patient recovered in eighteen days, is reported in the Lancet;(*c*) and a few others are referred to by Dr. Taylor.

§ 543. 3d. The only manner in which the *quantity capable of destroying life* can be approximately ascertained, is by reference to such cases as have proved fatal in the absence of medical assistance. The smallest quantity which has proved fatal under these circumstances is stated by most writers at half an ounce. It, however, by no means follows that a smaller quantity might not be attended with a fatal result, since some persons appear to have been far more seriously affected than others by equal amounts of this poison. This is proved by the case of a lad, sixteen years of age, who eat about a drachm of dry oxalic acid, and died in eight hours.(*d*)

The *binoxalate of potash*, or salt of sorrel, produces the same symptoms as oxalic acid, and destroys life as readily. An instance is reported by Chevallier, in which death took place in *ten minutes.*(*e*) In another case, a third dose of a drachm and a half proved fatal in an hour.(*f*)

§ 544. 4th. *Post-mortem appearances.*—It is stated that death may ensue from oxalic acid, and yet no traces of its action on the alimentary canal be

(*a*) Lancet, Oct. 1845.
(*b*) Bost. Med. and Surg. Journ. vol. xxx. p. 17.
(*c*) July, 1846, p. 39.
(*d*) Lancet, Dec. 1855, p. 521.
(*e*) Ann. d'Hyg. 1850, vol. i.
(*f*) Ibid. 1842.

observable on dissection; this occurred in a case where an ounce had been taken.(*g*) This is certainly not the ordinary result. According to Dr. Geoghegan, who examined the stomachs of three persons poisoned with this acid, the mucous membrane of the stomach was softened, with various shades of brown discoloration, and erosion or gelatinization; there was a brownish-black ramiform vascularity of the submucous tissue, and the contents of the stomach were of the color of coffee-grounds, owing to the action of the acid upon the mucus and coloring matter of the blood. In Dr. Jackson's case small ulcerations and thickening of the mucous membrane were observed, together with permanent redness. Hence the action of the acid may be chiefly expended upon the mucous coat of the stomach, no actual corrosion being observed. In an instance reported by Mr. Letheby, the coats of the stomach were so softened that it could scarcely be handled without lacerating it, and in another, referred to by Dr. Christison, it is said that this organ was perforated.(*h*) In some of these cases, however, it is evident that the conditions spoken of may have resulted from the long contact of the acid with the coats of the stomach after death, since even so feeble an acid as that naturally contained in the stomach is capable of producing similar results. It is certainly not the ordinary effect of oxalic acid. The œsophagus is also in many cases found altered, having a scalded or boiled appearance. It is pale, brittle, corrugated, and abraded in some places.

More recently a case has been reported by Dr. A. Wood, in which the stomach presented a large irregular aperture. As sufficient details of the dissection are not given, and the viscera do not appear to have been examined *in situ*, it is possible that this hole may have been artificially produced. The autopsy was made thirty-five hours after death.(*i*)

§ 545. 5th. *Chemical examination.*—The crystals of oxalic acid resemble, at first sight, those of sulphate of magnesia (Epsom salts), and the former substance has hence often been taken in mistake for the latter. They are permanent, flattened, transparent, four-sided prisms, soluble in water and alcohol. They are also entirely volatilized by heat, which is not the case with sulphate of magnesia. The usual tests for oxalic acid are *lime-water* and the soluble salts of lime, and *nitrate of silver*. With lime-water, or even with a solution of the sulphate of lime, a white precipitate is obtained, nearly insoluble in an excess of oxalic acid, or in acetic acid, but readily dissolved by nitric acid. With nitrate of silver a copious white precipitate of oxalate of silver is obtained, soluble in nitric acid or in ammonia. If the precipitate be dried, and heated on the point of a knife over the flame of a spirit-lamp, it becomes brown on the edge, detonates feebly, and is entirely dissipated in a white vapor. In this manner it is distinguished from other white salts of silver, which give off white fumes, but leave a residue.

§ 546. In *liquids containing organic matter*, as in matters vomited or in the contents of the stomach, the preliminary steps of diluting, filtering, and concentrating are required. If the liquid have an acid reaction, the acetate of

(*g*) Lond. Med. Repos. vol. iii. p. 380.
(*h*) Med. Gaz. vol. xxxv. p. 49; Lond. Med. Repos. vol. xi. p. 20.
(*i*) Edinburgh Monthly Journal, March, 1852.

lead should be added till the precipitate is no longer formed, for the purpose of separating the oxalic acid. If the resulting oxalate of lead be now diffused through distilled water, and a current of sulphuretted hydrogen be passed through the liquid for some time, a sulphuret of lead will be formed, and the acid remain in solution. It can then be examined by the tests already mentioned. If, however, antidotes have been administered, such as chalk or magnesia, the supernatant liquid, after standing some time, may, if not acid, be thrown away, and the inorganic residue, after being suspended in distilled water, be mixed with a twentieth part of carbonate of potash, and boiled for two hours. Thus oxalate of potash will be formed, which should be filtered and then neutralized with diluted nitric acid. Add the solution of acetate of lead as long as any precipitate falls. Separate the oxalic acid by means of sulphuretted hydrogen passed through the mixture of oxalate of lead, and test its presence as before. If the acid have not been entirely neutralized by the antidotes administered, the supernatant liquid and the insoluble residue must be separately examined.(*j*)

§ 547. The tests for *binoxalate of potash* in solution are the same as for oxalic acid. The crystals differ from those of oxalic acid in having a feathery appearance. They may be distinguished, also, by the action of heat, not being entirely dissipated like those of oxalic acid, but leaving an ash of carbonate of potash. Both the quadroxalate and the binoxalate of potassa are kept in the shops under the names of salt of sorrel and essential salt of lemons, and are employed for removing iron mould and ink stains from linen.

V. *Tartaric Acid.*

§ 548. The only case in which this substance incontestably proved poisonous is related in the *Lancet*, Jan. 2, 1845. A man took, by mistake for Epsom salts, an ounce of tartaric acid dissolved in half a pint of warm water. He immediately exclaimed that he was poisoned, and complained of a violent burning pain in his throat and stomach. Obstinate vomiting continued for nine days, when he died. Nearly the whole of the alimentary canal was found highly inflamed. Tartaric acid was detected in the dregs of the cup, and the druggist admitted that he had made a mistake. Another case is reported by Devergie, but the accuracy of his opinion and analysis is contested by Orfila. Christison mentions an instance in which six drachms of tartaric acid were taken in twenty-four hours, without the least inconvenience, and both he and Coindet administered it to cats without observing any injurious effect. An instance is on record in which the *bitartrate of potash* proved fatal by excessive purging, but the quantity swallowed, or rather *eaten*, is said to have been more than a quarter of a pound.(*k*)

VI. *Acetic Acid.*

§ 549. This acid in a concentrated form is highly irritant and corrosive.

(*j*) For some remarks on the facility of detecting oxalic acid by means of the *microscope*, see report of a lecture on the Application of the Microscope to Toxicology, by Geo. W. Birkett, M. D., Med. Times and Gazette, April, 1855.

(*k*) Lond. Med. Gaz. 1837-38, i. 177.

Only one fatal case of poisoning by it is reported. The liquid was swallowed by a young girl, and in a few hours afterwards she died in great agony. The post-mortem appearances resembled somewhat those produced by sulphuric acid, the surface of the tongue being brown and leathery, the mucous membrane of the œsophagus of a blackish brown color, and large black elevations marked the lining membrane of the stomach, the rest of the organs appearing inflamed. Eight ounces of a thick, blackish fluid were found in the stomach. In case of an investigation to detect this acid in the contents of the stomach, it must be remembered, that it is contained in the natural secretions of this organ, hence to be of any value, the chemical evidence must detect a considerable quantity of it. Also, as Christison suggests, vinegar is a common remedy with the vulgar for many diseases, and especially for poisoning.

§ 550. *Vinegar.*—Dr. David, of Montreal, met with an instance in which a woman endeavored to destroy herself by drinking a quantity of common vinegar. When seen three hours afterwards, her countenance was wild and the pupils dilated, the body was covered with a cold perspiration, and the breathing was laborious and hurried. Her tongue was dry and cold, the abdomen distended, and she had acute pain in the epigastrium, which was increased by pressure. She was, moreover, delirious. She soon recovered after the administration of an emetic of sulphate of zinc.(*l*)

CHAPTER III.

IRRITANT POISONS(*m*)—ALKALINE.

I. *Potash, Soda, &c.*

§ 551. These two alkalies may be treated of together since their poisonous effects are similar. Our notice of them will be brief, as they seldom occasion poisoning, and when they do, it is almost necessarily accidental and its cause is readily known. They may prove fatal either by their immediate action or by their remote influence upon the system. When swallowed in large quantity and in a concentrated solution, the taste is exceeding nauseous and acrid, and a sensation of burning heat and constriction in the throat, œsophagus, and stomach is excited. When a considerable portion of the

(*l*) Amer. Journ. Med. Sci. Oct. 1848, p. 302.

(*m*) Nearly all of the substances belonging to this class produce very different effects when they operate for a long time in minute quantities, and when they are taken in large doses at once. It is only in the latter case that the term irritant is strictly applicable to them. In the former mode of action they gradually undermine the health and may ultimately destroy life by interfering with the nutrition of the body. This effect may result either from their deleterious action upon the digestive organs, or upon the composition of the blood, or finally upon an impairment of that action of the tissues by which they appropriate for their own nutrition the organic elements contained in the blood. Arsenic and most of the salts of mercury are actively irritant when applied to the tissues in a concentrated form; but in minute quantities, and largely diluted, they slowly but surely sap the foundations of life, by wearing away old structures and preventing the substitution of sound materials for their repair.

solution has reached the stomach, there is great pain and tenderness in the abdomen, vomiting of mucus and altered blood, inability to swallow, copious diarrhœa, and general collapse. If the patient survive a few days, the inside of the mouth is seen to be greatly inflamed, sloughs become detached from the throat, vomiting continues, there is a dysenteric condition of the bowels, and the patient dies from marasmus.

Life may be, however, prolonged even for months and years, and the person finally die from the impairment of his digestive powers or from a stricture of the œsophagus which prevents the swallowing of food in sufficient quantity to sustain life. A case is related by Dr. Barham, in which a caustic solution of impure carbonate of soda (soap lees) was swallowed by mistake, and the patient died two years and three months afterwards of stricture of the œsophagus caused by it.(*n*) Several other instances of a similar kind are recorded, and Sir Charles Bell relates one in which death did not take place until twenty years after the accident. A more recent example is one furnished by Dr. Deutsch.(*o*) The quantity drunk was a "portion of a glass," and was estimated to contain half an ounce of caustic potassa. The early symptoms were such as those described above, but recovery from them took place. Gradually, however, swallowing became difficult, and death took place in twenty-eight weeks after the accident. The lower part of the œsophagus was found enormously thickened, so that its canal was nearly obliterated near the stomach. The increased thickness was entirely confined to the mucous membrane, the muscular coat, on the other hand, having nearly disappeared.

II. *Nitrate of Potassa.*

"A German, who spoke English imperfectly, went into a store, and asked for 'bitter salt,' meaning sulphate of magnesia (*bitter Salz*). The attendant supposed he meant saltpetre, and gave him half-a-pound. The man took three ounces and a half at one dose. His bowels were opened three times within three or four hours. He complained of a slight sense of heat in the epigastrium, and drank a good deal of water. About five hours after having taken the saltpetre, he suddenly fell out of his chair and died.

"The marked peculiarity, in this case, was the absence of the painful symptoms which usually follow the ingestion of irritant poisons; and the question arises, how was death produced? Certainly not by inflammation of the stomach, for he complained of nothing but a slight sense of heat in the stomach. The poison must have acted by destroying the vitality of the blood. There was no *post-mortem* examination. The rigor mortis was very imperfect, the lips of almost a natural pink hue, and the appearance of the countenance so life-like, that some persons who were present doubted the propriety of interment on the third day."(*p*)

This is the largest dose of nitre which we find recorded as having been taken, and its symptoms were, on that account probably, peculiar. There are

(*n*) Lancet, 1850, vol. ii. (*o*) Times and Gaz., May, 1858, p. 537.
(*p*) New Jersey Medical Reporter, Jan. 1855.

numerous instances of death occasioned by an ounce or an ounce and a half of this salt, and in which the symptoms were those of a violent local irritant and a depressor, at the same time, of nervous power. Death may occur within two hours. On the other hand, recovery has taken place after doses of nitre varying from half an ounce to two ounces. The symptoms are vomiting, with extreme burning pain in the throat and abdomen, followed by coldness and collapse, and subsequently by bloody stools. In one case bloody vomiting is noted(*a*). Nervous symptoms, such as tremor, spasm, and hallucinations, have been observed. Recovery is slow, and the digestive function remains feeble or deranged.

§ 552. 1st. *Post-mortem appearances.*—The mucous membrane of the stomach will, in recent cases, be found more or less acted upon by the salt. Thus it may be seen in some parts inflamed, and in others covered with brown sloughs of partially detached membrane. Perforation has even been observed. In chronic cases, the smooth and condensed structure peculiar to the cicatrization of mucous membranes will be easily recognized.

§ 553. 2d. *Chemical examination.*—Potash and its salts may be known by giving an orange-yellow precipitate with *bichloride of platinum;* tartaric acid also gives a white, crystalline precipitate, appearing sooner or later according to the degree of concentration of the liquid. In this way they may be distinguished from soda, which, on account of its generally forming soluble compounds with acids, has no very satisfactory test except that of communicating an intense yellow color to the outer flame of the blowpipe. The crystals of nitrate of soda are rhombic, those of nitrate of potash are long, fluted prisms. Caustic potash and soda form a brown precipitate with a solution of nitrate of silver. These alkalies also give an unctuous feel to organic substances with which they are mixed.

III. *Ammonia and Sesquicarbonate of Ammonia.*

§ 554. This alkali has occasionally been used with homicidal purpose, but, in general, cases of poisoning by it are the result of accident. The vapor of strong ammonia has destroyed life, when respired too long a time by a person in a state of temporary insensibility. The effects produced by swallowing a strong solution of ammonia are somewhat similar, though more intense, than those of the other alkalies. Plenck relates that a man who had been bitten by a mad dog had administered to him a glassful of ammonia. His lips, tongue, and gums turned black immediately, and he died within four minutes.(*b*) In another case, strong ammonia was taken with suicidal intent. The symptoms were collapse, serous and bloody diarrhœa, and bloody vomiting, excruciating pain in the abdomen, and death in six hours. The mind remained clear till the last.(*c*) Two cases are reported in the same paragraph of children who were killed by accidentally swallowing a mixture of hartshorn and sweet oil.(*d*) A little boy, two years of age, took about half an ounce of very pungent spirits of hartshorn from a bottle. He immediately screamed

(*a*) Journ. f. Pharmakodynamik, ii. 178. (*b*) Mitscherlich, Lehrbuch, ii. 277.
(*c*) Annales de Thérapeut. iii. 443. (*d*) Times and Gaz. June, 1855, p. 353.

and was very sick, bringing up at first stringy mucus of a light color, and then some more which was dark. The lips were swollen, the breathing was harsh, hurried, and somewhat obstructed, and afterwards became somewhat croupy. There was no insensibility nor any diarrhœa. He recovered.(*e*) In another case, reported in the same journal, an ounce was taken in milk, by a man who supposed it to be castor oil, having poured it out in the dark. He took immediately copious draughts of warm water, and vomited a quantity of matter like soapsuds. The inside of the mouth, upper lip, tongue and fauces were white, and other parts excoriated; there was great difficulty in swallowing. He said he felt as if he was on fire from his stomach to his mouth; his voice was husky, pulse small and frequent, and the surface cold. He was ordered dilute acetic acid and demulcent remedies, under which he soon recovered. There was no diarrhœa throughout the case.(*f*) A woman took a wineglassful of strong liquor of ammonia by mistake for the acetate, yet in a fortnight she was convalescent.(*g*) Dr. W. Reed has reported the case of a man who swallowed by mistake three drachms of the strong solution of ammonia, and as much of the sesquicarbonate dissolved in two ounces of oil. The symptoms resembled those above described, but they subsided and were removed under appropriate treatment, in about eight days.(*h*)

Chevallier relates an instance of an attempt to poison with ammonia. The mistress of an officer, he being desirous of breaking up the connection, at their last proposed interview attempted to make him swallow a quantity of ammonia. A physician was sent for immediately. He found the lips excoriated, with phlyctenæ, and the tongue swollen and deprived of its epithelium, and the mouth and palate abraded. The throat was so sore as to prevent swallowing, and pressure on this and the region of the œsophagus was very painful.(*i*)

§ 555. 1st. *Post-mortem appearances.*—In a case related by Nysten, where a man died from the inhalation of the vapor while insensible, the nostrils were blocked up with an albuminous membrane. The whole mucous coat of the air-passages was mottled with patches of lymph. There was a black eschar on the tongue, and another on the lower lip. In general, the liquid form of this poison produces marks of violent inflammation, sometimes of the pseudo-membranous form, in the fauces and œsophagus, redness, softening, or ulceration of the gastric mucous membrane, and to some extent of the small intestine. The blood is generally liquid.

§ 556. 2d. *Chemical examination.*—Ammonia gives with bichloride of platinum, and with tartaric acid, the same reactions as potassa; the precipitates have also a similar composition. Ammonia is recognized with ease and certainty, even in the presence of all the other bases, by its being set free in a gaseous state by the action of the caustic alkalies, or of the alkaline earths, upon its compounds. For this purpose it is best to use *hydrate of lime.* Ammonia in the state of gas is distinguished by its peculiar smell, and by the white clouds which are formed when a glass rod, moistened with hydrochloric acid,

(*e*) Iliff. Lancet, 1850, vol. i. 337, Am. ed. (*f*) Ibid. 1852, i. p. 374.
(*g*) Wilkins, Lancet, 1846, i. 385. (*h*) Times and Gaz. July, 1855, p. 59.
(*i*) Am. Journ. Med. Sci. April, 1854, from Gaz. des Hôpitaux.

is brought near the liquid to be examined. This appearance is owing to the formation of chloride of ammonium.(*r*)

IV. *Baryta.*

§ 557. The only two preparations of baryta which have proved fatal are the chloride and the carbonate.

1st. *Chloride of Barium.*—A student of medicine took three teaspoonfuls of this salt in mistake for sulphate of magnesia. He was seized with tormina and vomiting, his extremities became cold, pulse irregular and feeble, and his hands and feet paralyzed. He recovered gradually in three days.(*s*) Two other cases are referred to by Dr. Taylor, in which it proved fatal.(*t*) A healthy young woman took less than a teaspoonful of chloride of barium, mistaking it for Epsom salts. In half an hour she had burning pains in the stomach and bowels, with vomiting and purging, followed by the symptoms of collapse above described, and a scarcely perceptible pulse, and these by great impairment of muscular power, labored respiration with bronchial effusion, coma, convulsions, and death, nineteen hours after the poison had been taken. Sensibility did not seem to be impaired.(*tt*) This salt seems to have a decided action in some cases upon the brain, producing vertigo, headache, deafness, and convulsions.

§ 558. 2d. *Carbonate of Baryta.*—This salt is also said to have destroyed life in two cases.(*u*) In a case observed by Dr. Wilson, of London, the quantity taken was half a teacupful, but emetics were given and operated before any symptoms showed themselves. In two hours the patient complained of dimness of sight, double vision, headache, tinnitus, and cramps, with occasional vomiting and purging the next day. Recovery, however, took place.

§ 559. 3d. *Post-mortem appearances.*—In one of the cases of poisoning by chloride of barium before referred to, the stomach presented a uniform red appearance, with clots of blood and bloody mucus scattered over it; near the cardiac end was a perforation about half an inch in diameter within, and half as wide outside, the edges swollen, and the mucous coat thickened. The small intestines also exhibited signs of inflammation. Without doubt, as is remarked by Dr. Christison, the perforation was, in this instance, an accidental occurrence, not due to the chloride of barium.

§ 560. 4th. *Tests.*—Baryta is thrown down completely in the form of sulphate from all its salts, as well those soluble in water as those in acids, either by free sulphuric acid, or by any of the soluble sulphates. Most of the baryta salts impart a yellowish-green color to the flame of alcohol. The acids in combination may be determined by their appropriate tests; hydrochloric by the nitrate of silver, nitric by sulphate of potash, and acetic by the odor disengaged on the addition of dilute sulphuric acid. In order to separate the chloride of barium from an *organic* liquid, Dr. Christison says that the most

(*r*) Will's Chem. Analysis.
(*s*) Am. Journ. Med. Sci. Jan. 1852. From *Casper's Wochenscrift.*
(*t*) Taylor on Poisons. (*tt*) J. Walsh, Lancet, Feb. 1859, p. 211.
(*u*) Parke's Chemical Essays, ii. 219.

convenient method is to dissolve any carbonate of baryta that may have been formed, by a little nitric acid, to filter, throw down all in the form of sulphate by the sulphate of soda, and then calcine the precipitate with charcoal. A sulphuret of baryta will then be procured, which is to be dissolved out by boiling water, and decomposed after filtration by muriatic acid. A pure solution, he says, is thus easily obtained. The chloride of barium, which is the salt most frequently taken, is soluble in water, and has an acrid, irritating taste.

CHAPTER IV.

IRRITANT POISONS—METALLOIDAL.

I. Phosphorus.

§ 561. This poisonous substance deserves more attention than is usually given to it, for quite a large number of cases of poisoning by it have occurred; its use for the preparation of friction-matches(*uu*) and for the destruction of vermin being everywhere common, and its detection by chemical means sometimes attended with difficulty. In Germany it has been frequently given with homicidal intentions, and everywhere accidents are liable to arise from its employment for the purposes mentioned. MM. Chevallier and Poirier give the whole number of deaths by phosphorus from 1854 to 1858, as 59. Criminal poisoning, 31; suicide, 18; accident, 10.

§ 562. 1st. *Symptoms.*—These arise suddenly, but in most cases not until some time after the poison has been swallowed. Thus in two fatal cases given below, they did not appear until seven and twelve hours afterwards. They commence, as is usual with this class of poisons, with a burning heat in the stomach and painful retching. There is great restlessness, thirst, anxiety, and distress, with small, irregular pulse, cool extremities, convulsions, and hippocratic countenance. In males priapism has been observed. The vomited matters have the odor of phosphorus, which is like that of garlic, and this odor may also be perceived upon the breath. The mode of death is sometimes quiet, with or without consciousness, but sometimes life terminates in convulsions.

2d. The *quantity* required to destroy life is very small. A young man died on the 12th day from the effects of a grain and a half.(*v*) Martin-Solon relates the case of a patient who died in two days from less than a grain in the form of emulsion.(*w*) An apothecary named Doffenbach, in experimenting upon the effects of this substance, took one grain, the next day two, and the following day three grains; three days after the last dose he was seized with violent vomiting, and died on the seventh day.(*x*) A child two years and

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(*uu*) For the diseases which the manufacture of these articles occasions, see Beaugrand, Ann. d'Hygiène, Avr. 1860, p. 349.

(*v*) Worbe, Med.-Chir. Zeit. 1826. Bd. 4, p. 183. (*w*) Christison, p. 151

(*x*) Froriep. Notiz. Nr. 493.

a half old, died after swallowing the phosphorus on eight friction matches.(*y*) A child two months old is said to have died from the effects of two such matches.(*yy*) If of the average quality, they would contain about $\frac{1}{125}$th grain of phosphorus.

A seller of matches, aged 22, half an idiot, and accused of theft, was so much affected by the charge that he determined to poison himself. From want of other means he took about two thousand matches, placed them in a pot filled with water, and boiled them. He swallowed this extraordinary decoction. In about twelve hours he was seized with vomiting, and brought up bilious and greenish matters, containing portions of the matches. When seen two hours later, his countenance was much altered, his body cold, and the pulse small and slow. The vomiting continued, and there was violent abdominal pain. The day after, the abdomen was swollen and fatal fainting fits occurred.(*z*) The matches used were of two kinds, one united with chlorate of potash, and the other with nitre and the peroxides of lead and manganese. It is probable that, in boiling, the phosphorus was converted into phosphoric acid at the expense of the chlorate or the nitre. A very analogous case is reported by Nitsche, of Vienna. A soldier swallowed the ends of six packets of phosphorus matches. Within three hours there was vomiting followed by fever and headache. In the epigastrium there was slight tenderness and pain, which subsequently increased. The urine was albuminous, the bowels confined, and a profuse sweat exhaled the odor of phosphorus. The face, which at first was congested and red, except in the median line, which was pale, became cyanosed; the sight was lost, the pupils widely dilated and unaffected by light; the hearing was also lost; the extremities were cool and the second sound of the heart inaudible. At the end of the fourth day death took place tranquilly and without any previous loss of consciousness.(*zz*) Another case, from its degree of resemblance to the last two, deserves to be referred to in this place. A girl, twenty-two years old, took a portion of phosphorus scraped off from a small packet of lucifer matches. Sharp pain in the abdomen was followed by vomiting of matters luminous in the dark, and subsequently containing blood. On the third day the pupils were widely dilated and but feebly sensible to light; on the fourth or fifth day there was drowsiness and impaired consciousness, followed by convulsions. Death occurred on the sixth day.(*a*) In another case a drunkard took half a cupful of phosphorus-paste, part of it being spread upon bread. Between seven and eight hours after this fatal breakfast, he had violent thirst, and a feeling of heat in the throat and stomach, which were soon followed by violent pain and continual vomiting. He died on the third day in horrible agony.(*aa*)

A singular case occurred at Berlin, in April, 1859. A healthy child eight months old, was left for half an hour in charge of a servant girl twelve years

(*y*) Schmidt's Jahrbücher, 1844. No. 6, Bd. xlii.
(*yy*) Husemann, Journ. f. Pharm. ii. 169.
(*z*) Am. Journ. Med. Sci. Jan. 1854, from Gaz. des Hôpitaux.
(*zz*) Zeitschrift der k. k. Gesellschaft der Aertze zu Wien, and Am. Journ. of Med. Sci. Jan. 1858, p. 290.
(*a*) Lewinsky, Brit. and For. Med.-Chir. Rev. Oct. 1859, p. 529.
(*aa*) Canstatt, Jahresbericht für 1851, Bd. iv. p. 264.

of age. It appeared that the ends of two friction matches were given by the latter to the infant, in order to quiet it. This not succeeding, the servant burnt one or more matches near the child's face, in order, as she averred, to amuse it with the flame. On the return of the parents the child was dead. Traces of corrosion were found in the stomach, but no phosphorus could be detected chemically. The more immediate cause of death was concluded to be congestion of the brain and lungs, or asphyxia, occasioned by the vapors of phosphorus cutting off the supply of atmospheric air.(*b*)

§ 563. 3d. *Post-mortem appearances.*—In the case of the drunkard mentioned above, the mucous membrane of the stomach was of a crimson color, softened in many places, and easily detached; near the pylorus was an ulceration of the size of a quarter dollar, with brown everted edges, and the muscular coat under it bare. Another similar ulceration was found in the greater curvature. The whole of the small intestine exhibited signs of violent inflammation, but the large intestine was free from it, except in the rectum. In the case quoted before this, the mucous coat of the stomach and duodenum was so softened that the handle of a knife, passed behind it, readily detached it in a dissolved condition. Similar conditions have been found in other cases.(*bb*) These morbid alterations, therefore, resemble those of gastro-enteritis, arising from other causes. The agency of phosphorus in producing such changes must be ascertained not only from the history of the case, but also from its detection by the senses, and by chemical examination. Krahmer states that phosphorus after absorption, so affects the blood as to produce ecchymoses under the mucous membranes, skin, &c.(*c*) It should, however, be borne in mind, that fatal poisoning by phosphorus may take place without the stomach, or indeed any of the organs, displaying the slightest lesion. This is shown in Nitsche's case, in which the dose of the poison was very large, in that quoted by Huseman,(*cc*) in Lewinsky's case,(*d*) and others.

One of the most common alterations, and perhaps the most important of them, is a remarkable fluidity of the blood. Nitsche, Lewinsky, Krahmer, and Huseman, describe it. Of this point, Casper remarks, that we must admit phosphorus to be sometimes fatal by destroying the vitality of the blood. In the cases reported by him, the blood-disks had become transparent by the loss of their coloring matter which was diffused through the incoagulated plasma, giving it the appearance of a cherry-red fluid of syrupy consistence. Such changes prove the blood to be deprived of vital and nutritive qualities.

The contents of the stomach or the matters vomited, may give a white inflammable vapor, and be luminous in the dark. This was observed in Lewinsky's case, referred to above. They may also exhale a phosphoric odor. Flachsland reported a case in which the dejections obtained by enemata were luminous in the dark, and pieces of phosphorus were found in them.(*dd*) It

(*b*) Bünau, Casper's Vierteljahrs. xvi. 305.

(*bb*) In two cases, one of which was American, they were present in various degrees from light to dark injection, and thence to grayish and gangrenous ulceration. See Boston Med. and Surg. Journ. Nov. 1855, p. 323; and Nov. 1858, p. 343.

(*c*) Handbuch, 2te Aufl. p. 462.

(*cc*) Journ. f. Pharm. ii. 169.

(*d*) Brit. and For. Med.-Chir. Rev. Oct. 1859, p. 529.

(*dd*) Med.-Chir. Zeit. 1826, iv. p. 183.

is said that the intestines, and even the flesh of animals poisoned by phosphorus, have the odor of garlic, and appear luminous in the dark. In a woman who died while taking phosphorus medicinally, it was remarked that the whole of the viscera of the body were luminous; thus indicating the extensive diffusion of the poison.(*e*) Brera observed also, in opening the body of a woman to whom he had administered phosphorus both by the mouth and rectum, that a white vapor, having an alliaceous odor, and taking fire at the approach of a flame, arose from the stomach.(*ee*) In the report of a case by Dr. Bingley, in 1857, it is said, "on opening the stomach there was an escape of white smoke, accompanied by a strong smell of garlic."(*f*) Similar vapors, luminous in the dark, have been seen issuing from the rectum and even from the vagina.(*ff*) Another case is interesting from the fact that, although the body had been buried *fourteen* days, phosphorus was discovered by means of its physical properties, in the stomach.(*g*) On the *tenth* day after it had been taken Mayer detected it in the contents of the intestine.

§ 564. 4th. *Chemical examination.*— The appearance of phosphorus is familiar to every one. It is insoluble in water, but soluble in ether, alcohol, and the oils. It melts at 110°, and takes fire at a temperature a little above this. Sometimes it may be separated mechanically from the contents of the stomach, or from this organ itself. In a case of homicidal poisoning of a young actress in Berlin, the stomach was empty, there was no unusual smell, and only a few suspicious yellowish spots in the stomach, but no inflammation. In consequence of suspicions of the cause of death being aroused by the fact of the husband of the deceased having shortly before purchased phosphorus paste (under a special permit), the stomach was submitted to a chemical examination. Cut into pieces, and warmed in a dark place over a spirit-lamp, several shining points were observed in it, and afterwards, by directing a fine stream upon pieces of the stomach, removing fatty matters by boiling, and afterwards quickly cooling, the phosphorus was obtained in a globule of the size of the head of a pin.(*gg*)

In another case of attempted poisoning, a woman prepared some soup for her husband. After he had taken a few spoonfuls, he was seized with pain in the stomach. In the evening his wife again pressed him to eat some more of it, but his suspicions were awakened, when, on taking it out of the warm and dark oven in which it had been put away, he observed that it was luminous. The bowl was therefore sent to the magistrate. On uncovering it, white vapors, with a penetrating odor, proceeded from it. When the contents were poured out on an evaporating dish, a transparent, shining globule, was observed at the bottom, and afterwards several more, which, when rubbed between the fingers, became luminous, and gave off white vapors. On boiling the soup over a spirit-lamp, bubbles rose to the surface, which inflamed spontaneously.(*h*)

(*e*) Taylor on Poisons, p. 244.
(*ee*) Riflissioni Med. Pract. sul'uso interno del fosforo, &c. Pavia, 1778, p. 8.
(*f*) Lancet, June, 1857, p. 600. (*ff*) Casper, Gericht. Med. i. 401 and 442.
(*g*) Schäffer, quoted in Henke, Zeitschrift, 1851. E. H. 43, p. 215.
(*gg*) Schacht, Casper's Vierteljahrs. 1852. April.
(*h*) Henke's Zeitschrift, E. H. Bd. xxvi. S. 173.

The detection of phosphorus is, however, seldom so easy. Being mostly taken finely divided in the form of paste, and being not always rapidly fatal, it may have been either removed by vomiting, or exist in too small quantity to be recognized with certainty. Nevertheless, as we have before stated, it has been detected in the body fourteen days after death. In another case, it was found ten days after death.(*hh*) And it is probable that in competent hands it may always be recognized, if really present.

§ 565. Various processes have been recommended for the detection of phosphorus in *organic mixtures*. The simplest plan is to evaporate partly the organic mass, and then place portions of it upon a heated iron plate. The phosphorus will then take fire, and burn with a yellow light and white smoke. If the quantity of phosphorus be very minute, this trial will still detect it, since, according to Orfila, it is applicable, even when the phosphorus forms but one-thousandth part of the mixture. Schacht recommends its separation by sulphuric ether; the details of this process will be found appended to the case above reported by him. The usual mode is to convert the phosphorus into phosphoric acid, by boiling in nitric acid. After evaporating to dryness over a water-bath, and slight dilution of the residue with water, a solution of nitrate of silver will produce in it, if previously neutralized with ammonia, a yellow precipitate. Another portion may be converted into hydrated phosphoric acid, by heating the residue, after evaporation, to redness. This, when cooled, may be dissolved in a little water, and will give, after being previously neutralized with ammonia, a white precipitate with the nitrate of silver. Care must be taken not to regard as an evidence of poisoning, the presence of phosphoric acid and of phosphates, which may have been derived from the food, or produced by certain diseases.

This process is not sufficiently precise in its results to be employed in criminal investigations, for the question is not whether phosphorous acid or phosphoric acid existed in the stomach, but whether this organ contained phosphorus itself. The former belong to the natural constituents of the body, the latter does not.

The most certain mode of discovering phosphorus in organic mixtures, such as the stomach usually contains, is that employed by Mitscherlich.(*i*) The suspected liquid is contained in a flask with sulphuric acid and water, and on being heated, its vapors rise through a small glass tube, at first vertically, then horizontally, and finally downwards. The descending limb of the tube is enveloped to a certain height with a cold water bath, penetrating which it passes into a closed vessel below. As the vapors, in coming over, reach the cool portion of the tube, they are condensed, and become luminous in the dark. By this method, five ounces of a substance containing only one-fortieth of a grain of phosphorus, afforded three ounces of distillate in the course of half an hour, during all of which time the luminous zone was visible.

Chronic poisoning by phosphorus is a disease engendered by this substance in persons who are employed in its manufacture. Its principal organic lesions are caries and necrosis of the bones, with abscesses of the soft parts, added to

(*hh*) Vid. Henke, loc. cit.

(*i*) Casper's Vierteljahrs. viii. 6.

which the digestion becomes impaired, and, after prolonged vomiting and diarrhœa, life is destroyed by hectic.(*ii*)

II. *Bromine.*

§ 566. From the constant use of *Bromine* in daguerreotyping, accidents may readily arise from it. It is a dark-red liquid, of a strong and unpleasant odor, and acid taste. Its vapors, which are given off at ordinary temperatures, are exceedingly injurious both to the eyes and to the lungs. According to Mr. Wurtz, it is highly destructive to organic matter. He placed a human stomach, with its contents, in a porcelain dish, covered it with water, and poured upon it an ounce of bromine. By the aid of a gentle heat, and occasional stirring with a glass rod, the stomach had entirely disappeared in *less than half an hour.*(*j*) Its corrosive properties have been heretofore observed only in animals.

The only case on record of fatal poisoning by bromine in man, has been reported by Dr. Sayre, of New York. A. H., aged twenty-four, of good health, and temperate habits, a daguerreotypist by profession, residing in Williamsburgh, near New York, swallowed one ounce, by weight, of bromine, for the purpose of destroying himself. The immediate symptoms, as reported by his medical attendants, were spasmodic action of the muscles of the pharynx and larynx, and great difficulty of respiration. This was soon followed by intense burning heat in the stomach, with great anxiety, restlessness, and trembling of the hands. The pulse was rapid, tense, and corded, and the respiration greatly hurried. The stomach was entirely empty at the time of taking the bromine. Various means were used, unsuccessfully, for his relief, the symptoms above described increased in intensity; the hands and feet became cold, with failure of the pulse, &c., until 2 P. M., when he died, *seven and a half hours* after taking the poison.

The post-mortem examination was made seventeen hours after death. On opening the abdomen, the external surface of the stomach was found vividly injected, as was also the peritoneal coat of the duodenum, and of the mesentery. A portion of the latter nearest the stomach was stained of a deep yellow color, as were also other parts lying immediately beneath the stomach. A softened ecchymosed spot, an inch and a half in diameter, and several others of a smaller size were also found upon the peritoneal coat of the stomach. The stomach contained about four ounces of thick fluid, resembling port-wine dregs, and exhaling faintly the odor of bromine. Its whole internal surface was covered with a thick black layer, resembling coarse tanned leather. The mucous membrane was very thin, and there was intense submucous injection.(*k*)

Bromine may be separated from *organic mixtures* by agitation with ether,

(*ii*) Accounts of this affection have been given by various authors, among whom may be mentioned Tardieu, Times and Gaz. Oct. 1856, p. 352, and Leudet, Arch. Gén. de Méd. Avr. 1857, p. 308.

(*j*) Silliman's Journal, N. S., vol. vi. p. 405.

(*k*) New York Journ. Med. Nov. 1850.

which dissolves it. If a bromide has been formed, a few drops of a solution of chlorine should be added, to set the bromine free.

III. *Iodine.*

§ 567. 1st. *Symptoms.*—This substance is capable of acting in a deleterious manner upon the system, under two circumstances, viz., by the long-continued use of small doses, or by the administration at once of a large quantity. The symptoms occasioned by its too prolonged use are incessant vomiting and purging, pain in the abdomen, heat and dryness of the throat, headache, rapid emaciation, violent cramps, and a general febrile condition. A patient of Zink, a Swiss physician, after taking too large doses of iodine for about a month, became restless, had burning heat of skin, tremors, palpitation, very frequent pulse, violent priapism, copious diarrhœa, excessive thirst, emaciation, and occasional syncope. He died, after an illness of six weeks. Salivation is also an occasional result of the prolonged use of iodine. A case is related in which one drachm of the tincture of iodine, in about an ounce of spirit, is said to have proved fatal.(*kk*) Very often, however, large doses of this substance are productive of no evil effects, nor are unpleasant results generally experienced from its prolonged administration. Dr. Christison quotes a case, in which a child, three years old, took three drachms of the tincture, and suffered only from thirst and slight vomiting. Dr. Kennedy, of Glasgow, gave to a girl 953 grains of iodine, in the form of tincture, during eighty days, without any effects upon the health; and Mr. Delisser gave thirty grains a day to a patient, without any injury resulting.

§ 568. 2d. *Post-mortem appearances.*—In the case related by Zink, redness of the intestines, in some places approaching to gangrenous discoloration, was the chief morbid alteration observed.

§ 569. 3d. *Chemical tests.*—Iodine is usually met with in the form of soft micaceous scales of a grayish black color, metallic lustre, acrid hot taste, and disagreeable odor. It is sparingly soluble in water, but is readily dissolved by alcohol or ether. The best test for it in a free state is starch, as a very minute proportion of this substance will give a blue color to a solution of iodine. This blue color is destroyed by heat; hence in testing, the liquids employed should be cold. If iodine is combined with a base, it must be first set free by nitric or sulphuric acid. It may be detected in the blood and secretions of a patient under its use.

4th. *Iodide of potassium,* although milder in its effects, is otherwise similar to iodine in its operation upon the system, and is usually preferred as a medicinal agent.

IV. *Chlorine.*

§ 570. Orfila has shown, by experiments upon animals, that a saturated solution of chlorine in water produces effects similar to those of the mineral acids. No instances of its poisonous effects upon the human subject are recorded.

(*kk*) Prov. Journ. June, 1847, p. 356.

CHAPTER V.

IRRITANT POISONS—METALLIC.

I. *Metallic Arsenic.*

§ 571. Metallic arsenic is known under the name of mineral cobalt, fly poison, and fly stone. It has a bluish-gray fracture and a metallic lustre, and, by exposure to the air, becomes gradually black, and loses its lustre. It is easily pulverized, and has neither taste nor smell. Exposed to heat, it gives out an alliaceous odor, and in the atmospheric air its vapors are changed into the white vapor of arsenious acid. It is readily oxydized by mineral and vegetable acids; it thus acquires poisonous properties. Accidental death is not uncommon from its use. A case is mentioned (*Bost. Med. and Surg. Journ.* vol. xxx. p. 17) in which a child, two years of age, died in consequence of taking it by mistake.

A highly interesting case of homicidal poisoning with it has been reported by Dr. Schütte.(*l*) It is, we believe, with one exception, the only one on record.(*m*) The wife of a barber, named Dombrowsky, was suddenly attacked on the morning of the 11th of April with violent vomiting and purging, with pain and heat in the epigastrium, and excessive thirst. A physician was called to visit her in the evening, but being ignorant of the cause of the attack, prescribed simple remedies. She had no fever, her pulse was slow and soft, and the abdomen was not tender upon pressure. The vomiting, and especially the purging, still continued; and although they afterwards abated, her strength sank rapidly, and she died on the sixth day. On the third day after death, an examination of the body was made. There was not found any natural cause of death. But on opening the stomach, it was observed to have no putrefactive smell; it was red in streaks, and the mucous membrane was softened. There were also several hemorrhagic erosions, especially in the neighborhood of the cardiac orifice. Some small black particles having a metallic lustre, were seen upon it. These were carefully detached washed with distilled water in a porcelain capsule, and then reduced on charcoal by means of the blowpipe. They gave out the well-known garlicky odor. The same odor was perceived when some were put in a reduction tube and exposed to heat, and both an arsenical crust and the small white octahedral crystals of arsenious acid, were obtained. Evidence of the presence of arsenic was also obtained by the usual liquid tests. By Marsh's apparatus, arsenic was detected in the fluids contained in the stomach, and the amount obtained from this, and from the subsequent analysis of the stomach itself, was computed at nineteen grains. Additional circumstantial evidence which fixed the crime

(*l*) Casper's Vierteljahrschrift, Oct. 1854.
(*m*) Briand, Méd. Lég. 452.

upon the husband, was derived from the examination of a few particles of a shining black powder found in the extreme end of his pocket, and also from the analysis of the dried spilled contents of a cup of sago, which, intending to give to the deceased, he had placed in the stove to warm, but which had been cracked by the heat. It was also proved conclusively that he had himself purchased, at several times, portions of arsenic and of cobalt, which were found in the house. This fact, it may be remarked, was clearly brought home to him by the commendable provision of the Prussian code, which requires that a person purchasing poison shall give a receipt therefor to the apothecary, containing his name, address, the date, and also the alleged purpose for which it is required. These receipts were produced upon the trial. The prisoner was convicted chiefly upon this and the admirable and minute chemical investigation, and sentenced to be beheaded.

II. *Arsenious Acid.* (*Arsenic; White Arsenic.*)

§ 572. The poison which is generally known under the name of arsenic, or white arsenic, is an oxide of the metal, and has a slight acid reaction, whence it is called arsenious acid. It is met with in one of two forms, either as a white, vitreous, crystalline substance, or as a white opaque and granular powder. It is sparingly soluble in cold water (about one in fifty parts), but is more freely dissolved by boiling water, which takes up the acid in about the proportion of one of the acid to ten or twelve of water.(*n*) Dr. Taylor found, by numerous experiments, that a fluidounce of hot water took up, in cooling from the boiling point, nearly one grain and a quarter of white arsenic, but that if boiled for an hour on the poison, and allowed to cool, the water held dissolved about twelve grains to the ounce. In some experiments made by Schroff upon the solubility of arsenious acid, he found that one part of the acid in 480 of water, the liquid being frequently shaken, was not fully dissolved in fourteen days. He boiled one part of arsenic with 100 of water, and found that complete solution took place after fifteen minutes' boiling.(*o*) It is even less soluble in liquids containing organic matter. The different statements with regard to its solubility possibly depend upon the difference in this respect between the crystalline and the opaque powder. Its *taste* is not, as was formerly represented, acid, but, on the contrary, is, when at all perceptible, rather sweetish. It is sometimes described as bitter, unusually rough, &c. As a general rule, it may be stated that it is without taste, except when in solution, when the taste perceived may be faint and sweetish. The sparing solubility of this substance is the cause of its want of taste, and also explains the fact why, in the majority of cases of poisoning by it, it is found in larger or smaller quantity in the matters vomited, or adhering to the mucous coat of the stomach. Its solubility is increased by the presence of an alkali or an alkaline carbonate.

§ 573. 1st. *Symptoms.*—The symptoms occasioned by poisoning with arsenic do not always manifest themselves immediately upon its ingestion, and this is

(*n*) Will's Analysis. (*o*) Canstatt's Jahresbericht for 1853, Bd. v. p. 52.

particularly the case when the poison has been introduced into some article of food or drink, and taken at a meal. Still, they may occur immediately. A child, three years old, drank from a saucer some arsenious acid mixed with milk. It was seized *immediately* with pain, vomiting, and diarrhœa.(*p*) In the case referred to by Dr. Taylor, the symptoms were proved to have attacked the deceased while he was in the act of eating the cake in which the poison was administered. In the case of Sager, tried in the State of Maine, in 1834, quoted by Beck,(*pp*) extreme distress was *immediately* experienced after taking the poison.

§ 574. Generally the symptoms are not perceived until a later period, which is usually stated at from half an hour to an hour after the poison has been swallowed. On the other hand, they have been, in some cases of poisoning with arsenic, delayed in an unaccountable manner. In a case related by Dr. Ryan, where half an ounce of arsenic was taken in porter, the first symptom, which was vomiting, did not occur until nine hours afterwards. Mr. Clegg was called to see a girl who had taken a teaspoonful of arsenic, but who was supposed also to be addicted to the use of opium. Seven hours after she had taken it she appeared stupid, as if intoxicated, but no further symptoms of irritation occurred until near noon of the following day, when, although she had been cheerful all the morning, and was engaged in preparing dinner, she was suddenly seized with excruciating pain in the stomach, and died in half an hour, about twenty-four hours after taking the poison.(*q*)

§ 575. Authentic instances are on record in which there has been also an intermission in the regular progress of the symptoms. Thus, in the case of the girl Davidson, reported by Dr. Maclagan, the vomiting diminished on the fourth day, was trifling on the fifth, was absent on the sixth, but returned, accompanied by purging, on the night of the seventh. It is stated that there could not have been a repetition of the dose. So also in the case of McVey, by the same author, the man was taken ill with the symptoms of irritant poisoning about half an hour after eating an oat "bannock." Although he appeared to be very ill in the mean time, he was not again seized with vomiting until the morning of the fourth day, and died three days thereafter. "It did not appear that anything had been given him which would have contained a fresh dose of the poison."(*r*) Dr. Christison says: "A short remission, or even a total intermission, of all the distressing symptoms has been witnessed, particularly when death is retarded to the close of the second or third day. This remission, which is accompanied with dozing stupor, is most generally observed about the beginning of the second day. It is merely temporary, the symptoms speedily returning with equal or increased violence."

§ 576. The symptoms usually begin with a sensation of sickness, and a burning heat in the stomach. There is also a sense of constriction and heat

(*p*) Henke's Zeitschrift, E. H. 43, p. 150. (*pp*) Vol. ii. p. 546.

(*q*) Lancet, vol. ix. p. 31. A case is also related by Belloc, in which *ten hours* elapsed after the taking of the poison before any symptoms showed themselves; the vomiting was then slight, as also the pain in the abdomen, and no mention is made of the occurrence of diarrhœa. She died as from the effects of a narcotic poison. Cours de Méd. Lég. p. 122.

(*r*) Edinb. Month. Journ. Jan. 1853.

in the throat, with great thirst, and violent efforts at vomiting soon take place. The substances vomited have no peculiar color, as this depends both upon the matters that happen to be present in the stomach, the antidotes administered, and the length of time the vomiting continues. When the stomach is empty, mucus streaked with blood, and yellow or greenish bile will communicate a color to the contents of the basin. If powdered arsenic have been swallowed, it may sometimes be recognized in the ejected matters by its white and flaky appearance. The irritation of the poison being communicated to the lower bowels, diarrhœa usually supervenes, and is frequently thin and bloody and attended with much straining and distress, and cramps in the calves of the legs. When the latter symptoms are urgent, they are usually attended with an inability to pass the urine. These symptoms all increase in gravity till near the close of life. The general system also sympathizes with the disturbance of the digestive organs; the countenance is collapsed and anxious, the extremities and the surface generally ice-cold, the pulse almost imperceptible, the respiration accelerated, the voice oppressed, and convulsions, delirium and stupor not unfrequently usher in the closing scene. Such is a picture of the ordinary train of symptoms in a case of poisoning by arsenic.

§ 577. It should be understood, however, that they are liable to many variations, and authentic cases are related in which the symptoms resembled, to a certain extent, those of narcotic poisoning. The system appears in such cases to be completely overpowered by the toxical effects of this substance, and the most extreme faintness or depression is the most prominent symptom. The pain in the abdomen and the vomiting are occasionally not urgent, except towards the close of life. These variations, when occurring in persons addicted to the use of opium or of ardent spirits, may be partially accounted for, but often they must remain unexplained.(*s*)

§ 578. When, however, instead of one dose sufficient to destroy life, or several doses at short intervals capable of producing this effect, the poison is given in small portions at comparatively distant intervals, the symptoms are not so marked in their succession and are attended with phenomena different from those already described. The following may serve as an example: "A woman put daily into the soup of her fellow servant a very small quantity of arsenious acid in powder. Shortly after dinner, this person was seized with vomiting, which led to the rejection of the food and poison before the latter had caused any serious mischief. As this practice was continued for about six weeks, the stomach grew exceedingly irritable; there was pain in the bowels, and the woman became much emaciated. There was also spitting of blood, with such a degree of nervous irritability, that a current of air caused an attack of spasms and convulsions. When the patient found that she could not bear anything on her stomach, she left the place and passed two months in the

(*s*) For cases illustrating these points, *vide* Christison on Poisons. Also, an interesting case by Dr. Ogston (Med. Gaz. 1851). In this there was headache, stupor, feeble pulse, cold extremities, nausea, and tonic and clonic spasms. Vomiting did not occur until several emetic doses of sulphate of zinc had been given, and then only two hours and forty minutes after the arsenic, amounting to three drachms, had been swallowed. The poison was discovered in the blood, liver, and contents of the stomach, the patient having lived six days.

country. Her health became gradually restored there, and she returned to resume her usual occupations. The prisoner, however, renewed her attempts; and to make sure of destroying her victim, gave her one morning, in coffee, a strong dose of arsenious acid in powder; violent vomiting ensued, and the poison was expelled with the breakfast. Arsenic was detected in the vomited matter, and the explanation of the cause of the long previous illness became clear. Under proper treatment, the patient recovered."(*t*) Christison relates a case somewhat similar, which, however, was not so protracted, and which terminated fatally.(*u*) It was by this means, probably, that the crime of secret poisoning was carried in the seventeenth century to such a fearful extent. The miserable woman who vended the liquid, called after her, *Aqua Tofana*, confessed at her death that she had destroyed by it no less than six hundred persons. It is generally supposed that its active ingredient was arsenious acid.

§ 579. Those who have partially recovered from the immediate effects of arsenical poisoning, are, moreover, liable to the secondary effects, above referred to: salivation, chronic intestinal disorder, palsy, dropsy, and an irritative fever soon prostrate the vital powers, and the fatal termination, although sometimes slowly attained, is, in the majority of cases, none the less certain. The period at which death supervenes cannot be definitely stated with reference either to these cases or to those of acute poisoning. In the latter it usually takes place within twenty-four hours, it may be postponed for several weeks or months. The average period in twenty-two cases reported by Dr. Geoghegan, was seventy-seven hours and a half, the shortest was five and a half hours.(*v*) Cases are however known, in which death has taken place within two hours.(*w*)

§ 580. Arsenic is equally noxious when *inhaled* in the form of vapor, or applied *externally* to a denuded surface, or upon the mucous membrane of the *vagina* or *rectum*.(*x*) Its effects are extremely rapid when it is inhaled, but when it is absorbed from a wounded surface the symptoms usually do not occur so soon as when it is swallowed. Being an ingredient in most of the pastes used by cancer-curers in the extirpation of scirrhous breasts, it is by this means not unfrequently introduced into the system, and has produced death with all the symptoms of arsenical poisoning. Even the small proportion of arsenic which is contained in the stearine of some candles, has, when the latter has been used for the purpose of dressing a blistered surface, produced nausea, pain in the stomach, thirst, redness of the tongue, spasms of the muscles, weakness and irregularity of the pulse, and death within twenty-four hours.(*y*)

Several cases are quoted by Christison from Fodéré and others, where

(*t*) Taylor on Poisons, from Flandin, p. 257. (*u*) Loc. cit. p. 250, Am. ed.

(*v*) Dublin Quarterly Journ. Feb. 1851.

(*w*) The following case will be found in the Lancet, Oct. 1845, by Mr. Iliff: "E. D——, the servant in a family, after placing the dinner on the table, retired to her chamber, and drank a glass of water, in which she had mingled as much arsenic as it would dissolve: *she fell directly and died instantly;* no struggling whatever took place. I saw these two cases (referring to another published at the same time), almost immediately after the poison was taken."

(*x*) Vid. Christison on Poisons.

(*y*) Med. Gaz. 1842–43, p. 351.

arsenic given by injection into the rectum proved fatal, and introduced into the vagina caused death in less than twenty-four hours. It is said, moreover, to have produced violent symptoms when applied to the unbroken skin, as when used as a depilatory.

§ 581. A case of death from the external application of arsenic to the head of a child two years of age, affected with porrigo favosa, is related by Dr. McCready, of New York. A woman obtained about half an ounce of arsenic, and mixing it with gin, rubbed it well into the heads of several of her children affected with this disease. It was followed by redness and swelling of the face; in the child alluded to, however, it produced diarrhœa and tenesmus, with paralysis of the lower extremities, but no signs of local inflammation. The mother stated that she had on one previous occasion applied the arsenic, and though the application was followed by some swelling, this soon subsided, and the head seemed much better.(*z*) Dr. Mitchell, of Liverpool, relates a case in which characteristic constitutional symptoms, as well as severe local inflammation, were produced by applying a mixture of arsenic and soft soap to the pubes and axilla for the purpose of destroying pediculæ.(*zz*)

§ 582. 2d. *Post-mortem appearances.*—The only reliable and tolerably constant changes produced by arsenic in the healthy appearance of the viscera, are found in the stomach and intestines. The mucous membrane of the stomach is usually of a uniform deep brownish-red color, sometimes it is ecchymosed in patches, and at others there are spots or streaks of effused blood. These often have the appearance of crusts, and being of a blackish color, are not unfrequently mistaken for gangrenous patches, and the slight depression under them for ulceration. But neither ulceration nor gangrene is an ordinary result of simple arsenical poisoning; if found, these are probably merely concomitant lesions, dependent upon other causes.(*a*) Perforation is exceedingly rare. Orfila says that he has never observed it.(*b*) The mucous membrane is also frequently swelled and thickened, possessing in some parts a fungoid appearance, and its structure is more frequently condensed than softened, owing possibly to a chemical union between the arsenic and the albumen. The powder, if the poison have been taken in this form, is often found imbedded between the folds of the mucous membrane, and closely adherent to it in brilliant points, or in white and flaky patches. The matters contained in the stomach are evidently too variable in character to be enumerated, since the ingestion of different liquids, and of the many so-called antidotes which have been given in most cases, naturally destroys the possibility of drawing any useful inference.

§ 583. *The period of time* requisite to develop the inflammatory condition of the stomach is altogether a matter of conjecture, since the mucous coat of the stomach has been found inflamed when death has followed the poisoning

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(*z*) Am. Journ. Med. Sci. July, 1851, p. 259.

(*zz*) Lancet, Aug. 1857, p. 127.

(*a*) In the Lancet for Sept. 1843, it is reported that the body of a man poisoned by arsenic was disinterred 141 days after death. The stomach and intestines were in perfect preservation. About the middle of the small intestine was found a small ulcerated opening, through which some of the white powder was detected, similar to what was found in the stomach, and which proved to be arsenic.

(*b*) Méd. Lég. vol. iii. 330.

at only the short interval of two or three hours; and, on the other hand, where the quantity swallowed and the duration of life have been such as to lead to the natural belief that inflammation would be discovered, the stomach has been found nearly or entirely free of any such morbid change. Indeed, in a few cases the arsenic has been observed in immediate contact with the gastric mucous membrane, without any signs of inflammation. Nevertheless, as a general rule, the inflammatory appearances will be found developed in proportion to the protraction of the case. In a case reported by Dr. Letheby, the stomach was of a pale color. Ettmüller reports the case of a girl in whose stomach arsenic was found, and yet neither in it nor in the intestines was there a trace of inflammation.(*c*) Orfila, in his work upon legal medicine, says: "The existence or non-existence of cadaveric lesions, the extent and seat of these alterations, can never enable us to affirm that poisoning has taken place, but can only serve to corroborate the conclusions drawn from the symptoms and the chemical examination of the suspected matters." These remarks are confirmed by observations of Marc and Chaussier.(*d*) The inflammatory appearances seldom extend further than the duodenum, although sometimes the small intestine and the rectum exhibit evidence of inflammation. In general, there are no other post-mortem changes at all characteristic of this mode of death. The blood is said to be often syrupy in consistence.

§ 584. The introduction of arsenic into the system by external application is usually followed by the same alterations in the stomach and intestines as when it has been brought into direct contact with the mucous membrane of these viscera.

§ 585. 3d. The *quantity* of arsenic capable of destroying life in an adult is not precisely determined, but Dr. Taylor states, from the evidence of some cases which came under his observation, that there is good reason to believe that between three and four grains have proved fatal, and that "we are certainly warranted in asserting that a dose of three grains is very likely to prove fatal to an adult." Dr. Letheby has reported a case in which two and a half grains proved fatal to a robust girl. More recently a case occurred in which two grains killed a woman.(*e*) Christison quotes the case of a child who died in six hours after swallowing *four grains and a half* in solution.

But it is well known that smaller doses than these will produce alarming symptoms; and although no cases of death from a smaller quantity are recorded, it remains a question whether, without the intervention of medical aid, some of them might not have terminated fatally.

§ 586. It is evident that when large doses in the form of powder, or merely diffused through water, are taken, the poison, from its insoluble nature, is not readily absorbed; it is, therefore, probable from this fact, and from the circumstance that as, even in fatal cases, a great deal of the arsenic is vomited, or is found after death in the stomach, the poisonous dose may be really trifling in amount, life being destroyed by that portion only which has been absorbed. In medicinal doses, the solution of the oxide of arsenic produces sometimes

(*c*) Encyclopæd. der gesammt. Med. von Schmidt, 1848, Arsenik-Vergiftung, S. 166.
(*d*) Orfila, Méd. Lég. vol. iii. p. 329; also Toxicologie, vol. i. p. 316.
(*e*) Pereira, Mat. Med. vol. i. p. 633.

serious symptoms, and cannot be increased without at once causing symptoms of poisoning. The medicinal dose is from one-sixteenth to one-twelfth of a grain, and half a grain is sufficient to produce very alarming symptoms. Physicians are accustomed to watch the accession of conjunctivitis, swelling of the face, gastrodynia, and general depression, as indications of the dose being too great or too frequently repeated.

§ 587. 4th. The facts relative to the effect of *arsenic upon the putrefactive process* are of a very contradictory character. A number of cases are quoted by Dr. Christison, which appear to prove a remarkable antiseptic property in arsenic, by which not only the digestive organs, but the whole body, has been preserved from the ordinary changes of putrefaction. There is no doubt of the preservative quality of an arsenical solution over organic textures placed and kept in it, and the experiments made by Klenck upon dogs seem to show that in cases of poisoning, also, this property may be witnessed. This physician poisoned dogs with arsenic, and left them for two months, sometimes buried in a damp cellar, sometimes unburied in the same place, and the flesh and alimentary canal were red and fresh, as if pickled, at the end of this time. Dr. Kelch, of Königsberg, buried the internal organs of a man who had died of arsenic, and whose body had remained without burial till the external parts had begun to decay, and on examining the stomach and intestines five months after, he found that the hamper in which they were contained was very rotten, but that they had a peculiar smell, quite different from that of putrid bowels, were not yet acted on by putrefaction, but as fresh as when first taken from the body, and might have served for the purpose of anatomical specimens. The body of Chapman, supposed to have been poisoned by Mina, was disinterred two months after death. The face was livid and putrid, but the odor of the corpse was not offensive. The abdomen was of a pale white color, and Dr. Hopkinson, on cutting into it, was struck with its firmness and resistance. When the stomach was opened, a very peculiar smell was perceived, which he compares to that of pickled herring. The same remark was made by other medical witnesses.(*f*) The intestines were entirely empty, of a pale color, and apparently rather disposed to dry than to putrefy. In a case communicated by Dr. Traill to Dr. Christison, the body of a captain of a vessel was disinterred five months after death. The face and neck were swollen, black, and decayed, but the rest of the body was quite free from the usual signs of putrefaction. The skin was white and firm, the muscles fresh, the lungs crepitating, the liver and spleen much shrivelled, the stomach and intestines entire throughout their whole tissues, and capable of being handled freely without injury. In this instance the coffin contained water, owing to its having lain in a sandy soil resting on clay. The remarkable preservation of the body of a woman supposed to have been poisoned by arsenic, for nearly *fourteen* years after her death, led to its disinterment, the indictment and trial of her husband. Arsenic was found in the body.(*g*)

(*f*) In two cases of poisoning by arsenic, observed by Dr. Sanborn, of New Hampshire, the same peculiar odor was distinctly observed. Bost. Med. and Surg. Journ. vol. xxxvii.

(*g*) Webster, Bost. Med. and Surg. Journ. vol. xxxix. p. 489.

§ 588. On the other hand, Dr. Geoghegan has observed examples both of very tardy and of very rapid decomposition in cases of arsenical poisoning.(*h*) It would not be difficult also to find many cases in which, although death has resulted from other causes, the body has been as remarkably preserved as in those where arsenic was the cause of it. We have elsewhere enumerated the various causes which will retard putrefaction, as the dryness of the soil, and the depth at which the body has been interred, as well as individual peculiarities, which do not always admit of explanation. We may quote here an observation which will show, that even under the most favorable circumstances for decomposition, this process may proceed very slowly. This is a case communicated by Dr. Routier, of Amiens, to Orfila, in which an old woman was destroyed by a blow upon the head with an axe. This was in the middle of summer. The body lay buried in the clayey soil of a cellar between eight and nine months. At the end of this time, a judicial inquest was held. The skin was perfect, the muscles firm, red and distinct, the cerebrum was like that of a fresh corpse, and possessed its natural firmness and proper odor. The viscera of the chest and abdomen were perfectly well preserved; and in the stomach, which presented no sign of inflammation or other disease, a thick fluid was found in which the remains of articles of food were distinctly recognized.(*i*) The fact of the remarkable preservation of the brain in this case, is also of some importance, for it is well known that usually it putrefies rapidly, and because also in a case lately reported by M. Dieu, where the body of a man poisoned by *arsenic* was disinterred after the lapse of two years and a half, the comparative integrity of the brain wes attributed to the preservative powers of this substance.(*j*)

§ 589. Hence the medical witness cannot be authorized to assert that, because the body has resisted more or less completely the progress of putrefaction, this preservation is due to arsenic, since it may be really attributable to other causes. One cause of the discrepancy in the observations upon this point, undoubtedly lies in the variable time occupied by the poison in producing its fatal effect, and the nature of some of the symptoms. It is reasonable to suppose, and observation also has shown, that if death have resulted from the ingestion of the poison at repeated intervals, in small doses, or not until several days have elapsed, that the arsenic has become disseminated through the system, and may thus exercise a more complete antiseptic influence in the dead body. If, again, the person has died within a short period after taking the poison, and after abundant and repeated vomiting and purging, we may be right in anticipating, that although the violent action of the poison has been the cause of death, little or none will have remained in the body. Hence, in the latter case, putrefaction will probably pursue its ordinary course. Thus, in a case examined by Dr. Geoghegan, of a person who died sixteen days after taking a large dose of arsenic by mistake, no trace of the poison could be found in any part of the body.(*jj*)

(*h*) Dub. Quart. Journ. Feb. 1851.
(*i*) Orfila, Traité de Méd. Lég. 4ème ed. vol. ii. p. 93.
(*j*) Ann. d'Hyg. Jan. 1854.
(*jj*) Med. Times & Gaz., April, 1857, p. 389.

§ 590. 5th. *Arsenic found in the body.*—It is fortunate for the ends of justice, that arsenic may be discovered either in the stomach, or extracted from the viscera, at a long period after death. It was found by MM. Ozanam and Idt, after the long interval of seven years. In a still more recent case, it was discovered after ten years. A man named Eichel fell sick on the 15th of February, 1842, after eating his supper, and died on the evening of the 17th. Ten years and four months afterwards, in consequence of some testimony respecting the mode of his death, the body was disinterred, and a chemical analysis instituted. The body was reduced nearly to the bones, although the brown and curly hair was still present. The bones were covered with a greasy, gluey substance, on which were numerous pasty spots of a yellowish-white color. The body gave out no smell. The ligaments no longer held the bones together, and the ribs and clavicles had fallen in. A dark greasy mass indicated the remains of the viscera, and in the abdominal organs as much as *ten* grains of arsenic were detected by chemical examination. The wife of the deceased was condemned to death at Magdeburg, in 1853.(*k*) Dr. Webster, of Boston, succeeded in finding four grains of arsenic by chemical analysis, in the body of a woman alleged to have been poisoned by this substance *fourteen* years previously. The case was tried in Boston, in 1848, the husband of the deceased being the accused party.(*l*)

§ 591. When arsenic in substance has been taken, it does not always remain in the condition of the white oxide, but frequently becomes converted, by the sulphuretted hydrogen developed during decomposition, into the sesquisulphuret, which is of a yellow color. It may undergo this change in a short time after death. Dr. Taylor has found it as early as twenty-eight days after death. In the language of Dr. Christison, "it is the effect of a chemical test applied to the poison by nature."

§ 592. 6th. *Chemical examination.*—Arsenious acid in its chemical relations, must be considered, 1st, as a solid, 2d, in solution, 3d, mixed with organic matter.

(1.) *As a solid.*—It is entirely volatilized by heat. Thrown upon ignited charcoal, it gives off an alliaceous odor, which is due to the reduction of arsenious acid to the sub-oxide, the arsenious acid having in itself no odor when heated; the smell of garlic is only perceived when it is deoxidized. This odor, although striking, is not a positive proof of the presence of arsenic, as a similar one may be given off by several other substances. If, however, we heat arsenious acid with dry acetate of potash, oxide of kakodyl is disengaged, by the peculiar insupportable smell of which compound, even very minute traces of arsenious acid may be detected. This experiment may be conveniently performed by rubbing the substances together in a little mortar,

(*k*) Casper, Vierteljahrsch. 1854, No. 2. The case in detail is found in Bley's Archiv. für Pharmacie (II. Bd. lxxv. Hft. 2, Hanover, 1853). See also the same Journal (April, 1855) for an interesting report of a case in which a woman was accused of poisoning her father, brother, and sister, and in which arsenic was found in the remains of the three murdered persons after a lapse of eight weeks, and *seven* and *eight* years respectively. Hardly anything but the bones remained in the two last mentioned. The accused made a full confession some time after her sentence.

(*l*) Boston Med. and Surg. Journ. vol. xxxix. p. 489.

and then heating them together in a test-tube, allowing the vapor, which is excessively poisonous, to be carried away by a current of air.

§ 593. Heated in a narrow test-tube, or in the reduction-tube of Berzelius, with some freshly ignited (cold) charcoal, the same phenomena of deoxidation and evolution of odor occur as when it is placed on red-hot cinders in the open air; but in this case metallic arsenic is condensed by sublimation upon a cool portion of the tube, in the form of a metallic crust or ring, of an iron-gray color, brilliant and lustrous upon the outer surface, and crystalline upon the inner when seen under a low magnifying power. There are usually two crusts deposited, an upper and a lower, the latter of metallic arsenic, and the other of a browner color, which is a mixture of the metal and its oxide.

§ 594. The arsenical nature of the ring may be further proved by volatilizing it by heat, in an open tube, by means of the flame of a spirit lamp; it is thus converted into arsenious acid which sublimes upon the tube in the form of octahedral crystals, which may be dissolved in distilled water, and subjected to the liquid tests; or by dissolving them by means of nitric acid, and evaporating the solution to dryness, *arsenic* acid is formed, which is known by its giving a brownish-red precipitate, with nitrate of silver. When the quantity of arsenic is considerable, it is better to use a flux composed of the residue left by tartrate and acetate of soda, after incineration in a covered platina crucible, as recommended by Dr. Taylor. The volatilization of the crust may be accomplished either by applying heat directly to it, and chasing it up and down in the tube until it is all oxidized, or by carefully filing off that part of the tube in which it is contained, powdering it, and then introducing it into the end of another tube, which should in turn be subjected to heat.

The metallic crust of arsenic may, moreover, be distinguished from the discoloration produced by *charcoal*, by the absence, in the dark stain of the latter, of any metallic appearance; the inner surface of the charcoal discoloration being powdery, black, and dull. The possibility of error should however be guarded against, by the careful introduction of the charcoal into the tube through a funnel with a long stem.

§ 595. The sublimate obtained by the reduction of the *compounds of mercury*, as calomel or corrosive sublimate, has indeed a metallic appearance, but may be distinguished, without using the liquid tests, by an inspection with a common lens, or even with the eye: the minute globules of metallic mercury can thus be readily seen, and by the point of a knife be made to run together. The objections that have sometimes been made to the reduction process, on the grounds that *glass* contains arsenic or lead, are theoretical only. Glass does not contain arsenic, for although used in its manufacture, it is entirely volatilized by the heat required in the process, and when the glass does really contain lead (which ought not to be the case in suitable chemical implements), the mere loss of transparency caused thereby upon the application of heat, is evidently in the substance of the glass itself, and cannot, with the slightest attention, be mistaken for the arsenical crust.

§ 596. Moreover, the discoloration caused by the reduction of lead will be in the part of the tube to which the flame is applied. A crust weighing only a three-hundredth of a grain, a tenth of an inch broad, and four times as long,

may show characteristically all the physical characters of an arsenical sublimate a hundred times larger. It may therefore be safely laid down that the appearances exhibited by a well-formed arsenical crust contained in the minute quantity of the three-hundredth of a grain are imitated by no substance in nature which can be sublimed by the process for the reduction of arsenic.(*m*)

(2.) *In solution.*—The liquid tests for the detection of arsenic in solution are three in number. They are applied to clear solutions of arsenious acid free from organic matter, and are extremely useful in corroboration of the tests by which it is obtained in a metallic state; the arsenical deposit having been first converted into arsenious acid by sublimation in an open tube.

§ 597. (*a.*) *Hydrosulphuric acid.*—In the presence of free acid (hydrochloric), hydrosulphuric acid throws down the tersulphuret of arsenic, which is of a *lemon-yellow* color. This precipitate is soluble in ammonia. Dried, and heated with carbonate of soda in a reduction-tube, a metallic sublimate of arsenic may be obtained.

§ 598. (*b.*) *Ammonio-nitrate of silver.*—This test should be carefully prepared. (To a strong solution of nitrate of silver add a solution of ammonia, until the brown oxide of silver which is thrown down is nearly but not entirely redissolved. When properly prepared, there should be no free ammonia given off.) The *arsenite* of silver, which is precipitated by this reagent, is of a *lemon-yellow color.*

599. (*c.*) *Ammonio-sulphate of copper.*—(This test is prepared in the same manner as the foregoing. No more than is actually necessary for precipitation should be used, as its intense blue color is very apt to mask the proper color of the precipitate. If, however, this has occurred, filtration will separate the *green arsenite of copper* from the uncombined portion of the liquid.) The color of the precipitate is a *chrome green.* When dried, and heated in a test-tube, arsenious acid is disengaged, and sublimes on the sides of the tube in the characteristic crystals, leaving a residue of the oxide of copper. Their nature may further be proved by dissolving them in distilled water, and submitting them to any other of the tests which may be desired.

§ 600. The fallacies to which these tests are exposed are the following: Phosphoric acid gives a yellow precipitate with ammonio-nitrate of silver, exactly like arsenious acid; several organic acids cause a green precipitate with the copper test, and the soluble salts of cadmium yield, with sulphuretted hydrogen or hydrosulphuric acid, a yellow precipitate, similar in appearance to the sulphuret of arsenic. But doubts arising from these sources as to the true character of the precipitate may be corrected by a comparison of the tests and the production of a metallic or crystalline sublimate. Thus, phosphoric acid gives only a pale-blue precipitate with the copper test, and is not affected by sulphuretted hydrogen; and the pseudo-arsenical precipitate obtained by cadmium with sulphuretted hydrogen, or by organic acids with the copper test, when dried and heated in a reduction-tube, gives neither the metallic deposit, such as is obtained from the sulphuret of arsenic, nor the crystalline sublimate as obtained from the arsenite of copper.

(*m*) Christison.

It is obvious that other additional correctives may be employed by the use of Marsh's or Reinsch's process, but the above are sufficient when the proper precautions as to the purity of the materials used are observed in the beginning of the analysis.

§ 601. (3.) *Mixed with organic matter.*—It should be remembered that the liquid tests are not applicable directly to liquids containing *organic matter.* The same colors which have been mentioned as indicating with probability the presence of arsenic may be obtained in liquids used as articles of food, containing common salt or various colorless organic acids. Hence, unless the precipitate obtained can be made to yield arsenic by the other tests, there can be in an organic liquid no demonstration of its presence; the only method, therefore, free from objection, is to use the liquid tests in *aid* of the other processes of Marsh and Reinsch, or in liquids not contaminated by the various organic matters which may be present in the stomach, or remaining from the poisonous drink administered.

We have been favored, by Dr. Jackson, of Northumberland, with a reference to a case(*n*) in which chemical evidence of this kind would have procured the indictment of a faithful and exemplary wife for the murder of her husband by poisoning with arsenic, had it not been for his interposition; he showed not only that the man did not die with the symptoms of arsenical poisoning, but that the chemical investigation was both imperfect and fallacious.

The following is an extract from the minutes of one of the examiners: "The contents of the stomach—about sixteen ounces, and principally fluid—were thoroughly mixed by agitation and stirring, and successive portions submitted to the following tests: A small portion was put into a clean Florence flask, to which about four ounces of *common* water and a few grains of subcarbonate of potash were added; this was submitted to the heat of a spirit-lamp until boiling commenced. Portions of it were poured into two clean wine-glasses, to one of which a small quantity of sulphas cupri was added; this had the effect of changing the fluid, which had been of a light-hazel (owing to the color of the contents of the stomach) to a light-green color, resembling that of Scheele. The surface of the other glass a stick of lunar caustic was applied to; the effect was an immediate *white cloudy* appearance, which soon changed into a reddish-yellow or orange color, and, after standing a few hours, resolved itself into a reddish brown. * * * The next day, the remaining contents of the stomach having been dried, half an ounce of the suspected matter was boiled with snow-water in a flask until it rose to the top of the vessel; the fluid was suffered to cool, when a stream of sulphuretted hydrogen gas was passed through it; this immediately changed the solution to a beautiful light golden-colored liquid; after which a solution of arsenious acid was submitted to the same, and the result was precisely similar," &c. Such rough and imperfect processes as these authorized, in the opinion of the examiners, the statement that the chemical analysis "clearly indicated the presence of arsenic." They were equally unfortunate in their deductions from the state of the stomach, which, from the description, appears to have presented that

(*n*) Am. Journ. Med. Sci. Nov. 1829, p. 243.

appearance not unusual in an habitually intemperate person, as was the subject of the examination, but which they looked upon also as "clearly indicating that the patient had died in consequence of poison from arsenic."

§ 602. (*a*) *Marsh's process.*—This process for obtaining arsenic from simple or compound mixtures, by which it may be afterwards tried by any or all of the tests above mentioned, is exceedingly delicate. According to Dr. Christison, a solution containing only the millionth part of white oxide of arsenic, will part with it readily in the form of arseniuretted hydrogen, and the slightest trace of that gas in the hydrogen is indicated by this method. The process consists, essentially, in the disengagement of hydrogen gas by the action of sulphuric acid on zinc, in the presence of arsenious acid, the consequent evolution of arseniuretted hydrogen, and the deposition of metallic arsenic upon a porcelain plate held in the flame resulting from the combustion of the gas.

§ 603. The various modifications of the simple apparatus of Marsh require no particular description here. The simplest form consists of a wide-mouthed bottle with a closely fitting cork perforated for two tubes, of which, the one furnished with a funnel dips beneath the liquid, and the other, bent nearly at right angles but sloping slightly towards the bottle, descends but a short distance into the vessel. This tube is furnished with a cork for the reception of a detached horizontal tube of glass, free from lead, and drawn out at its extremity into a point with a small aperture. In this apparatus, hydrogen is generated by pure zinc and dilute sulphuric acid, and the action is continued until the atmospheric air is completely expelled, and all risk of an explosion is thereby avoided. The freedom from arsenic of the materials employed, should be ascertained by holding a porcelain plate against the lighted hydrogen gas—nothing but water will be deposited in case the gas is pure. When thus satisfied that the materials are pure, a portion of the suspected liquid may be poured into the funnelled tube, and the spirit lamp be immediately applied to the horizontal tube, in order to obtain a metallic ring or incrustation, which, if arsenious acid is present, will be deposited at the distance of about half an inch from the part to which the flame is applied. Having procured this, the gas, as it issues from the fine end of the tube, should be inflamed, and deposits obtained on porcelain or glass. The two processes may be continued until a metallic deposit is no longer obtained.

§ 604. (*b*) The *fallacies* to which Marsh's process may give rise, proceed from the contamination of the zinc or sulphuric acid with arsenic, the presence of antimony in the suspected liquid, or of imperfectly charred organic matter. The mode of guarding against the first has already been noticed. Antimoniuretted hydrogen burns with a pale, bluish green flame, and deposits upon a porcelain plate held in it, a black stain.

The antimonial is distinguished from the arsenical crust by the following characters:—

First, the dark stain is less bright and metallic than the arsenical one, and when viewed by transmitted light is smoky black, whereas that of arsenic is hair brown.

Secondly, if the flame be allowed to play on a solution of ammonio-nitrate

of silver, placed on the under surface of a plate of mica, no yellow arsenite of silver is obtained.

Thirdly, the greater volatility of arsenic and its conversion into octahedral crystals of arsenious acid, may serve, where the crust is in an open tube, to distinguish it from antimony. This may be best effected by a bath of olive oil; this liquid does not begin to boil until the heat rises above 600°. Arsenic is completely sublimed under 500°, and the process begins at a much lower temperature; but antimony is not at all affected by the heat required to boil olive oil. Hence, whether the stains of the two metals are mixed or not, their true nature can thus be readily ascertained. Dr. Maclagan says, that in his hands the process has proved "so simple and easy of execution, so delicate in the results obtained by it, so advantageous in excluding the necessity of any chemical reagent whatever," and "also in affording, when tubes of equal size are used, so easy a method of determining approximately the proportion of arsenic in different articles examined, that in operating on small quantities of material, or where little arsenic is present, I have of late always, in practice, adopted it in preference to any other."(*o*)

Fourthly, the comparative solubility of arsenious acid, and the reaction of the before mentioned liquid tests on the solution, will distinguish it from oxide of antimony, which is insoluble.

Fifthly, the metallic crust obtained by submitting a current of the gas to heat, presents some distinguishing characters; the arsenical crust is always deposited in the more distant or anterior part of the tube, whereas the antimonial one is first deposited on the *heated* part of the tube.(*p*)

Lastly, arsenical spots on porcelain may also be readily distinguished from those of antimony by the more rapid solution of the former in hypochlorite of soda. They are rapidly dissolved by it, and the porcelain becomes perfectly clean. If they are shining and thick, the process is somewhat longer, but does not occupy more than a few seconds. Antimonial spots, on the contrary, completely resist the action of the hypochlorite of soda, unless they are quite faint and of a dull appearance. Furthermore, if any fluid containing *both* arsenic and antimony be introduced into the apparatus, the spots on the porcelain at first contain principally only arsenic, apparently in consequence of the antimony being less volatile; but if shining spots be produced upon the porcelain, which contain more antimony, these resist, more or less, the action of the hypochlorite of soda, and are often eaten away only around the edges. While, therefore, by this reagent, a slight trace of antimony cannot be distinguished in spots of arsenical nature, arsenic, on the other hand, can by it be detected in antimonial stains.(*q*)

Of all these tests, we think the last is the most uniformly successful; the rapidity with which the metallic arsenic disappears under its action is astonishing, and offers a striking contrast to the absence of all effect in the case of antimony.

§ 605. The crusts resulting from the presence of imperfectly *charred organic*

(*o*) Month. Journ. Jan. 1853. (*p*) Pereira.
(*q*) Wackenroder, Chem. Gaz. Aug. 2, 1852. This test was in use by Bunsen in 1844.

matter in the suspected liquid are not so readily soluble in nitric acid as are the arsenical crusts, and do not, like the latter when so dissolved, yield a brownish-red precipitate with nitrate of silver.

§ 606. (*c.*) *Reinsch's process.*—This method of separating arsenic is exceedingly simple and efficacious. A solution supposed to contain arsenic should be acidulated with hydrochloric acid and heated to the boiling point. A thin leaf of copper, or fine copper gauze or wire, bright and clean, should then be introduced, and if arsenic exists in the liquid it will be deposited in an iron-gray film of the metal upon the copper. The copper being removed after the deposit is formed, must be washed in distilled water, dried, and introduced into a reduction-tube. On the slow application of heat, arsenious acid will be sublimed and deposited on the sides of the tube in the form of minute octahedral crystals. These may be examined by a lens, and then dissolved in water and subjected to the liquid tests. These supplementary tests are requisite, since solutions of various metals give a coating not unlike that of metallic arsenic, and if the copper is put into the acidulated fluid before it is duly heated, a stain will almost always occur in the presence of organic matters. In proof of the delicacy of this test, Prof. Rainey, of Glasgow, says, that "in repeated experiments" he has "found that one-thousandth of a grain of arsenious acid in one million times its weight of fluid, could be separated as a distinct deposit on copper. The copper thus coated when heated gently in a small tube, yielded a slight but distinct sublimate, most obvious on a black ground, and which, with a magnifying power of ten to twenty diameters, was found to consist of crystals with triangular facettes, and which when dissolved in water yielded orpiment and the red arseniate of silver when treated with the appropriate reagents."

Bloxam's process.—Professor Bloxam has applied the process of electrolysis to the detection of arsenic. The apparatus proposed by him consists of a two or three-ounce bottle, the bottom of which has been cut off, and replaced by a piece of vegetable parchment, bound on by platinum wire. To the mouth of the bottle is fitted a cork with a bent tube and a piece of platinum wire, which passes through the cork, and turns up beneath in the form of a hook. A slip of platinum then hooks into the end of the wire, and passes nearly to the bottom of the bottle; it forms the negative pole of the arrangement. The bottle stands in an ordinary test-glass, and the positive pole, also of platinum, stands in the glass. Dilute sulphuric acid is put into the bottle, and also in the glass, so as to stand at the same height in both vessels. The substance to be tested is introduced into the bottle, the cork adjusted, and the wires connected by five cells of Grove's battery; the heat of a spirit lamp is applied to the bent tube, and in the course of a quarter of an hour a distinct mirror is obtained, if arsenic is present. Standard solutions containing respectively a tenth, a hundredth, and a thousandth of a grain of arsenious acid, were prepared and examined by this process, and in every case a successful result was obtained.

The solutions were then mixed with organic substances, such as the ordinary articles of food—meat, eggs, milk, &c.—and the resulting matter examined. It was got into solution by means of chlorate of potash and

hydrochloric acid, and the resulting fluid evaporated down by means of a water-bath, to a thick syrupy fluid. The arsenic was thus obtained in a state of arsenic acid, which does not give a certain result by the electrolytic process. Some sulphurous acid was therefore added, and the mixture introduced into the bottle, after expelling the excess of sulphurous acid by evaporation; a drachm of alcohol was then poured over the surface, and the process put into operation. . . . In all these experiments, of which a great number were made, the thousandth of a grain of arsenious acid was readily detected.

The other metals which may be detected by this process are mercury, antimony, copper, and bismuth; lead is precluded by the sulphuric acid which is present. These are all precipitated in the metallic form upon a slip of platinum, and even in the case of antimony a mere trace of antimoniuretted hydrogen is formed, the metal being deposited on the negative pole.(*qq*)

§ 607. (4.) *Arsenic in organic mixtures.*—Before the contents of the stomach, the liver, spleen, or the other organs containing arsenic by means of absorption during life, can be submitted either to the process of Reinsch or of Marsh, it is necessary to obtain a solution as free as possible from organic matter. Various means have been recommended for this purpose, those which are the least open to objection are the following:—

If it be intended to separate metallic arsenic by means of Reinsch's process, all the soft solids should be cut into small fragments, distilled water, if necessary, added, and also hydrochloric acid in slight excess. This mixture should be boiled gently for an hour until all soft solids are either dissolved or broken down into fine flakes or grains. Filter through wet muslin, heat the filtered liquid again to the boiling point, and then introduce a slip of copper as before described.

§ 608. If, however, the apparatus of Marsh is to be used, the following process is recommended by MM. Danger and Flandin. Add to the organic matter contained in a porcelain capsule one-sixth of its weight of sulphuric acid, and heat until vapors of sulphurous acid appear. The matter is first dissolved, but during the concentration it is charred. The liquor is to be constantly stirred with a glass rod. The carbonization is affected without any swelling or frothing, and is to be continued until the charcoal is friable and almost dry. A small quantity of nitric or of nitro-muriatic acid is to be added by means of a pipette when the capsule is cold. This converts the arsenious acid into the more soluble arsenic acid. The mixture is then to be evaporated to dryness, treated with boiling water, and the limpid liquor introduced into Marsh's apparatus, in which it never froths.

The following excellent process is described by Dr. Will, as being used in the laboratory of Giessen. Before the chemical examination, it is proper to examine carefully the contents of the stomach and intestines, for the purpose of obtaining if possible any undissolved portions of arsenic. This is best accomplished by spreading out the mixture in porcelain vessels and diluting it with distilled water. If the white grains of arsenious acid should thus be discovered, they should be reduced on charcoal or tested by means of Marsh's

(*qq*) Brit. and For. Med.-Chir. Rev. April, 1860, p. 527.

apparatus. If, however, the arsenic can no longer be separated by mechanical means, the masses of organic matter, *e. g.*, the stomach and duodenum with their contents, must be treated in the following manner. The liquid contents should be saturated at a gentle heat with chlorine gas, and then heated nearly to the boiling point to drive off the excess of chlorine, and filtered through paper free from smalt. The stomach and other viscera should be cut into small pieces and dissolved by the aid of heat in as small a quantity as possible of caustic potash, then saturated with dilute sulphuric acid and the coagulated mass treated with chlorine. Or, the mass may be heated in a water-bath and treated with hydrochloric acid, being stirred all the while, and then gradually small quantities of pure chlorate of potash added, until the liquid becomes thin, and acquires a clear yellow color. The heat should now be continued for some time, after which the liquid may be allowed to cool, and then be filtered. The undissolved matter upon the filter should be washed with boiling water. The filtered liquid should be concentrated to about a pound. Saturate it with hydrosulphuric acid by the aid of heat. The precipitate of sulphuret of arsenic which is now obtained, after driving off the excess of sulphuretted hydrogen, is of a dirty brown color, owing to the admixture of organic matter. This should be washed and dissolved in caustic potash. This solution may be deprived of its sulphur by the oxide of bismuth and heat, and the filtered liquid after saturation with dilute sulphuric acid introduced into Marsh's apparatus.

Another and simpler process is that of Reinsch, already described. In order to apply it efficiently, the organic matters, after boiling in hydrochloric acid and water until they are reduced to a pulp, should be strained. Copper-leaf or gauze is then to be introduced into the liquid, which, after boiling, is allowed to stand until cool, to permit the deposit of arsenic upon the metallic surface.

§ 609. It is hardly necessary to state that whichever of these processes is preferred, the previous examination of all the chemical reagents is necessary to provide against the accidental presence of arsenic. The necessity of these precautions is obvious, but the means of providing against them are equally so.

§ 610. (5.) It was at one time supposed, upon the authority of Orfila, that arsenic was *a natural constituent of the human body*, but his own admission of his error, and repeated subsequent trials have proved that this is not the case,(*r*) that it exists neither in the bones nor in the soft parts. It has been found in the soil of cemeteries, but in an insoluble form, being separable only by concentrated sulphuric acid; the objection, therefore, that, if detected in the body, it may have been derived from this source, is not applicable, unless the coffin has been broken, and the soil become mingled with those portions of the body subjected to analysis. In this case a portion of the soil taken from the adjacent earth may be examined, for the purpose of ascertaining whether the arsenic is really derived from it. Where the coffin has been entirely disintegrated, and the earth is thus undistinguishable from the human remains

(*r*) Vid. Lehmann's Physiol. Chemistry, vol. i. p. 449. Translated by George E. Day.

contained in it, a chemical analysis can hardly be demanded. But when, on the contrary, the body is in a tolerable state of preservation, and the earth has gained access to it only through crevices in the coffin, without coming in contact with the stomach and other viscera, it is evidently an unwarranted and fanciful idea to attribute the origin of arsenic found therein to the minute trace which may possibly exist in the surrounding soil.(*s*)

Nevertheless, in the following case a competent chemist thought that there was good reason for supposing that arsenic must have been administered. A verdict of wilful murder having been returned by a coroner's jury against a woman named Rebecca Smith for causing the death of her infant child by poison, the bodies of two of her other children who had also died in infancy, were disinterred and sent to Mr. Herapath, of Bristol, for examination. The soft parts of the bodies were entirely gone, and the bones were all separated from each other. The coffins were decomposed and penetrated in all directions by the roots of a tree. The roots of trees as large as the little finger had passed through the head and skeleton, and had followed the bones in all directions. He found arsenic in the bones, in the black mould under the head, and a greater quantity in the black mould under the ribs. One of the bodies had been interred five and the other eight years. In his testimony before the coroner, Mr. Herapath, said: "I have never found arsenic in a body which was in its natural state." .... "I have made experiments on hundreds of bodies of human beings and brutes, but have never discovered arsenic, unless it had been administered medicinally or for a criminal purpose. I have also made experiments upon soils and I believe the statement of Orfila to be a mistaken one. My opinion is, that arsenic was administered to both these children during life, and that it was the cause of death; it existed in too great quantity to have been administered for a medicinal purpose." The jury without hesitation returned a verdict, "That the deceased children died from the effects of arsenic, but how or by whom administered there is no evidence to show."(*t*) In the absence, however, of any statement of the process by which the arsenic was obtained from the bones and the mould, this case cannot be considered of great importance.

§ 611. The experiments of Orfila, in 1839, have since been confirmed by numerous observations, and the fact is well established that arsenic in the combination in which it exists in the soil is completely *insoluble* and consequently cannot be carried by the percolation of rain into the organs of the body. Boiling water does not dissolve the slightest trace of it, and it is only by the prolonged action of boiling sulphuric acid that it can be separated from the earth containing it. In illustration of these remarks we append the following: In 1844, Nicolas Noble and a woman named Jerome, both of whom died with the symptoms of poisoning, were buried in the cemetery of Epinal, the earth of which contains arsenic. Their graves were two yards

(*s*) Walchner has discovered arsenic in many ferruginous earths, and in the deposits of certain mineral springs. Will and Scherer and others have made the same observations. Becker examined the soil of a churchyard, and found that every part of it contained arsenic.—*Canstatt's Jahresbericht*, 1846, 1847. Bd. v.

(*t*) Lancet, 1849, p. 253, Am. ed.

apart. The bodies were ordered to be disinterred; in the woman there was not found the slightest trace of arsenic, but it was discovered in the stomach and intestines of Nicolas. Six months later the bodies were again exhumed; the *result was the same*, although the body of the woman had been, after the first examination, immediately replaced in the grave without any coffin, and covered with the soil which had been thoroughly soaked by an abundant rain. There were reunited here all the conditions of putrefaction and moisture supposed by some to be most favorable for the formation of an arsenite or arseniate of ammonia and the imbibition of the body by it; nevertheless the soil treated with boiling water did not give up a trace of any arsenical salt, and no arsenic was found in the woman's body. In that of the man, on the contrary, it was found in the liver, after it had been carefully washed. The correctness of the inferences from the chemical analysis was soon fully established by the confession of the criminal.

Another case, occurring in the year 1851, in France, is not less remarkable. On that occasion, M. Barse, a distinguished chemist, gave the following opinion when called upon by the government. "Arsenic exists in the soil only in an insoluble state; hence it cannot be communicated by means of infiltration to the bodies contained in such soils; and therefore if arsenic is found in such bodies, it must have been derived from other sources." He examined other bodies contained in the same cemetery, and found that in none of them was there a trace of arsenic, although it existed in the soil.(*u*)

III. *Suboxide of Arsenic.* (Fly Powder.)

§ 612. This substance, which is often sold under the name of cobalt, has been the source of many cases of accidental poisoning upon the continent of Europe. The symptoms and effects are precisely similar to those of arsenious acid. In this and other countries, paper soaked in a sweetened solution of this or some equivalent compound of arsenic is in use for destroying flies.

IV. *Arsenic Acid.*

§ 613. *Arsenic acid* is seldom met with out of the chemical laboratory; it has been proved by experiments upon animals to be poisonous, and may be recognized by the brownish red precipitate it gives with nitrate of silver, its solubility in water, and in yielding a metallic crust or deposit, by the apparatus of Marsh or Reinsch.

V. *Arseniate of Potash.*

Dr. Christison is the only author who refers to cases of poisoning by this article. He quotes two cases of accidental poisoning by it.

(*u*) Vid. Briand, Méd. Lég. p. 520.

VI. *Arseniate of Soda.*

§ 614. The only instances reported of poisoning by this preparation are quite recent. Two young men sent to a chemist for doses of tartrate of soda, in place of which the arseniate of soda was sent by mistake and taken. In about five minutes they were attacked with violent cramps in the stomach, which speedily became very intense. One died in consequence, and the other remained in a dangerous state.(*v*)

VII. *Sulphurets of Arsenic.*

§ 615. There are several of these compounds known in commerce as *realgar* of an orange-red color, orpiment which is yellow, and (it is said also) another preparation, bearing the same name, which is a compound of a pure sulphuret and arsenious acid. The pigment known as King's yellow, contains a sulphuret of arsenic and a considerable proportion of lime and sulphurets. Cases of intentional and accidental poisoning with orpiment are known. A female was poisoned with it in England in 1835, and the poison found in considerable quantity in the stomach of the deceased fourteen months after death. Its character was satisfactorily proved by chemical analysis, and led to the apprehension and conviction of the murderess, who was afterwards executed.(*w*) Another case, in which it was mixed in porridge, in mistake for turmeric, is related by Dr. Jochner. An old man and his nephew, both partook of the food without immediately discovering the mistake. The prominent symptoms were continual vomiting, burning pain in the stomach, and gradual collapse. The old man died in twenty-two hours; the boy escaped. Evidence of violent inflammation was found in the œsophagus and stomach, the mucous coat of the latter being softened and thickened. There was a sphacelated spot, one inch in diameter, in the œsophagus, and another in the stomach of three inches in extent.(*x*)

The sulphurets of arsenic may be analyzed either by the sublimation of metallic arsenic from them in the reduction tube with an appropriate flux, or by testing with Reinsch's or Marsh's apparatus. They may be separated from *organic mixtures*, by adding caustic ammonia to dissolve them, and then precipitating them by hydrochloric acid, or they may be separated mechanically by mere subsidence, filtration and drying.

VIII. *Arseniuretted Hydrogen.*

§ 616. This gas is colorless, has the smell of garlic, and is exceedingly poisonous. Several cases are related in which chemists, in experimenting with it, have perished in consequence of accidentally inhaling it. The symptoms were similar to those usually seen in poisoning with arsenious acid, viz.,

(*v*) Am. Journ. Med. Sci. Oct. 1852, p. 553, from the Journ. de Méd. and Chirurgie, June, 1852.
(*w*) See the case quoted in Beck, vol. ii., p. 560.
(*x*) Henke's Zeitsch. Erg. H. 43, p. 162.

giddiness, vomiting, pain in the stomach, and collapse. In the case related by Dr. O'Reilly, death ensued on the sixth day, and Gehlen, the German chemist, died in nine days.(*y*)

The gas inhaled was, in the first of these cases, supposed to be pure hydrogen, but was contaminated with arsenic, owing to the impurity of the sulphuric acid used in generating it. The mode of obtaining it and of testing its properties has been already described.

IX. *Arsenite of Potash.*

§ 617. These and other compounds of arsenious acid with alkaline bases are poisonous. The solution of Arsenite of Potash is of much use in medicine, especially in the treatment of chronic skin diseases and intermittent fever. It receives its taste and color from the spirit of lavender, as officinally prepared, and contains four grains of arsenious acid to the fluid ounce, the usual dose of which is, for an adult, ten drops, three times a day. From the occasional adulteration of arsenic with the sulphate of lime, this preparation is no doubt sometimes weaker than the officinal strength. Two cases of fatal poisoning by it have been before referred to. In one of them the dose did not amount to more than two grains in five days. In the other the amount swallowed was not ascertained. The symptoms are the same as those produced by arsenious acid. The dose, however, which will produce poisonous effects is very uncertain. This liquid may be tested after acidulation with hydrochloric acid, by means of hydrosulphuric acid, which will precipitate a brownish-yellow sulphuret, or it may be tested by Reinsch's method and the liquid tests.

X. *Arsenite of Copper.* (Scheele's Green.)

§ 618. As this article owes its poisonous properties rather to the arsenic contained in it than to the oxide of copper, we have ranged it with the arsenical compounds. It has frequently occasioned accidents in England and on the Continent from its use as a coloring ingredient in confectionery. In 1850, Dr. Letheby reported three cases of poisoning by Scheele's Green, which came under his notice; and he states that between thirty and forty children were poisoned at the same time by sweetmeats sold to them by a confectioner in Petticoat Lane. He stated, moreover, that as many as seventy cases of poisoning had been traced to a similar source within three years.(*z*)

A child was given a green card to play with, and soon afterwards was seized with the symptoms of arsenical poisoning. It was found that the glazing of the card, which contained lead, was colored with Scheele's Green.(*a*)

The symptoms produced in the cases reported have been violent colic, vomiting, and diarrhœa, intense thirst, and retraction of the abdominal parietes. In some cases jaundice has occurred.

(*y*) Dublin Journ. vol. xx. p. 422; Buchner's Toxicologie, p. 476.
(*z*) Brit. and For. Med.-Chir. Rev. July, 1851.
(*a*) Bost. Med. and Surg. Journ. vol. xxxvii. p. 107.

Emanations from walls painted with this green color, or hung with paper stained with it, are capable of producing unpleasant symptoms.

Since the first edition of this work a very large number of cases of poisoning in this manner have been reported. The most common symptoms produced are headache, great depression, faintness, dryness of the throat, nausea, vomiting, and abdominal pain. Even paralysis has been occasioned. According to Dr. Taylor, a square foot of paper hangings stained with the aceto-arsenite of copper may yield from twenty-eight to seventy grains of the arsenical pigment.(*aa*) The last case referred to in the note is that of a watch-maker, who became affected with ulceration of the mouth and salivation in consequence of his using a shade painted green to cover the gaslight by which he worked.

§ 619. The process for obtaining this salt from organic mixtures is the following, as described by Dr. Christison. The arsenite should be dissolved by heating the mixture with a little hydrochloric acid, and then stirring it. After being allowed to cool, it should be filtered. A stream of hydrosulphuric acid gas will now cause a dark-brown muddiness or precipitate, which is a mixture of sulphuret of copper and sulphuret of arsenic. The precipitate being separated after boiling, and properly cleansed by the process of subsidence and affusion, or if it is large, by washing on a filter, the two sulphurets are to be separated by ammonia, which dissolves sulphuret of arsenic, but leaves the sulphuret of copper; and the sulphuret of arsenic may be recovered from the filtered fluid by expelling the ammonia with heat. Being thus separated, each salt may be tried by the appropriate tests enumerated under the heads respectively of *Arsenic* and *Copper*.

XI. *Corrosive Sublimate.* (Bichloride of Mercury.)

§ 620. The corrosive chloride of mercury is white and crystalline in appearance, and has an exceedingly acrid, styptic, metallic, and durable taste. It dissolves in about ten parts of cold water, and in three of boiling water. It is soluble also in alcohol and ether. (*Wood and Bache.*) The very poisonous nature of this substance is familiar to every one. It is seldom if ever taken in large doses, except by mistake, or with suicidal intentions.

§ 621. 1st. The *symptoms* which it produces are of the most urgent and alarming character, and generally supervene very soon after it is swallowed. At the moment of being swallowed there is usually an involuntary constriction of the throat, which has in many cases prevented the whole of the draught from being taken. Vomiting of a bloody and frothy liquid soon occurs, and continues throughout the case, attended with violent purging, but the latter symptom is sometimes absent. There is excessive pain in the abdomen, not always increased upon pressure, and also burning and smarting in the throat. The general symptoms are at first those of febrile excitement, with great thirst,

(*aa*) The reader desirous of investigating this subject, may consult the following articles: Times & Gaz. Feb. 1857, p. 177; Ibid. May, 1857, p. 520; Ibid. Jan. 1858, pp. 64, 76; Jan. 1859, pp. 5, 43, 94, 169; Brit. & For. Med.-Chir. Rev. April, 1859, p. 519; Lancet, July, 1859, p. 95; Jan. 1860, p. 85.

and are followed by exhaustion and collapse, a cold and clammy skin, small and frequent pulse, and difficult respiration. In most cases the urine is either entirely suppressed, or very scanty and difficult to void.

The duration of the case is very variable, sometimes terminating in a few hours, and in others being prolonged beyond a week. In a case reported by Dr. Coale, death took place on the eleventh day; and in another, by Dr. Jackson, on the thirteenth day.(*b*) Death may not occur until later, from the consecutive effects. Such was the case in an instance reported by Dr. Ware, where the patient died of dysentery on the fifteenth day.(*c*)

2d. The *smallest quantity* capable of destroying life is not ascertained with precision; children have been killed by three grains; and Dr. Taylor considers that the average fatal dose may not differ widely from that of arsenic, *i. e.* two or three grains.

In Dr. Coale's case less than ten grains were swallowed. Dr. Frisselle reports a case which is remarkable for the indifference to the symptoms upon the part of the patient. A woman took a drachm of corrosive sublimate in solution. She was immediately seized with a burning sensation in the throat, and copious vomiting of a dark, frothy substance, which was followed in about an hour by purging, which continued till the next day. She still, however, attended to her domestic duties, and no remedies were given internally until thirty-six hours afterwards. She died on the sixth day, with vomiting of a dark grumous matter.(*d*)

§ 622. 3d. *Post-mortem appearances.*—In the case just mentioned no appreciable lesion was discovered. In one reported by Dr. Williams,(*e*) the stomach, which was contracted in the shape of a dumb-bell, presented patches of dotted injection, of a bright crimson tint. There was no ulceration nor ecchymosis, but the mucous membrane was a little softened in the neighborhood of the most vivid red patches. Similar patches were seen throughout the small intestine. The bladder was contracted, and contained about a drachm of turbid urine. The other organs were healthy. The dose in this case was thirty grains, and the patient lived two days. In an instance reported by Dr. Herepath, the stomach seemed to have escaped the action of the poison, but the cæcum was of a deep black-red color, and portions of it were in a sphacelated condition.(*f*) The mucous membrane of the mouth and fauces usually exhibits traces of the action of this corrosive poison, being changed to an ashy blue color; but in the first two cases here noted, and the following one, in which a drachm was taken, the mucous membrane of the mouth and œsophagus was perfectly healthy. The principal effects of the poison were observed in the stomach, its mucous and muscular tissues, commencing at the cardia, to the extent of three inches and a half, and about the same in breadth, were converted into a gangrenous mass, having a corroded, ragged appearance, of a dusky-brown color, approaching to black. The mucous coat, to some extent, around this gangrenous portion, was of a brownish red, but the lining mem-

(*b*) Am. Journ. Med. Sci. Jan. 1851.
(*c*) Ibid.
(*d*) Boston Med. and Surg. Journal, 1850, p. 279.
(*e*) Ibid.
(*f*) Lancet, Dec. 1845.

brane of the pyloric half of the stomach, except a few slightly red patches, was quite healthy. The bladder contained only half an ounce of urine, although none had been passed for twenty-four hours before death. The lungs were extremely congested.(*g*)

Other cases are mentioned, similar to those of Drs. Coale and Williams, in which, although the quantity taken has been large, and the signs of suffering in the stomach and the general symptoms presented the most violent character, the traces of a corrosive poison have been comparatively insignificant.(*h*) The period of survivance seems to make little difference in the aspect of the alterations found post-mortem. Dr. Coale's patient lived eleven days, and the two reported by Taylor between four and five days.

§ 623. A few cases of death from the *external application* of corrosive sublimate are on record. In one the subject was a child, and the severest constitutional effects were produced. It died in about a week.(*i*) In two others, also children, of seven and eleven years respectively, an ointment composed of two drachms of corrosive sublimate to an ounce of tallow was rubbed into the scalp. The children were affected with *porrigo favosa*. Excessive suffering was the almost immediate consequence, and in forty minutes they were completely delirious. They vomited continually a green-colored matter, had great pain in the bowels, with diarrhœa and bloody stools. In the youngest there was complete suppression of urine. Death occurred in one on the seventh, in the other on the ninth day. There was no *ptyalism*.(*j*) In a case in which from fifteen to twenty grains of corrosive sublimate were injected into the vagina, there occurred, besides local symptoms, vomiting, bloody purging, coldness of the extremities, spasms of the fingers and toes, and salivation. Recovery took place.(*k*)

We take the following lucid exposition of the chemical analysis for corrosive sublimate from Dr. Guy's work on *Medical Jurisprudence*.

4th. "*Tests.*—We may have to examine the poison in the solid form, in solution, and in organic liquids.

§ 624. (1.) "*Corrosive sublimate in the solid form.*—On the supposition that we are ignorant of the nature of the substance submitted to analysis, we first heat a small quantity on platinum foil. It is completely volatilized. It may therefore be arsenic, corrosive sublimate, or calomel. The great solubility of corrosive sublimate in water distinguishes it at once from the other two substances. The addition of a few drops of liquor potassæ places the nature of the substance beyond a doubt. Corrosive sublimate is changed to a yellow color, while arsenic undergoes no change, and calomel is turned black. We may obtain still further assurance by the following tests: 1. Hydrosulphuret of ammonia changes the powder to a black. 2. A solution of iodide of potassium turns it to a bright scarlet. 3. Moisten a clean rag with dilute muriatic acid (one part of the acid to two of water), sprinkle

(*g*) Wade, Lancet, June, 1848, p. 498.
(*h*) Vid. Taylor on Poisons, and a case by Dr. Hodges, Am. Journ. Jan. 1855.
(*i*) Am. Journ. Med. Sci. July, 1844, p. 259.
(*j*) De Ricci, Dub. Quart. Journal, Aug. 1854.
(*k*) Butcher, Dub. Quart. Journal, Feb. 1856, p. 242.

upon it a small quantity of the powder, and rub it on a clean plate of copper. A silvery stain is formed, which is readily volatilized by heat. 4. Mix one part of the poison with three or four parts of calcined carbonate of soda; place the mixture in a reduction tube and apply the heat of a spirit lamp, having previously dried the upper part of the tube. A ring of globules will be formed on the cool sides of the tube.(*l*)

§ 625. (2.) "*Corrosive sublimate in solution in water. Sulphuretted hydrogen.*—On the supposition that we are ignorant of the contents of a liquid submitted to analysis, we test for a base by sulphuretted hydrogen. Corrosive sublimate is one of those which yields a black precipitate, first giving a milky-white appearance to the liquid. With liquor ammoniæ it gives, in common with lead and bismuth, a white precipitate, but with liquor potassæ, a yellow (the hydrated peroxide). By this we recognize a per-salt of mercury. The supernatant liquor contains chloride of potassium, and if we add to it nitrate of silver, we obtain the white chloride of silver, which proves that the salt of mercury is a chloride. This precipitate being collected, washed, and dried, and heated in a reduction tube, gives a well-defined ring of mercury." By using the other precipitates in the same way, a similar result will be procured. The following are additional tests.

(*a.*) "Protochloride of tin.—A solution of this substance throws down a white precipitate, turning rapidly to gray, and from gray to black. This consists of minutely divided mercury, from which the supernatant liquor may be decanted, or separated by filtration. On introducing into the tube containing this precipitate a plug of blotting-paper, and pressing it firmly against the bottom of the tube, the globules are made to coalesce, so as to form a mirror of mercury.

(*b.*) "Metallic test.—Acidulate the liquid with a few drops of muriatic acid, and introduce a narrow slip of clean copper. A gray film will be formed on the surface of the metal. This being carefully dried, may be introduced into a reduction-tube, and heated with the flame of a spirit-lamp. A ring of metallic globules will be deposited on the upper part of the tube. Pure tin, zinc, or silver, may be substituted for copper. The latter is to be preferred to any other metal.

(*c.*) "Galvanic test.—Take a narrow strip of sheet zinc of a size convenient for introduction into a reduction-tube; moisten it, and take up as much gold leaf as will adhere to it. Introduce this into the solution, slightly acidulated with muriatic acid; the gold will soon be covered with a gray film. Remove it from the solution, and dry it carefully in the heated air, above the

(*l*) Dr. Arthur Morgan proposes a new and exceedingly convenient test for mercury. Add a strong solution of iodide of potassa to a minute portion of any of the salts of mercury on a clear bright plate of copper, and the mercury is immediately deposited in the metallic state, appearing as a silvery spot, which cannot be mistaken for anything else. Corrosive sublimate may be detected in this way in a drop of solution. The disadvantage is, that although it allows the detection of minute portions of mercury, it requires that it should be concentrated. It will detect the 1-1000 of a grain of corrosive sublimate in a drop, but not in a drachm, but this may be remedied by evaporation. The explanation is, that the iodide forms a soluble and easily decomposed salt with various salts of mercury, that is an iodide soluble in excess of iodide of potass.—*Chemical Gazette*, June, 1852. See § 626.

flame of a spirit-lamp. Introduce the dried metal into a reduction-tube, and apply the flame of a spirit-lamp. A ring of metallic globules will be formed. This test is one of extreme delicacy, and will give a characteristic result, when all other tests fail. It is that which should be preferred for the discovery of very minute quantities of the poison. The metallic deposit may be readily obtained by placing a drop of the acidulated solution on a surface of clean copper or gold, and touching the moistened metal with a fragment of zinc or iron. Dr. Wollaston once employed a key and a sovereign for this purpose. The acid in combination with the mercury may be shown to be the hydrochloric, by testing the fluid from which the mercury has, by any of the foregoing methods, been precipitated. On the addition of the nitrate of silver, we obtain a white precipitate, the chloride of silver, which is insoluble in nitric acid.

§ 626. (3.) "*Corrosive sublimate in organic liquids.*—As the poison is very soluble, it is rare to meet with it in a solid form. But when it has been taken in the mass, it may sometimes be separated, by merely stirring the liquid, at the same time adding, if it be very viscid, distilled water. The corrosive sublimate, from its great weight, will subside, and may be collected. As the poison is decomposed by the secretions of the body, by the mucous membrane, and by several articles of food, it might not be found in solution in the stomach, even though no antidote had been given. We must, therefore, expect to find it in one of two states; in solution, or in combination with the solid contents of the stomach. In the former case we procure a clear liquid by diluting with distilled water, boiling if necessary, and filtering. In the latter case, one of two processes may be adopted. We may boil the solid matters in distilled water, and in this way bring the soluble salt of mercury into solution; or, if the solid matters treated in this way yield no trace of mercury, in consequence of the soluble salt having been decomposed, evaporate to dryness, and digest the dried residue in warm nitromuriatic acid. The insoluble compound of mercury is thus reconverted into the soluble bichloride. This acid liquor must be evaporated to dryness, and the residue be dissolved in distilled water, and filtered." The corrosive sublimate may now either be dissolved out by ether, or at once tested by the protochloride of tin, or by the galvanic test.

§ 627. A *new* test has been proposed. If a strong solution of iodide of potassium be added to a minute portion of any of the salts of mercury, placed on a clean bright plate of copper, the mercury is immediately deposited in the metallic state, appearing as a silvery stain on the copper, which cannot be mistaken, as no other metal is deposited by the same means. By this method, it is said, corrosive sublimate may be detected in a drop of solution, unaffected either by caustic potash, or iodide of potassium. In a mixture of calomel and sugar, in the proportion of one grain to two hundred, a distinct metallic stain will be obtained with one grain, which contains $\frac{1}{200}$th of a grain of calomel; in like manner, $\frac{1}{400}$th of a grain of peroxide of mercury may be detected, although the mixture of sugar is not in the least colored by it.

With the preparations of mercury in the undiluted state, this process acts with remarkable accuracy; the smallest possible quantity of calomel or per-

oxide of mercury, such as would almost require a magnifying glass to perceive, placed on copper treated with iodide of potassium, will give a distinct metallic stain. The only precaution which this process seems to require is, that the liquid to be examined should be concentrated by evaporation.(*m*)

§ 628. 5th. Where corrosive sublimate has undoubtedly been the cause of death, it has not always been found in the body of the deceased. Thus, in a case reported by Dr. Wegeler, of a young man who poisoned himself with three drachms of this substance, and died on the sixth day thereafter, none of the poison could be detected in the stomach or intestines.(*n*) In another, by Dr. Taylor, where two drachms were swallowed, and the man died in four days, no mercury was detected in the stomach or tissues.(*o*)

§ 629. 6th. Orfila (the nephew of the distinguished toxicologist) undertook numerous experiments for the purpose of ascertaining what length of time was required for the disappearance of certain poisons from the system. With respect to corrosive sublimate, he states, that when it has been administered for some time, it will generally disappear from the organs in eight or ten days, and he found it but once on the eighteenth day, after its discontinuance. An individual had undergone a course of treatment with corrosive sublimate, and died four months after ceasing the course. He was poisoned with a mercurial preparation. On analysis, mercury was found in his organs. Hence, according to this author, the mercury could not have been derived from the preparations taken four months before death. He also says, that if a man survives fifteen days after being poisoned with corrosive sublimate, it is quite probable that the experts will find no trace of mercury. They will, however, commit a gross error, if they conclude from this, that there has been no poisoning.(*p*)

XII. *Nitrate of Mercury.*

§ 630. A case of homicidal poisoning, attributed to the administration of a portion of this salt in a pudding, is related in Henke's Zeitschrift for 1849. The symptoms were very similar to those of poisoning by corrosive sublimate; the man survived five days in great agony, and the post-mortem inspection revealed softening and inflammation of the mucous coat of the intestines and stomach. The most curious feature of this case was, that mercury was found in the metallic state in the stomach and intestinal canal, and had been voided also with the discharges during life. This circumstance was attributed by the examiners to the readiness with which the acid, in this combination, is separable from the base, especially under an elevated temperature. A case of suicide by the acid pernitrate, is reported by Mr. Bigsley, in the London Medical Gazette.(*q*)

The concentrated salt is used as a caustic in surgery, and is exceedingly active. It is stated that symptoms of mercurial poisoning have arisen from its use in this form.

§ 631. Other salts of mercury, such as the *white* and *red precipitates, cin-*

(*m*) Pharm. Journ. Feb. 1852.
(*n*) Canstatt's Jahresbericht für 1846, Bd. v. p. 81.
(*o*) Ibid. p. 322.
(*p*) Am. Journ. Med Sci. from Comptes Rendus, Jan. 15, 1852.
(*q*) Vol. vi. 329.

nabar, the *bicyanide*, and *turpeth mineral*, are all poisonous, but it is not necessary to enlarge upon them in this place. They act as irritants or corrosives, and the post-mortem appearances in the cases reported are not unlike those found in poisoning by corrosive sublimate.

The presence of mercury may be detected as already mentioned, or by the use of Smithson's battery, which consists of a plate of tin lined with one of gold, in the form of a spiral; or, as has been recommended by Mr. Morgan, of Dublin, by the silvery stain which will immediately appear on a bright plate of copper, when touched with a strong solution of iodide of potassium, if mercury be present, either in solution or in the solid form.(*r*)

XIII. *Deleterious Effects of Mercurial Preparations.*

§ 632. The subject of chronic poisoning by mercurial preparations, and the discussion of questions arising out of the specific effects of them upon the system, involves too many considerations to be profitably introduced here. We therefore refer the reader for information on these points, to Dr. Christison's treatise, and to the standard works on Pathology and the Practice of Medicine.

We cannot forbear, however, to call the reader's attention more particularly to those forms of disease known under the name of *cancrum oris*, *gangrænopsis*, and *mercurial sore mouth*, especially in reference to children.

§ 633. 1st. That death may occasionally result from the action of mercury upon the mouth, there can be no doubt. It is extremely important, however, to know, if this can be distinguished from those forms of inflammation and gangrene of some portion of the buccal cavity, which are the result of certain depressed and diseased conditions of the system, independent of the action of mercury; and also, whether mercury given to a patient whose vital force is thus reduced, and whose blood is already depraved, may not be the *exciting* cause by which the tendency to gangrenous ulceration becomes developed. It is much to be feared that the inappropriate administration of this drug, has in some cases been followed by serious, and even fatal, disorganization of the mouth; while, on the other hand, physicians may be unjustly blamed for consequences which were really not the result of their imprudence, but of other causes which they were unable to control.

We purpose first, by a few cases, to contrast the appearances presented by the effects of mercury on the mouth, with those which are due to disease.

A boy about ten years old, supposed to be suffering under bilious colic, was given twenty grains of calomel, which purged him in four hours; he took, in twenty-four hours, ten grains more with the same effect, but without much relief. On the morning of the fourth day (medical treatment having been continued, but no calomel or any of the acids used) all the symptoms of the early stage of ptyalism set in; the inflammation and swelling of the salivary glands rapidly increased, so that by the day following, there was a general swelling of all the soft parts of the face usually affected by severe ptyalism. On the next morning, a small gangrenous spot, of a dark brown color, was

(*r*) See note to § 624.

discovered on the middle and inner surface of the lower lip, which rapidly spread until the seventh day; at this time, the entire lower lip, the inside of both cheeks, and surface of the tongue, were completely gangrenous, the lower lip and tip of the tongue were wanting, having been destroyed by mortification. The ptyalism increased, a stream of viscid saliva was constantly running out of the mouth, and the patient presented a most piteous spectacle. The breath was very fetid and offensive. Death occurred on the twelfth day. In another case, a little girl, ten years old, who received a fracture of the head from a fall, was given some calomel for the purpose of opening the bowels, but it did not operate. Her mouth became sore, and got rapidly worse, notwithstanding every effort was made to relieve it. The throat and face became immensely swollen, the teeth became loose and several came out, and the whole inside of the mouth, tongue and all, had a very black appearance, emitting a constant flow of a dark putrid saliva of intolerable fetor. The greater part of the mouth and tongue mortified, and part of the tongue, the under lip, and part of one side of the face, sloughed off, presenting a most horrible spectacle, and one exquisitely distressing to the parents and friends of the little patient—the more so, as the child continued to live some days after these parts had become detached.(*s*)

§ 634. That form of disease due to the action of mercury upon a depraved constitution, may be illustrated by the following cases.(*t*) A boy, aged thirteen years, after suffering from influenza and partially recovering, was attacked with gastro-enteritis, from over-indulgence in animal food. The bowels were moved daily with about two grains of calomel, followed by a teaspoonful of castor oil when necessary. He amended under this treatment; but, about three weeks after the commencement of his sickness, it was discovered that mortification had commenced under the tongue, near the third molar tooth, on the left side; it extended around all the molar teeth of that side, embracing the gum and a portion of the cheek. The cheek was slightly swollen, and the left eye was opened with some difficulty. The mortification spread rapidly, notwithstanding the use of caustics, a dark spot appeared on the outside of the cheek, and the patient died on the third day. It is stated that the boy had dug out a piece of a tooth with a knife, a few days before the mortification began, at the place where it commenced. About twenty grains of calomel were taken during the first week of the disease, and none afterwards. The glands were not affected; and the mouth, when the mortification commenced, presented a healthy appearance.

Dr. S. Jackson (late of Northumberland) says: "I applied mercurial ointment to the face of a child, about three years old, to prevent the pitting of confluent smallpox; in a few days the gums were swelled and the teeth loosened, but only on the side upon which the patient continually lay. The gums soon mortified, the gangrene spread to the cheek, bringing on a fair case of gangrænopsis, and she died of her twofold disease in a very few days. This," he says, "was not a case of salivation, for the other side of the jaw

(*s*) Bost. Med. and Surg. Journ. vol. xxxii. pp. 459 and 517.
(*t*) Ibid. p. 342.

remained sound, and the teeth on that side firm in their sockets."(*u*) In the same manner were fatal ulceration and gangrene developed, in a case reported by Dr. Marshall Hall. A child four years of age, with hooping-cough, took, according to a prescription furnished from a dispensary, three grains of calomel, on the 29th of October, and the same dose four times thereafter until the 7th of November. About this time the right cheek became much swollen, and there was great difficulty in opening the mouth, with very offensive breath. The gums and inside of the cheek became ulcerated, and on the 16th a sphacelus appeared on the right cheek, of about the size of a shilling, which rapidly extended to the size of a crown. The child continued to get worse, and died on the 23d. On post-mortem examination, there was found pleuro-pneumonia of the lower lobe of the right lung; there was an extensive eschar in the right cheek; its size, externally, was two and a half inches in length by one and a half in breadth. It penetrated through the entire cheek, and occupied an equally extensive space on its internal surface; the contiguous gum was in a similar state of sloughing, the alveolar processes were denuded, one or two teeth had disappeared, and several adjacent ones were loose. On the left side there was incipient gangrene of the cheek internally, and also of the contiguous gum, and the teeth were loose. The rest of the mouth was not affected.

§ 635. 2d. Cases of true gangrene of the face, however, have a different origin and course. A single example will suffice. It is taken also from Dr. M. Hall's Observations in Medicine. A little girl, aged three years and a half, had been affected with *fever* about fourteen days, and was apparently convalescent, when the left side of the face and lips was observed to be swollen, and to have a red and glistening appearance. About the same period, three spots were observed, one on the gum of the lower jaw, and the other two on the left cheek. These spots became dark-colored, and gradually spread. A slough separated from the cheek, and exposed the inside of the mouth. The contiguous teeth fell out. The breath and the exhalation from the ulcer were extremely offensive. The child lingered about fourteen days, and sank gradually.

Having thus seen the various forms of disease of the mouth which may give rise to a suspicion of poisoning by mercurial preparations, it only remains for us to point out the means by which the symptoms caused really by such preparations, may be distinguished from others which are spontaneous in their origin.

§ 636. All authors agree that mercury does not produce salivation in children as readily as in adults. Dr. Clarke says, that although he has prescribed mercury in very large quantities in a great number of cases, he never produced salivation, except in three instances, in any child under three years of age: Dr. Warren, of Boston, observes: "That he has never known an infant to be salivated, notwithstanding he has given, in some cases, large quantities with this view." Mr. Colles, of Dublin, says: "No man in the present day requires to be told that mercury never does produce ptyalism or swelling and ulceration of the gums in infants." Drs. Evanson and Maunsell say: "Mercury

(*u*) Trans. Coll. of Phys. Philad. U. S. vol. ii. No. 3.

does not seem capable of salivating an infant; we have never seen it do so, nor are we aware of any such case being on record."(*v*) Dr. West, of London, says: "In infants under five years of age, the gums hardly ever become affected by mercury, though most energetically employed; and it has never yet occurred to me to meet with an instance of profuse salivation or dangerous ulceration of the gums. Such accidents, however, do now and then occur, and have been known to terminate in fatal gangrene of the cheek or necrosis of the jaw." Yet, when salivation does occur, there is quite sufficient testimony, which it is unnecessary to quote, that the most disastrous consequences may follow. In this fact, however, appears to lie the great distinction between the disease resulting exclusively from the use of mercury, and that which is spontaneous or merely called into action by it. Dr. Hall says: "It is well known to every observer that the effect of calomel, when it does take place, is *uniformly diffused* over the *gums*, *tongue*, and internal parts of the cheek." Further, "it is *diffused* and is totally different in many respects from the *circumscribed* form of the gangræna oris." In other words, the mercurial disease commences in the gums and tongue; they swell, ulcerate, and slough, and the disease may then extend itself to the lips and cheek. The disease is therefore different in its early manifestations, is attended with salivation, is slower in its progress, and at first confined to parts which in true gangrænopsis are only secondarily affected.

§ 637. We take the following description of *gangrænopsis* from the admirable monograph of Dr. Jackson, which we have already referred to:—

"I. The gangrænopsis attacks the cheek, the lip, or the nose, sometimes the fauces; most frequently in children, but sometimes in adults.

"II. It begins in those soft parts, and never in the maxilla, often where no mercury has been used, in a debilitated and febrile state of the system, as in idiopathic fevers and dysentery. Van Swieten saw it in scurvy, and Huxham in measles. Dr. Marshall Hall says (p. 178): 'In all the cases which came to my knowledge, this affection had been preceded by fever, acute disorder of the digestive organs, inflammation of the lungs, variola, rubeola, or scarlatina.' An exhausted state of the vitality, with cachectic fever, is, therefore, the predisposing cause.

"III. The exciting cause is any injury done to the parts. I saw it evidently started in two cases by the child's lying continually on one side, with a hand under the cheek, thus pressing the mucous membrane against the molar teeth; a protuberance of this membrane being caught between the teeth, was continually bruised, and a point of gangrene was thus established in an exanimate state of the whole system.

"IV. It is sometimes the result of severe cases of cancrum oris, the irritation spreading from the gums to the cheek."

It is well known that cancrum oris and the gangrene which attacks the cheek often occur in cases where no mercury has been given. We think that there is between these two essentially little pathological difference; the most tangible distinction being, as it appears to us, that the canker sore-mouth of

(*v*) Beck's Essays on Infant Therapeutics, p. 48.

children (as it is called) sometimes prevails endemically in low, unhealthy situations, and among the poorer classes, being frequently seen in the hospitals for children, and occurring without being necessarily preceded by disease; whereas the gangrene of the cheek is commonly a sequel of exanthematous or other prostrating diseases. Both are allied closely to the gangrene of the genitals in female children, elsewhere referred to. (Vid. RAPE.)

§ 638. It is evident, we think, from what has been said, that the diagnosis of the cause of these various forms of disease is not always easy. It depends chiefly upon the possibility of ascertaining the manner in which the disease first manifested itself—whether by swelling and ulceration of the gums generally, with an increased flow of saliva, or whether it commenced in the mouth or cheek with a hard red swelling, rapidly running into gangrene. The character of the disease under which the child was suffering, and its hygienic conditions, must also be known.

If an opinion is required only after death, or at an advanced period of the disease, it may be impossible to know whether it can be attributed to mercury, or whether, in case it is known that mercury has been exhibited, it can be fairly attributed to it. Dr. Taylor does not admit the validity of the criterion that mercurial poisoning can be known by the *uniform diffusion* of the disease over the gums, tongue, and internal parts of the cheek, as advocated by Dr. Hall; and Dr. Christison, he says, has recorded a case in which, although the gangrene resulted from mercury, it was observed to occur on the skin near the mouth, on each side, whence it spread over the whole cheek, and destroyed life in eight days (p. 319). He also gives a case in which a charge was made against a medical practitioner, of having caused the death of a child aged four years by administering an overdose of some mercurial preparation. The child was laboring under hooping-cough, and some medicine was prescribed; on the fourth day the child complained of soreness of the mouth, the teeth became loose and fell out, the tongue and cheek were very much swollen, and the child died in the course of a few days from gangrene in the left cheek. The answer to the charge was that not a particle of mercury had been exhibited; a fact clearly proved by the production of the prescription-book of the medical attendant.

§ 639. In the midst of these conflicting opinions and observations, the only path for the physician to follow is that we have already pointed out, viz., a careful inquiry into the early history and symptoms of the case; and we consider that should these prove that the child was already laboring under a prostrating disease, the most reasonable conclusion that can be drawn will be that this was the true cause of its death, whether mercury was exhibited or not. If, on the other hand, the child was not affected by any such disease, it must be shown that the early symptoms were either those of mercurial ptyalism or epidemic canker. Upon these grounds, we do not think that it will be difficult to form a probable opinion.

XIV. *The Salts of Lead.*

§ 640. 1st. *Form.—Acetate or sugar of lead* is a white crystalline salt, of a sweet, astringent taste, and soluble in water and alcohol. The solution in

ordinary water is turbid, owing to the formation of the carbonate of lead. It resembles loaf-sugar in appearance, a circumstance which has sometimes led to its being swallowed in mistake for it. Its constant use in medicine, and the facility with which it can be procured, are the chief causes of the frequent cases of poisoning observed from it.

§ 641. 2d. *Symptoms.*—Acetate of lead is by no means an active poison. In general, its poisonous effects arise gradually, and become slowly developed after its long-continued use. When taken, however, in a large quantity at once, it is capable of producing symptoms analogous to those caused by other irritant poisons. It is eliminated from the system by the urine, by the perspiration, and by the milk. The constitutional effects of lead have been thus described by Tanquerel des Planches :—(*w*)

1st. Saturnine coloration of the gums, of the buccal mucous membrane, and of the teeth. A narrow leaden-blue, or slate-blue line, from one-twentieth to one-sixth of an inch in breadth, is formed on the margins of the gums nearest to two or more teeth (usually the incisors) of either jaw. The inner part of the lips and cheeks is sometimes stained blue. The blue discoloration is supposed to depend upon the formation of the sulphuret of lead.

2d. Saturnine taste and breath.

3d. Saturnine jaundice.

4th. Emaciation most evident in the face.

5th. Slowness, smallness, and irregularity of the pulse.

The true saturnine diseases which follow may either exist alone or be complicated with each other. They are: 1st. Lead or painter's colic. 2d. Lead rheumatism. 3d. Lead palsy, often accompanied with loss of sensation in the part affected. 4th. Disease of the brain—*encephalopathia saturnina*—manifested by delirium, coma, or convulsions, and the loss of one or more senses.

§ 642. Dr. Wm. Norris, of Stourbridge, gives an account of the poisoning of a vast number of persons, by acetate of lead accidentally mixed with flour. About thirty pounds of this salt were mixed with sixty or eighty sacks of flour, which was retailed to a great many persons in the neighboring villages. Nearly a thousand persons suffered from the poisonous effects of lead. The persons who ate the bread, after a few weeks complained of a peculiar taste; some compared it to soda, others to rusty needles or copper. The tongue was covered with a darkish cream-colored mucus, and was soft and flabby; the gums were swollen, with a blue line on the margin, and in many cases the blue tinge extended nearly over the gums, and occasionally on the inner side of the lower lip, and in a faint degree over the mucous membrane of the mouth and towards the fauces; the tonsils were in some cases enlarged, and in other cases there was salivation. These symptoms were accompanied by loss of appetite, nausea, vomiting, flatulency, and obstinate constipation, with a sense of constriction in the throat and epigastrium, and a violent spasmodic pain and twisting around the navel, which was retracted; the pain was sometimes in-

(*w*) Traité des Malad. de Plomb, Paris, 1839.

creased by pressure, and when the paroxysms were violent, the muscles of the abdomen were contracted spasmodically, and a most frequent symptom was pain in the loins about the situation of the lumbar fascia, and in the deltoid muscles. The patients were chilly, with great languor and lassitude; the skin dry; the intellect was clear, but there was general depression, and the pulse was low and feeble; the features were sallow and shrunken; and the muscles flabby; the fluid vomited was often mixed with bile and occasionally, a coffee-ground secretion; the feces were dark and highly offensive, with scybala; the urine scanty and of a dark red color almost like porter.(*x*) It is well known that the acetate of lead is frequently administered in disease in small doses, for a considerable length of time without any symptoms of poisoning arising from it.

§ 643. An interesting case of imputed poisoning by acetate of lead, may be found in Dr. Maclagan's "Contributions to Toxicology," in the Ed. Month. Journ. for Dec. 1848. Although the falsity of the charge was shown by many circumstances, which it is not here necessary to relate, there was one which in itself would have had great weight in its refutation. The acetate of lead was said by the prosecutor to have been given to him in coffee. Now acetate of lead is the very agent employed to decompose and decolorize coffee, in preparing its characteristic constituent caffeine. The precipitate which the lead salt forms in its infusion, if it is allowed to rest, subsides, and leaves a pale-colored fluid in no respect resembling that which people are accustomed to drink as coffee. One ounce of ordinary coffee was boiled for ten minutes in the coffee-pot, which had been used, with six cupfuls of water. It was allowed to settle for five minutes, and then poured off. It had the ordinary appearance of unclarified coffee, dark brown, and slightly turbid, and depositing some coffee grounds. "Half an ounce of sugar of lead being the same proportion to this bulk of fluid which was found in the coffee got from the prosecutor was now added; the coffee was boiled again and allowed to settle for five minutes after removal from the fire. Another similar portion, being decanted, was now found to be a clear transparent liquid, with hardly any color, except a faint shade of green, and more resembling a weak infusion of green tea than coffee. It was obvious, therefore, that if, during the breakfast, the coffee-pot remained at any time at rest for five minutes, the next cupful poured off must have been so different in appearance from ordinary coffee as at once to attract attention." This decolorizing property of the sugar of lead should therefore not be lost sight of in any future case of alleged poisoning by its mixture with coffee.

§ 644. Occasionally, however, symptoms of poisoning are seen, and, in a case reported by Dr. Letheby, with a fatal termination. A child six years of age was given one-fifth of a grain two or three times a day for nearly nine weeks. It became emaciated, had colic and constipation, the stools were black and offensive, the breath fetid, and towards the last it became drowsy and its limbs were paralyzed. Upon the day of its death it had convulsions, and

(*x*) Prov. Med and Surg. Journal, June 27, 1849.

shortly before death, fell into a state of coma.(*y*) An instance of recovery from an ounce and a half of sugar of lead, swallowed in mistake, is related by Dr. Taylor.(*z*) The woman fell ill almost directly, had a nauseous metallic taste in her mouth, with a burning heat in it, the throat, and the stomach. On taking some water to wash away the taste, vomiting was brought on. The mouth became very dry; she had great pain at the pit of the stomach, and excessive vomiting. Two hours afterwards, she felt sleepy and stupid—alternately perspiring and shivering; she complained of violent colic, which was relieved by pressure. With great languor, she had also cramps in the thighs, and numbness over the whole body, with giddiness. The gums were tender, and had, apparently, a blue line on their edge; there was some salivation, and the breath was foul. There were other symptoms such as have been before detailed. She was relieved by treatment in a few days. Several other cases of the same kind are reported, which it is needless to describe. They all recovered.

§ 645. The symptoms which follow the introduction of the *carbonate* or other slightly soluble salts of lead into the body, are precisely similar to those already mentioned; occurring soon when the dose is large, and gradually when entering the system by water, wine, cider, or other liquids which are apt to be impregnated with them, and also when inhaled by the lungs. The subject of chronic poisoning by lead in these ways is one which has indeed its interest for the physician, in its relation to medical police, but the facts relating to it are too fully detailed in the comprehensive works on poisons and the treatises upon the practice of medicine, to require elucidation at our hands.(*a*) The character of the poisoning differs so completely from that of the irritant poisons, that no mistake on this point can ever be made; the only embarrassment which ever presents itself being the discovery of the particular way in which the lead had been introduced into the system.(*aa*)

§ 646. 3d. *Post-mortem appearances.*—There are few poisons productive of so much suffering, and, when fatal, of such violent symptoms towards the close of life, and yet leave in the body such indistinct traces of their action as these. In a case which terminated with the symptoms of saturnine *encephalopathia*, viz., delirium, insensibility, and tetanic convulsions, Empis and Robinet found no anatomical alterations of any importance. Lead was discovered, by incineration, in the brain and liver.(*b*) Likewise, in another case examined

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(*y*) Pharm. Journ., Dec. 1845. (*z*) p. 348.

(*a*) Besides the chief authorities which may be consulted on this subject, are the following: Tanquerel des Planches, Traité des Maladies du Plomb. (also translated by Dr. Dana, of Boston); Dr. Burton, Med.-Chir. Trans. vol. xx.; Gueneau de Mussy, Dub. Quart. Journ. vol. vii. p. 405; Dalton, Am. Journ. Med. Sci. Oct. 1849; Alb. Smith, Month. Journ. March, 1853; Bois de Loury, Rev. Méd. Juillet, 1852; Alderson, Lancet, July, Aug. Sept. and Oct. 1852. For some cases of poisoning by visiting cards (glazed with lead), *vide* Med. News, 1854; or Med. Times and Gaz. July, 1854. Eichmann.

(*aa*) For additional illustrative cases, consult Lepage, Annuaire de Thérap. 1857 p. 224; Inman, Liverpool Journal, Jan. 1857, p. 26; Meyer, Am. Journ. of Med. Sci. Oct. 1857, p. 542 (in this case the poison was mixed with snuff); O'Connor, Dublin Quart. Journ. May, 1859, p. 482; Lindsay, Brit. and For. Med.-Chir. Rev. Oct. 1859, p. 532; Times and Gaz. March, 1858, p. 296; Aldis, Jan. 1860, p. 33; and ibid. p. 60.

(*b*) Arch. Gén. Sept. 1851, p. 67.

by Dr. Hopfgartner, of Vienna, lead was found in the same organs, but no pathological alterations, except that one of the lateral columns of the spinal marrow appeared to be wasted.(c) In Dr. Letheby's case, lead was freely detected in the contents of the stomach, in the brain, muscles, liver, intestines, blood, and in the serum of the cerebral ventricles. The stomach and intestines were pale and nearly empty, and the latter contracted, and in some places invaginated.

§ 647. 4th. *Chemical examination.*—Sugar of lead is very soluble; it has an astringent and sweetish taste, and a slight odor of vinegar. In the solid state it may be reduced in the blowpipe flame with carbonate of soda, globules of metallic lead being immediately formed with a yellow incrustation of the oxide. In solution, it may be detected by several reagents: *hydrosulphuric acid* throws down the black sulphuret of lead, and *chromate of potash* a yellow precipitate of the chromate of lead. These latter tests produce the same results with bismuth; but the basic oxide of bismuth is precipitated by a large quantity of water alone, while the oxide of lead is completely precipitated by sulphuric acid. *In organic mixtures*, however, as acetate of lead forms insoluble compounds with albumen and other animal principles, these must be redissolved by a little nitric acid and the mixture filtered. It should then be tested by hydrosulphuric acid, and if a dark-colored precipitate is formed and the precipitate is reduced before the blowpipe flame on a piece of charcoal, a malleable globule will be thus procured if lead be present. Although this test is quite satisfactory and easily applied, another one may be employed as recommended by Dr. Christison. The black sulphuret of lead should be collected on a filter, washed and dried, and then heated to redness in a tube, and digested with nitric acid by the aid of a gentle heat. "The lead is thus dissolved without the sulphur being acted upon. The solution is then to be diluted with water, filtered, evaporated to dryness, and gently heated, to expel the excess of nitric acid." It can then be tested by the reagents before mentioned. Care must be taken to expel all the excess of nitric acid, because an excess will strike a yellow color with the hydriodate of potash, though lead be not present. The same process may be used for any of the soluble salts of lead.

In the *tissues*, lead may be detected by incineration in a crucible with black flux. It will, of course, if present, be found at the bottom, in the metallic form. There is no reason to suppose that it may not be detected several months after death. It appears to be the opinion of the most eminent toxicologists, with the exception of Orfila, that this metal does not exist as a normal constituent of the tissues of the body.

XV. *The Salts of Copper.*

§ 648. It is seldom that these poisons are designedly administered with homicidal intentions, since their detection, both by the color and taste, is too easy to permit it. A husband attempted to poison his wife by adding verdi-

(c) Wiener Zeitsch. Sept. 1852.

gris to a dish of beans. The bad taste prevented her from eating them. He buried the cooked mess in his garden, from which it was disinterred, and then examined by chemists. They proved the certain presence of the metal. He was condemned to hard labor for life.(*d*) Cases of poisoning from these salts may then be divided into those in which a large dose is swallowed, either by accident, or with a view to suicide, and those which proceed from the contamination of food by copper vessels, or by the salts of copper used as coloring matters for confectionery, &c.

1st. The *symptoms* come on, in the first instance, much sooner after the ingestion of the poison than in the latter. There is violent headache, vomiting and purging, severe colicky pains, eructations, salivation, cramps in the limbs, and finally convulsions and insensibility. Sometimes jaundice is observed. In a case related by Dr. Percival, two drachms of sulphate of copper produced fatal convulsions. In another, where the same salt was swallowed, there were no convulsions. The child, which was sixteen months old, died in four hours.(*e*) Those cases which have terminated fatally, have lasted a variable period. Thus, in one reported by Pyl, a woman who swallowed two ounces of verdigris, died in *three* days; in another, by Neumann, half an ounce destroyed life in *sixty* hours; and in another, in which an ounce of blue vitriol was taken, death ensued within *twelve* hours.(*f*) In most cases, however, of poisoning with these salts, the patient has recovered, when timely and efficient means have been used.

In those cases in which the poison has been conveyed accidentally, through articles of food, into the system, the symptoms have been the same as those mentioned, although they have usually not come on until a few hours afterwards. They are thus described by Orfila: "An acrid, styptic, coppery taste in the mouth; parched and dry tongue; a sense of strangulation in the throat; coppery eructations; continual spitting; nausea; copious vomiting, or vain efforts to vomit; shooting pains in the stomach, which are often very severe; horrible gripes; very frequent alvine evacuations, sometimes bloody and blackish, with tenesmus and debility; the abdomen inflated and painful; the pulse small, irregular, tense, and frequent; syncope, heat of skin, ardent thirst, difficulty of breathing, anxiety about the præcordia, cold sweats, scanty urine, violent headache, vertigo, faintness, weakness of the limbs, cramps of the legs, and convulsions." Such are the symptoms which, it is said, are produced by the ingestion of articles of food contaminated with copper salts. How far they are *really* due to this cause we shall presently inquire.(*ff*)

§ 649. 2d. *Post-mortem appearances.*—The mucous membrane of the stomach and intestines is inflamed and thickened, in some places eroded, and in a case quoted by Orfila, the small intestine was perforated. If the patient has not survived long, the mucus of the intestines will be found tinged of a green

(*d*) Journ. de Chimie, Chevallier, 1854. (*e*) Med. Gaz. vol. xviii. p. 742.
(*f*) Quoted by Beck.
(*ff*) In a very instructive article by Dr. Hönerkopf (Casper's Vierteljahr. viii. 212), it is maintained that sulphate of copper cannot in a strict sense be considered a poison. He refers to numerous cases in which this medicine was taken in large or repeated doses without harm, and usually with benefit, and shows that the greater number of symptoms ascribed to it are not really observed.

color. No other changes worthy of note have been observed. A fatal case is reported by Mr. Cockburn,(*g*) in a woman who swallowed two or three drachms of sulphate of iron, with seven of sulphate of copper. The symptoms were such as are described above, and death took place in about twenty-four hours. Yet there was no disorganization whatever of the mucous coat of the stomach and intestine.

The salts of copper which are stated most frequently to give rise to accidents are the *sulphate* (which is sometimes used for the purpose of procuring abortion), the *subchloride*, the *subacetate* or verdigris, and the *arsenite*, or Scheele's green, which last is elsewhere considered.(*gg*) It is seldom that the case can be so doubtful as to render a chemical investigation necessary, except when one or more persons having been taken ill after partaking of a meal, it is suspected that some poison may have been intentionally introduced into their food or drink.

§ 650. The use of copper utensils in the preparation of food has occasionally given rise to serious consequences, on account of the impregnation of the food by some poisonous salt of this metal. If the vessels are bright and clean, very little harm can possibly result from this cause, if ordinary articles of food are boiled in them and not allowed to remain in them after they become cool. Saline, acid, or oily matters act, however, upon copper vessels, and if these are not clean, having been already exposed to moist air and become covered with the carbonate, the food may be impregnated with this poisonous salt, in sufficient quantity to produce alarming symptoms. Such will be especially the case if articles of the kind have been allowed to remain in the vessels to cool. It need hardly be stated that tinning the vessels is the only certain mode of preventing such effects.

There can be little doubt, we think, that the frequency of accidents from this cause is much exaggerated, and that in many cases the sudden illness which is mistaken for the symptoms of copper poisoning, is really due to the unwholesome nature of the food eaten, or to other causes. We are led to this belief not only from a consideration of the extremely small quantity of copper that in most cases can be dissolved, but also from the reflection that unwholesome food is capable of giving rise to a set of symptoms very nearly similar to those produced by copper, and finally, from the fact that in several cases of suspected poisoning by copper this metal could not be detected, by chemical analysis, in portions of the food used.

Prof. Langenbeck, of Göttingen, reported an instance of the poisoning of thirty-one persons, who had eaten a portion of beef sausage. This sausage meat had been fried in lard which had stood for two days in a badly tinned copper vessel, and was said to have become green in consequence. The poisoning was therefore attributed to copper. Dr. Paasch, in order to estimate the amount which each person in this instance must have taken, makes the following calculation. He assumes as barely possible that one scruple of metallic copper could have been dissolved by means of the fatty acids existing in the lard. This amount would correspond with twenty-five grains of oxide of cop-

(*g*) Lancet, Aug. 1856, p. 248.

(*gg*) Vid. Arsenic.

per, or fifty-seven and a half grains of anhydrous, or sixty-three grains of crystallized acetate of copper. Supposing that the whole of this had been taken up by the food, and entirely consumed, each person would have swallowed *two* grains of verdigris.(*h*) That so small an amount should be capable of producing alarming symptoms of poisoning is hardly possible, when we reflect how much larger doses of this, and other equally poisonous salts of copper, have been given without harm, in medical practice. Gerbier is said to have given the subacetate in doses amounting to twenty and even thirty grains in the twenty-four hours, and Solier de la Romillais ten to twelve grains a day.(*i*) The sulphate of copper is frequently given in doses of fifteen grains at a time, for the purpose of procuring emesis, in narcotic poisoning. Richmond gave as much as a scruple of carbonate of copper daily, to patients suffering with obstinate neuralgic affections, and Key, for the same purpose, administered as much as half an ounce daily, divided into three doses, continuing the treatment for a fortnight, with no other result than the cure of the disease.(*j*) Pereira says that he administered six grains of the sulphate of copper thrice a day for several weeks, in an old dysentery, without any other obvious effect than slight nausea and amelioration of the disease for which it was given. If the symptoms arising from the use of unwholesome food, such as sausages, old cheese and the like, be now compared with those which are ascribed to poisoning by copper, a very great similarity will be found between them.(*k*) Dr. Paasch relates instances in which the conviction was so strong that the symptoms of poisoning must have been due to a salt of copper, that a chemical investigation of the food was undertaken, which resulted, however, in the fact that not a trace of copper could be discovered.(*l*) Dr. Taylor, in his work on poisons, states that he was required to examine the following case: "In an extensive poor-law union, a number of the paupers had been seized with diarrhœa and dysentery, and several of them died. There was no apparent cause for this sickness and mortality; and it was suspected that the soup, which was daily prepared in large copper boilers, might have become impregnated with the metal, and have given rise to the symptoms, although these were scarcely indicative of irritant poisoning. I ascertained that the copper vessels were cleaned out daily, that the soup was made with salt and other vegetables, but was poured into other vessels to become cool." The soup, however, gave no trace of copper, by the iron test, was unaffected by a current of sulphuretted hydrogen gas, and the incinerated residue, after evaporation and calcining, gave no sign of the existence of copper to any of the tests.

While these considerations throw doubts upon the frequency of poisoning by food impregnated with copper, from the use of cooking utensils of this material, they do not, of course, destroy the well-attested fact of its occasional occurrence. It appears evident, however, that the slightest attention to clean-

(*h*) Casper's Vierteljahrschrift, Jan. 1852.
(*i*) Guersent, Dict. des Sci. Méd. art. Cancer.
(*j*) Dict. de Méd. art. Cuivre.
(*k*) Vid. Poisonous Food. (*l*) Loc. cit.

liness in the keeping of such articles is all that is necessary to secure immunity from danger.

The use of verdigris or other salts of copper for the coloring of confectionery or of other edible articles is manifestly a very pernicious practice. A highly interesting case, in which a whole family was poisoned, and two of its members died, from the use of vegetables thus colored, is reported by Kramer.(*m*) Dr. Percival found a strong impregnation of copper in pickled samphire, of which a young lady ate one morning a considerable quantity, and which proved fatal in nine days. Dr. Falconer once detected so large a quantity in some pickled cucumbers, bought at a great London grocer's, that it was deposited on a plate of iron, and imparted its peculiar taste and smell to the pickles. It seems, indeed, to have been at one time the custom to make a point of adulterating pickles with copper; for in many old cookery-books the cook is told to make her pickles in a copper pan, or to put some half-pence among the pickles, to give them a fine green color.(*n*) Many of the cases of poisoning by confectionery are due to the arsenite of copper, or Scheele's green, which we have elsewhere treated of.(*o*)

§ 651. Numerous cases are related in which *copper coins* have been swallowed, with the symptoms of copper poisoning resulting. On the other hand, a case is mentioned by Dr. Jackson, of Boston, in which a half-cent swallowed by a child produced nausea and vomiting, another by Dr. Budd and others,(*p*) and another by Dr. Hartshorne, in which a boy five years old died with all the symptoms of poisoning by copper, just two years after having swallowed a brass button.(*q*) A curious case is related by Deutsch, of a boy six years old, who swallowed a number of small copper coins. His medical attendant prescribed vinegar and other organic acids! In consequence of this singular treatment, he was seized with alarming symptoms, violent colic, and vomiting and purging of greenish-colored mucus. Finally he was enabled to throw up the coins by means of an emetic of ipecacuanha, but recovered very slowly from the effects of the poison.(*r*) A curious question might well arise in such a case as this. Metallic copper is usually acknowledged to be not poisonous; the poisonous salt, viz., verdigris, was here formed in the stomach by the administration of vinegar. *Q.* Was the poison *administered?*

§ 652. 3d. *Chemical examination.*—The salts of the oxide of copper may be made to yield metallic copper when heated with carbonate of soda upon charcoal before the blowpipe. In this way very minute traces of copper can be detected. The *ferrocyanide of potassium* produces, even in very dilute solutions, a dark purple-red precipitate of ferrocyanide of copper. *Ammonia* precipitates a pale-blue or greenish salt, which, in excess of the reagent, is dissolved, and acquires a beautiful azure-blue color. When the quantity of copper is very small, this color is only perceived by looking through a considerable body of the fluid. *Hydrosulphuric acid* precipitates the sulphuret of copper, of a black or chocolate-brown color. *Iron* will throw down copper

(*m*) Canstatt's Jahresbericht, für 1851, Bd. iv. S. 269.
(*n*) Christison, p. 352.
(*o*) Vid. Arsenite of Copper.
(*p*) Vid. Beck.
(*q*) Taylor, Am. ed. p. 112.
(*r*) Canstatt, 1851, Bd. iv. 269.

from its solutions, in the metallic state. If a bright iron rod be immersed in a neutral or slightly acid solution of a salt of copper, it will soon become coated with copper. So if a solution supposed to contain copper is placed in a platina capsule, and acidulated with sulphuric acid, copper, if present, will be deposited in a metallic form whenever a piece of zinc is brought into contact with the surface of the capsule. This test is peculiarly applicable to liquids derived from organic mixtures.

In *organic mixtures* it may usually be separated as a sulphuret, after previous dilution and filtration. The precipitate should be carefully collected, dried, and then boiled with a little nitric acid to convert the sulphuret into the sulphate. This liquid will acquire a rich blue color, and may then be subjected to the tests above mentioned. These processes will generally suffice for all cases in which the copper is not so excessively minute in quantity that it may become a question whether, if discovered, it is not due to some accidental impregnation of the reagents, or of the animal tissues. With reference to the latter point, it may be stated that Orfila has detected traces of copper in the bodies of animals not poisoned by any of its preparations, and Wackenroder has obtained it from human blood. It has also been found in coffee, wheat, and flour, by M. Sarzeau and others.(*s*) It is therefore unnecessary, for medico-legal purposes, to push the investigation any further, if the above-mentioned processes yield no evidence of the presence of the suspected poison.

XVI. *Tartrate of Antimony and Potassa.* (Tartar Emetic.)

§ 653. 1st. *Symptoms.*—This salt is capable of producing violent and alarming symptoms, and occasionally also fatal effects. Its immediate action upon the stomach appears to be irritant, since it produces a burning pain in the stomach, excessive vomiting, and diarrhœa. The large doses which have been tolerated in some febrile affections, such as pneumonia, rheumatism, and mania-à-potu, have thrown some doubt upon its irritant properties, and its speedy rejection from the stomach in other cases defeats, in a measure, both its local and constitutional poisonous effects.

The phenomena of acute poisoning by this agent may be thus described: The patient is attacked with pain in the stomach, followed by incessant retching, præcordial cramps, and burning heat, distension of the epigastrium, severe colic, watery and frequent stools, dryness of the throat, difficult deglutition, an unpleasant metallic taste in the mouth, and sometimes a copious discharge of saliva. The muscles of the neck, jaws, abdomen, and extremities are more or less rigid,(*ss*) and sometimes there is active delirium. Generally the skin is pale and cool, and covered with clammy perspiration; there is complete prostration of the strength, and sometimes repeated fainting or prolonged insensibility; the pulse is small, weak, and contracted, and after being at first frequent, it falls, perhaps, to thirty-four in the minute, and afterwards becomes

(*s*) Vid. Bley's Archiv für Pharmacie, Oct. 1853; also Christison on Poisons, Am. ed. p. 356.

(*ss*) Elliotson, Times and Gaz. July, 1856, p. 6.

rapid, thready, and almost imperceptible. In this condition death may take place.

The amount requisite to endanger life is not accurately known, although a case is related by Dr. Beck, in which fifteen grains of tartar emetic killed a child a few weeks old, and in a case reported by Mr. Hartley, ten grains killed a child in a few hours. In several of the fatal cases collected by Dr. Beck, the dose did not exceed a quarter of a grain, but the patients were already weakened by disease. Two grains have proved fatal to an adult.(*t*) Dr. Pereira refers to a case in which death ensued in four days after forty grains had been swallowed. A case is related in which four grains nearly proved fatal. Violent pain in the abdomen, vomiting and purging took place, and were followed by convulsions: the man became speechless, no pulse could be perceived, and the skin was quite cold; in short it was supposed he was dead. Stimulating frictions and cataplasms were employed, and he slowly recovered in about fourteen days.(*tt*) An Italian courier died in eleven hours after swallowing, by mistake, *one* drachm of tartar emetic.(*u*) In a case related by Dr. McCreery, U. S. N., a physician took, through a mistake of the apothecary, half an ounce of tartar emetic. In little more than half an hour he experienced nausea, which was followed by distressing vomiting and purging, with most violent cramps of the legs, and slighter ones of the wrists. Copious draughts of green tea, large doses of tannin, and other appropriate remedies were used, which did not, however, immediately mitigate the symptoms. He remained very much prostrated, but recovered in a few days.(*v*) In a case observed by Dr. J. T. Gleaves, of Tennessee, where a tablespoonful was taken, these symptoms ensued, but reaction was brought about in seven hours. On the third day the fauces were covered with pustules, and on the following day the skin also. The patient recovered.(*w*) A case is related by Deutsch, in which a woman, who took by mistake a scruple of tartar emetic, was brought exceedingly low by its violent action, and died in the course of a year in consequence of its irritant effects upon the intestinal canal.(*x*) From a tabular view of thirty-seven cases of acute poisoning by tartar emetic collected by Dr. Taylor,(*xx*) it appears that sixteen proved fatal. Boudet observed local irritant effects upon the fauces twenty-six times out of one hundred and forty-four cases of pneumonia treated with tartar emetic.(*y*) Difficulty of swallowing and copious perspiration have also been frequently observed. Applied to the skin in the form of ointment, it produces a crop of painful pustules, which in weakly subjects may occasionally give rise to ulceration. It may cause nausea and vomiting even when thus used.

§ 654. 2d. *Post-mortem appearances.*—These have been observed in but few cases. In those cases before referred to as having been seen by Mr.

(*t*) Archives Gén. xxvi. 262.
(*tt*) Taylor on Poisons, p. 389. See also two cases in the Union Médicale, 1852, No. 61, p. 245.
(*u*) Monthly Journ. May, 1850.
(*v*) Am. Journ. Med Sci. Jan. 1853, p. 131.
(*w*) Am. Journ. Med. Sci. vol. xv. from West. Journ. of Med. and Surgery, Jan. 1848.
(*x*) Canstatt's Jahresbericht für 1851, Bd. iv. p. 270.
(*xx*) Guy's Hospital Reports, 3d ser. iii. 409.
(*y*) Canstatt, 1853, Bd. v. p. 148.

Hartley, in which two children of the ages respectively of five and three years, swallowed each ten grains of tartar emetic, the following appearances were noted. The bodies were examined between four and five days after death. "In that of the boy there was effusion of serum in the right pleura; the lower lobe of the right lung posteriorly was redder than natural, and the peritoneum was injected from recent inflammation. The mucous membrane of the duodenum was inflamed and covered with a whitish-yellow viscid secretion; this was observed throughout the intestinal canal, although the color was of a deeper color in the colon and rectum; there was no ulceration. The peritoneal coat of the stomach was inflamed. The mucous membrane of this organ was much inflamed, especially about the larger curvature and at the cardiac orifice; there was no ulceration. The contents (about two ounces and a half of a dark grumous fluid, having a slightly acid reaction) were very adherent to it; and in one place there was a patch of lymph. The tests used did not indicate the presence of antimony. With regard to other appearances, the tongue was covered with a white fur and appeared soddened; the fauces were not inflamed; the trachea and œsophagus had a natural appearance. On opening the cranium, the dura mater was found very vascular; the longitudinal sinus contained a coagulum of lymph, and but very little blood. The vessels of the surface of the brain were very much injected with dark blood, the whole surface having a deep purple color. Every portion of the brain, when cut, presented many bloody points. The cerebellum and medulla oblongata were also extremely vascular; there was no effusion in the ventricles or at the base of the brain. In the body of the girl the morbid appearances were similar; there were also patches resembling the eruption of scarlatina on the arms, legs, and neck. The arachnoid membrane was more opaque than usual; and on the mucous membrane of the stomach, where the inflammation was greatest, were two or three white spots, each about the size of a split pea, which appeared to be the commencement of ulceration."(*z*) The body of a woman who died in seven hours after taking an unknown quantity of tartar emetic, and was examined thirty-nine hours afterwards, presented no lesions whatever in the stomach or elsewhere.(*a*) But when life is protracted after the ingestion of the poison the changes will usually be found like those in the two cases above described. In other words, an aphthous condition of the mouth, fauces, and œsophagus; softening, inflammation, or ulceration of the stomach, and to some extent, also, of the intestines; and generally a dark color and a liquid state of the blood.

Chronic poisoning.—The poisonous effects of tartar emetic when used in small doses for a long time, have been carefully studied by Mayerhoffer(*b*) and by Dr. Taylor. The latter toxicologist renders it probable that the secret poisons which from time to time have produced so many victims, and have rendered so many names infamous in history, were antimonial. The following description of chronic poisoning by tartar emetic is furnished by Dr. Taylor.(*c*)

(*z*) Taylor, from Lancet, Ap. 25, 1846, p. 460. See also a case by Mr. Beale, Lancet, Jan. 21, 1854.

(*a*) C. Ellis, Bost. Journ. Dec. 1856, p. 400.

(*b*) Beiträge zur Heilkunde, ii. 372. (*c*) Guy's Hosp. Reports, 3d ser. iii. 388.

If tartarized antimony be given in small but increasing doses for a long period, there is uneasiness, nausea, and retching, followed by vomiting; the stools are pasty, and diarrhœa, attended with thin bilious and mucous discharges, gradually sets in; the abdomen at the same time is distended and tense. The voidance of the urine is more frequent and violent. The region of the stomach is tender and painful; that of the liver appears fuller, and is sensitive to the touch. There are griping pains in the bowels, with stiffness and pains in the lower limbs. The warmth of the skin is at first increased; there is itching or irritation with alternation of heat and cold. The appetite is suppressed, and when any substance is eaten there is nausea, with an immediate disposition to vomit. A roughness or rawness is perceived in the throat, with painful swallowing; the tongue is covered with a dirty mucus, and the mouth is clammy. The head feels full and heavy. At a still later period the feces contain much mucus, and are frequently strongly colored with bile. The blood gradually loses its fibrin, and becomes almost liquid, and dark-colored. It contains an increased proportion of fluid and saline matters, with traces of antimony. If the use of the substance be longer continued, there is slowness, with a loss of power in the heart and pulse; the breathing is difficult, the complexion dusky; there is complete depression of the vital powers, with great debility and emaciation; the legs become heavy and stiff, as if paralyzed, and death may follow as a result of the noxious impression produced on the more important organs of the body. Small doses act more powerfully when dissolved, than when administered in the form of powder. In addition to the above symptoms, the vomiting, from which the patient suffers, is either attended or followed by the distension of the abdomen, and flatulence; liquid bilious motions, with colicky pains, paleness and sunken appearance of the countenance; cold perspiration, giddiness, great prostration of strength, incapability on the part of the patient of raising himself to the erect position, disposition to rest and sleep, loss of strength, fulness and frequency of the pulse, faintings, in many cases a feeling of coldness, accompanied with a heat or flushing of some parts of the body, *e. g.*, the face. If there is a recovery from this condition, pain in the stomach is felt for a long time afterwards, and inflammation of the stomach to a greater or less degree is set up. After the vomiting there remains, for a longer or shorter period, an unwillingness to take food, and nausea in partaking of it. Among other effects, the perspiration and the urinary secretion are observed to be greatly increased.

If the use of tartarized antimony be continued in increasing doses when the poison has been already carried into the blood, the secretory organs are more strongly stimulated, and absorption as well as secretion, especially of the serous liquids, is greatly augmented.

If vomiting does not take place after large doses, the following symptoms of poisoning are observed: metallic taste, nausea, retching, and bilious vomiting; burning pain in the throat, gullet, and stomach; spasms of the jaw and neck; pain and flatulent distension of the abdomen, with frequent watery motions; coldness, pallor, and clamminess of the skin, sometimes great heat of skin; difficult breathing, painful sobbing, giddiness, stupefaction, loss of consciousness, delirium, spasms of the arms and legs, with complete prostration of strength.

Death appears to result from the impression produced on the nerves of motion, as well as on the nerves of the lungs and heart; leading either to asphyxia or paralysis.

§ 655. 3d. *Chemical examination.*—It is proper to bear in mind, as Dr. Taylor remarks, that antimony given in a large dose, or repeatedly in small doses, is rapidly absorbed and eliminated chiefly by the urine. It is at the same time deposited in a greater or less quantity in the tissues and organs. Under recent administration, if in sufficient quantity, it may be found in the stomach and bowels, and little or none may be present in the liver. After a variable time it disappears from the stomach and bowels, although it may be present in the feces, while the liver, kidneys, and spleen, may contain it in large, and the other organs in small quantity. In certain diseased states of the system, the complete elimination of the metal may require a period of twenty-five or thirty days or longer; but in a healthy subject, to whom only ordinary medicinal doses have been given, the antimony is quickly expelled.

The double tartrate of antimony and potassa (tartar emetic) is readily soluble in water, even when it contains uncombined cream of tartar.

1. A crystal or two dropped into a solution of *hydrosulphuric acid* will be covered with an orange-colored deposit of the tersulphide of antimony. This is readily soluble in potassa and in the sulphide of ammonium, sparingly so in ammonia, and insoluble in bicarbonate of ammonia.

2. Exposed to the reducing flame of the blowpipe with carbonate of soda, white incrustations and globules of antimony are obtained, known by the needle-shaped crystals with which they are beset, their metallic brilliancy and brittleness.

3. *Nitric acid* throws down from the solution a white precipitate, which is soluble in an excess of the reagent, and also in tartaric acid. It is also soluble in a solution of potassa.

4. Ferrocyanide of potassium causes no precipitate.

5. If the solution be introduced into Marsh's apparatus and the gas evolved and inflamed, spots may be obtained upon porcelain which are blacker and less brilliant than those of arsenic, and which do not undergo any change by dropping upon them a concentrated alkaline solution of hypochlorite of soda. Nitric acid converts this sublimate into the white oxide of antimony; a drop of nitro-muriatic acid dissolves it completely, and the solution, carefully freed by evaporation from the excess of acid, gives with hydrosulphuric acid an orange-red precipitate. With sulphide of ammonium the precipitate is of an orange color, and is soluble in an excess of the reagent. A metallic antimonial ring may also be obtained by applying the flame of a spirit-lamp to the tube while the stream of antimoniuretted hydrogen gas is passing through it. The metallic globules of antimony, recognizable by a lens, may be obtained from the ring by a sufficient increase of heat. No odor of garlic is perceived in this operation. All vegetable substances containing tannin decompose the salts of antimony.

§ 656. *Detection of antimony in organic liquids.*—No better process has been devised than that recommended by Dr. Turner. "Add to the suspected liquid a little muriatic and tartaric acid; the first with a view of coagulating

any animal principles which may be present, the latter in order to dissolve all other precipitates formed with tartar emetic except the sulphuret. Filter the resulting liquid, and transmit sulphuretted hydrogen through it. Collect, wash and dry, the precipitate, and introduce it into a horizontal tube connected with a vessel in which hydrogen is generated. Transmit the gas freely till all risk of an explosion is passed, and apply the flame of a spirit-lamp to the part of the tube containing the precipitate. The metal is reduced, remaining in the place of the sulphuret if the stream of gas is slow, but undergoing a spurious sublimation if it is rapid, and collecting on the sides of the tube in the form of detached crystals, or of a crystalline crust. The metal is apt to be concealed by the presence of animal or vegetable matter. In this case it should be heated in an open tube, when it oxidates and sublimes as a glimmering white powder, which, unlike arsenic, is not crystalline; or the antimony may be dissolved by nitric acid, the resulting solution neutralized, and the orange-red sulphuret be again thrown down by a stream of sulphuretted hydrogen."(*d*) Or the sulphuret, when dried, may be dissolved by boiling hydrochloric acid. A dense yellowish-white precipitate of oxychloride of antimony falls down, on adding this solution to a large quantity of water. Although a white precipitate is produced also by the salts of bismuth when added to water, the color produced in the liquid by sulphuretted hydrogen at once will distinguish the two bases; bismuth yields a black, and antimony an orange-red precipitate.

If an examination of the *tissues* is required for the purpose of detecting absorbed antimony, the liver should be selected as the organ most likely to contain it. Orfila has been able to detect antimony in the tissues by the employment of Marsh's apparatus. The organ supposed to contain the antimony should first be cut into small fragments and dried, and these added gradually to boiling nitric acid until dissolved. This liquid should then be evaporated to dryness and carbonized, and the ash boiled in muriatic acid, to which a small quantity of nitric acid is added. The antimony is thus converted into the chloride which may be introduced into Marsh's apparatus, or subjected to the tests already described. M. Lassaigne states that in certain cases the presence of antimony contained in organized matter is sometimes very faintly, or not at all revealed by Marsh's apparatus.(*e*) He has proved this to be the case by subjecting the residue to a new test. His plan of procedure is the following: fifty grammes of the suspected liver were burned in a new porcelain crucible, and the resulting carbon calcined and kept for several hours at a cherry-red heat. The ash, collected and reduced to a fine powder, was successively treated by weak nitric acid, and afterwards by pure hydrochloric acid. The last solution, diluted with a weak solution of tartaric acid, was filtered and brought into contact with three times its volume of hydrosulphuric acid. This reagent immediately rendered the liquid turbid, and threw down an orange-yellowish flaky precipitate of *hydrated sulphuret of antimony*. Its color and volume compared with those produced in a standard solution of tartar emetic, rendered it possible to estimate the proportion of this salt con-

(*d*) Guy's For. Med. p. 499.
(*e*) Annales D'Hygiène, Jan. 1859, p. 192.

tained in the hepatic tissue submitted to examination. Antimony may be separated from liquid organic mixtures by Reinsch's process also, viz., by boiling with muriatic acid and water in the presence of copper. This metal acquires a bluish-gray color from the disposition of metallic antimony. The grounds of distinction between this and the deposit made by arsenic under similar circumstances have already been more appropriately given in the chapter upon the latter poison.

§ 657. It is evident that the presence of antimony, either in the stomach or absorbed in the other organs, may be due to the proper medicinal administration of the salt. The forms under which it is given, and the occasions on which it is prescribed, are numerous, and it is not unfrequently administered in cases of poisoning with other substances, without a thought of the complications it may, in case of a death, place in the way of the chemist. Hence, unless the possibility of its introduction into the system under any of these circumstances be fully excluded, the object of the medico-legal inquiry may be entirely frustrated.

§ 658. 4th. *Chloride of antimony.* (Butter of antimony.)—This substance is highly corrosive in its action. The following case will be sufficient to illustrate its effects. "An army surgeon swallowed, for the purpose of suicide, from two to three ounces, by measure, of chloride of antimony. About an hour afterwards he was seen by Mr. Mann. There was entire prostration of strength, with coldness of the skin and incessant attempts to vomit. The most excruciating griping pains were felt in the abdomen, and there was a frequent desire to evacuate the bowels, but nothing was passed. In the course of a few hours reaction took place, the pain subsided, and the pulse rose to 120. There was now a strong disposition to sleep, so that he appeared as if laboring under the effects of a narcotic poison. In this state he continued until he died, ten hours and a half after he had swallowed the poison. On inspection, the interior of the alimentary canal, from the mouth downwards to the jejunum, presented a black appearance, as if the parts had been charred. In general, there was no mucous membrane remaining either on the stomach or elsewhere, only a flocculent substance, which could be easily scraped off with the back of a scalpel, leaving the submucous tissues and the peritoneal coat. All these parts were so soft that they could be easily torn with the fingers.(*f*) The symptoms have been similar in some cases which recovered. Poisoning with this substance is, however, very rare, and mostly happens from mistake, or it is taken with suicidal intentions. The tests are the same as for tartar emetic.

XVII. *Salts of Zinc.*

§ 659. 1st. *Oxide of zinc* has been of late years used as a substitute for white lead, with the view of avoiding the dangerous effects of the latter on the workmen. It has been supposed to be innocuous, and this idea appeared to be confirmed by some experiments made by M. Flandin. He rubbed animals over with ointments of oxide of zinc, of carbonate of lead, and sulphate of

(*f*) Taylor on Poisons, Am. ed. p. 397.

lead; the last two were found always to produce poisonous effects, but the animals rubbed with the ointment of oxide of zinc continued to enjoy their usual health. A case has, however, been recorded by Dr. Bouvier, of the Hôpital Beaujon, at Paris, in which a laborer who had been employed for fifteen days in barrelling oxide of zinc, and who in other ways had handled this substance, and breathed an atmosphere loaded with its powder, was attacked with vomiting, colic, and constipation. These symptoms persisted, and increased in intensity so much that he rolled on the floor in agony. The vomited matters were bilious, he rejected his food almost immediately after swallowing it, and he had been constipated for five days. From the whole history of the case, it was considered to be one of genuine zinc colic. He was cured by the remedies usually employed for painters' colic. The particles adhering to his body were examined, and found to consist of oxide of zinc.(*g*) Landouzy and Maumené have seen workmen, who were obliged to inhale an atmosphere loaded with particles of oxide of zinc, affected with inflammation of the mouth and throat, salivation, general distress, colic, and diarrhœa, or obstinate constipation.(*h*)

Cases of zinc-poisoning, arising from the inhalation of the oxide of zinc, have also been observed among the workmen engaged in twisting and beating the iron wires galvanized with zinc used for securing champagne corks. Four had symptoms of general depression, with sore throat, swelling and ulceration of the tonsils, salivation, fetid breath, colic, and diarrhœa. In one case there was colic and obstinate constipation. These symptoms subsided readily on abandoning the occupation, and did not return when the work-people resumed their work, with wires better prepared, and free from loose oxide or carbonate of zinc.(*i*) M. Blandet has described as effects of breathing the vapors of zinc fused at the temperature required to melt copper, chilliness, trembling, headache, fainting, vomiting, buzzing in the ears, contusive muscular pains, &c.(*j*)

§ 660. 2d. *Sulphate of zinc.*—The prompt emetic action of sulphate of zinc (white vitriol) is the cause of its seldom producing serious effects. The dose usually administered with a view to its emetic operation is from fifteen grains to half a drachm, and unpleasant results have seldom been witnessed from this amount. Dr. Babington once gave thirty-six grains three times a day, for several weeks, without any sickness or other untoward effect being produced; but cases in which the stomach would tolerate such doses as these must be very rare.(*k*) That it is capable of acting violently as an irritant poison, there can be no doubt. Dr. Christison quotes a few cases which sufficiently prove this. The best-marked cases are, however, those which have been reported as occurring at Pavia. The first case occurred in the person of a strong woman, who took, by mistake for Epsom salts, a solution of an ounce and a half of sulphate of zinc. She instantly vomited, and then became affected with almost incessant retching and purging for half an hour, which continued afterwards, at short

(*g*) Am. Journ. Med. Sci. Oct. 1850, from the Comptes Rendus.
(*h*) Briand, Méd. Lég. 6ème éd. p. 433.
(*i*) Am. Journ. Med. Sci. Oct. 1850, from Monthly Journ. Aug. 1850.
(*j*) Journ. de Méd. 1845, p. 76.
(*k*) Guy's Hosp. Rep. vol. xii. p. 17.

intervals, for three hours, and then gradually diminished. The pulse was frequent and small, and extreme prostration existed, accompanied with distressing restlessness and anxiety; the temperature of the skin was diminished; great pain in the abdomen, limbs, &c., existed, as well as a sense of burning in the throat and stomach. She died thirteen and a half hours after taking the poison, retaining her intellectual faculties to the last. On examination, forty hours after death, the following were the chief appearances observed: great lividity of the skin, congestion of the brain and its membranes, congestion of the lungs, flaccidity of the heart, the inner surface of the stomach covered with a yellowish pultaceous matter, on the removal of which a uniform yellow, ochrous color was observed, except towards the great curvature, where it became reddish; a gelatiniform ramollissement of the mucous membrane prevailed, exposing in some parts the submucous cellular tissue. The small intestines were somewhat injected, and contained yellowish matters. In the *second* case a similar dose was taken, followed by nearly the same symptoms, but the patient recovered. In the *third* case a quarter of an ounce was taken, which produced the same symptoms of irritant poisoning, ending in recovery. In the *fourth* case, of which little account is furnished, but which proved fatal, it is stated that "two drachms of sulphate of zinc were detected in the liver and blood, the fluids of the alimentary canal furnishing but little."(*l*)

One case, in which the sulphate of zinc was supposed to have been given with criminal intentions, became the subject of judicial inquiry in France. An old man died somewhat suddenly, having suffered from severe pain and great heat in the chest and abdomen, with violent vomiting and purging. He was not seen by a physician. On inspection, the stomach and bowels were found highly inflamed, and sulphate of zinc was found in the contents of the stomach, and detected in the tissues. The body of a woman who had died two months previously, was also disinterred, and sulphate of zinc found in the viscera.(*m*) Violent enteritis was also observed in a case reported by Krauss.(*n*) Dr. Gibb has reported the case of a lady who took by mistake about sixty-seven grains of sulphate of zinc in solution. She recovered, and her more serious symptoms were probably owing to two grains of tartar emetic ignorantly administered to her.(*o*) A case has been recorded by Dr. Ogle, of a drunkard who attempted to commit suicide by cutting his throat. It was believed, but upon no direct evidence, that he had been in the habit of swallowing a strong lotion which he was using for inflamed eyes. The immediate cause of death was not determined, but the reporter states that an examination of the body revealed the presence of sulphate of zinc in the stomach, a white and shrivelled appearance of the mouth and fauces, a condensed, indurated, and tripe-like appearance of the lining membrane of the stomach, and to some degree of the small intestine, and an unusually contracted state of the colon and rectum.(*p*) Two more recent cases are recorded by Dr. Niemann.(*q*) In the first, a sickly man died with violent gastric pains and vomiting, after a

(*l*) Brit. and For. Med.-Chir. Rev. April, 1849.
(*m*) Journ. de Chimie Méd. 1845, p. 529.
(*n*) Canstatt Jahresbericht, 1853.
(*o*) Lancet, May, 1850, p. 540.
(*p*) Lancet, Aug. 1859, p. 210.
(*q*) Henke's Zeitschrift, lxxviii. 219.

dose administered to him by his wife, and sulphate of zinc was found upon chemical analysis of the contents of the stomach. The second case was one of suicide. In neither was the quantity of the poison determined.

§ 661. *Chemical examination.*—Sulphate of zinc is a white, crystalline substance, bearing considerable resemblance to sulphate of magnesia, readily soluble in water, and having a disagreeable styptic taste. From its solution, if pure, the oxide is thrown down by the *caustic alkalies*, in the form of a white hydrate, which is easily soluble in an excess of the precipitant. The *sulphide of ammonium* gives a white milky precipitate, and also sulphuretted hydrogen, provided there is no free acid in the solution. *Carbonate of ammonia* precipitates carbonate of zinc, also white, which is readily dissolved in an excess of the precipitant. *Ferrocyanide of potassium* also causes a white precipitate. The *sulphide of ammonium* is the most characteristic and unobjectionable of these tests, for zinc is the only metal, with the exception of aluminum, the salts of which are thrown down white by it.(*r*) Having discovered the base, the presence of sulphuric acid in the combination may be easily detected, by testing with chloride of barium.

The following is the process recommended by Christison, for the detection of sulphate of zinc in *organic mixtures*. The mixture having been strained through gauze, is to be acidulated with acetic acid, and filtered through paper. The acetic acid dissolves any oxide of zinc that may have been thrown down in union with animal matter. The filtered fluid is then to be evaporated to a convenient extent, and treated, when cool, with sulphuretted hydrogen gas; upon which, a grayish or white milkiness, or precipitate, will be formed. The excess of gas must now be expelled by boiling, and the precipitate washed by the process of subsidence and effusion, and collected on a filter. It is then to be dried, and heated to redness in a tube. When it has cooled, it is to be acted on by strong nitric acid, which dissolves the zinc, and leaves the sulphur. The nitrous solution should next be diluted and neutralized with carbonate of ammonia;(*s*) after which, the liquid tests, formerly mentioned, will act characteristically. The effect of carbonate of ammonia and that of heat on the carbonate of zinc, which is thrown down, ought to be particularly relied on.

§ 662. *Chloride of zinc.*—Several cases of poisoning by a solution of this salt, known by the name of "Sir Wm. Burnett's disinfecting fluid," have occurred in England and Canada. They prove that it is a highly corrosive poison. The symptoms observed have been violent; epigastric distress followed by vomiting, and attended with burning heat in the mouth and throat. In a case reported by Mr. Letheby, where a child, fifteen months old, was poisoned by it, prostration was extreme, and the child died comatose in ten hours. The body was examined twenty-two hours after death. The lips, mucous membrane of the mouth, fauces, and œsophagus, were white and opaque. The stomach felt hard and leathery, and contained a liquid like curds and whey. Its inner surface was corrugated, opaque, and tinged of a dark leaden hue; this appearance ceased abruptly at the pylorus. On digest-

(*r*) In the case of alumina, the precipitate is soluble by caustic potash; and in that of zinc by an excess of ammonia.

(*s*) Carbonate of soda is more suitable.

ing the stomach in an ounce of distilled water, the liquid obtained gave white precipitates with prussiate of potash, carbonate of soda, and sulphuretted hydrogen and acid nitrate of silver, no precipitate being obtained on the addition of a soluble salt of baryta. The presence of chloride of zinc was thus demonstrated. The author concludes, from some experiments, that the chloride of zinc is distinguished from the other salts of the metal by its quick and firm coagulating action on liquid albumen and on the delicate tissues of the body, and that its toxicological action is twofold, first as an irritant and caustic, and second, by a specific constitutional impression upon the nerves.(*t*) In the cases reported by Dr. Stratton, although death appeared imminent, the patients were saved by timely medical aid.(*u*)

Since the first edition of this work several fatal cases have occurred, some of which are referred to by Dr. Webb, in the account published by him of a case in which recovery took place after an ounce of the liquid had been swallowed.(*v*) A like quantity in another case, and in still another a pint of the solution were fatal. The symptoms observed in nearly all of the cases were intense burning pain in the epigastrium, extending afterwards to the rest of the abdomen; persistent vomiting first of the contents of the stomach and then of blood, with urgent thirst; a cold and pale surface, a failing and gradually extinct pulse, dilated pupils, cramps in the extremities, a husky and whispering voice, and death without a struggle or previous loss of consciousness. After death the body has been found unusually livid; the stomach extremely vascular and purplish, lined with tenacious mucus, and its mucous membrane more or less softened, corroded, and disintegrated in the cardiac half of the organ. The pyloric orifice is constricted, and corrugated, and its lining membrane may be dense and tough, and in color and consistence resemble wash leather. The duodenum partakes of the discoloration and softening observed in the stomach, and the same changes exist in some degree in the jejunum. The œsophagus is lined with tenacious mucus, or with patches of false membrane. It is remarkable that the mouth is seldom acted upon by the poison.(*w*)

Death may result after a considerable period from alterations produced in the stomach by the poison. A woman who had taken an ounce of Burnett's fluid, recovered from its immediate effects, but died in ten weeks from the inability of the stomach to retain food. On examination, the stomach near the pylorus was found so contracted as scarcely to admit a probe of the size of a crow's quill.(*x*)

XVIII. *Tin.*

§ 663. 1st. *Chloride of tin.*—This preparation needs little notice: it is an irritant poison, but has seldom given rise to accidents. An old man dried some wet cooking salt in a tin dish upon a stove, and then ate some meat and bread with which he had wiped the dish. He was seized with chilliness, violent pain in the stomach, and the abdomen became swelled, and tender upon

(*t*) Lancet, July 6, 1850. (*u*) Med. Exam. Feb. 1849.
(*v*) Times and Gaz. July, 1856, p. 59.
(*w*) For cases, see Lancet, Sept. 1857, p. 271; Beale's Archives, 1858, No. iii. p. 194.
(*x*) Markham, Times and Gaz. June, 1858, p. 595.

pressure. A febrile condition was soon set up; but the most striking symptom was salivation, with extreme fetor of the breath, and a grayish discoloration of the gums. They, as well as the tongue and inside of the cheeks, became covered with ulcers. By an antiphlogistic treatment, and gargles of chloride of lime, he was restored in a few days.(*m*)

XIX. *Silver. Gold. Platinum.*

§ 664. *Nitrate of silver.* (Lunar caustic.)—The appearance of this caustic is well known. Poisoning by it is not, however, of frequent occurrence. A patient at the Hôpital St. Louis, in Paris, recovered, after having swallowed an ounce in solution. The nitrate of silver was neutralized by the administration of common salt.(*n*) In a case reported by Krahmer a like quantity produced insensibility to tactile impressions, loss of consciousness, and convulsions. By the sixth day the patient had recovered.(*nn*) The nature of the poison can be readily detected by the black color which it communicates to organic matter.

The *terchloride of gold* is also a highly irritant poison, acting very much like corrosive sublimate. Cullerier, the nephew, has seen one-fifteenth of a grain excite, at the second dose, gastric irritation, dryness of the tongue, redness of the throat, colic, and diarrhœa.(*o*)

The *bichloride of platinum* is a powerful caustic poison. It is sometimes used, in medical practice, for the treatment of secondary syphilis.

XX. *Iron.*

§ 665. 1st. *Sulphate of iron.* (Copperas; Green vitriol.) (1.) *Symptoms.*—A case of supposed criminal poisoning with this substance is related by Dr. Christison. A girl, four years of age, and previously in good health, was attacked with violent vomiting and purging immediately after breakfasting on porridge, and died in the course of the afternoon of the same day. The porridge had a blue color, and it was proved that a woman in the house had purchased both this salt and the sulphate of copper. The body being disinterred, four months after death, the stomach was found soft, gelatinous, and of a uniform intense black color through the whole thickness of its parietes, and the whole alimentary canal lined with a thick layer of jet black mucus "from the pharynx down to the very anus." There was no evidence found of the presence of copper, but abundant proof was obtained of the presence of iron both in the textures of the stomach and the black mucus which lined it.(*p*) More recently, a case somewhat similar, has been observed by Orfila. It was that of a child, aged fifteen months, who died, after purging and vomiting a black fluid. On opening the body, ten days after burial, the stomach was filled with a greenish fluid, and the vessels of the lungs and brain were gorged with black blood. M. Orfila detected sulphate of iron,

(*m*) Memel. Deutsche. Klinik. No. xli. 1851.
(*n*) Am. Journ. 1840, p. 239.
(*nn*) Canstatt's Jahresbericht, 1846, p. 247.
(*o*) Pereira, Mat. Med.
(*p*) Ibid. p. 393.

in notable quantities, in the portions of the abdominal contents forwarded to him.

(2.) *Chemical analysis.*—It should not be forgotten, in making a chemical examination of the viscera, in cases of supposed poisoning with the salts of iron, that iron is a normal constituent of the body. Orfila says, that when these, or the salts of copper or lead, exist in the alimentary canal, as a consequence of poisoning, we have only to treat the canal by means of very dilute muriatic or acetic acid, at a moderate heat; these acids dissolving the metallic substances sought for, without attacking any portion of those metals that form part of the organization. To obtain these last, we must treat the viscera by more energetic agents, or by incineration.(*q*) The crystals of sulphate of iron are of a bluish green color, have a styptic taste, and are readily soluble in water. The base may be detected by the ferrocyanide of potassium (producing a greenish-blue precipitate), and the acid by the chloride of barium.

§ 666. 2d. *Chloride* (Muriate) *of iron.*—The medicinal tincture of this salt of iron has frequently given rise to serious and fatal accidents. The symptoms produced by it are very much like those of the corrosive acids, viz., heat, dryness, and swelling of the throat, with a burning pain in the stomach and in the course of the œsophagus, vomiting of blood, and inky evacuations. Its corrosive properties seem to be due to the presence in it of free hydrochloric acid. Dr. Christison relates a case, in which death occurred in about six weeks after an ounce and a half of the tincture had been swallowed. A case of recovery, after three ounces of the concentrated tincture had been swallowed, is reported by Sir William Murray.(*r*)

A gentleman, aged seventy-two, swallowed three ounces of it by mistake. He was found "tossing about in the utmost consternation and agony; his tongue was swelled, and protruded from the mouth; its skin was parched and peeling off it, while ropy mucus flowed from the mouth and nose; the eyes seemed starting from their sockets; the respiration was noisy and laborious, and suffocation seemed to be impending. During this time his hand was riveted to the region of the stomach, as the principal seat of pain; the palate and the interior of the mouth were burned, and presented a parboiled appearance." The acid was first neutralized by an alkaline mixture, and this treatment was followed by demulcents and laxatives. The gentleman rapidly recovered.(*s*) Several other cases of recovery from large doses are recorded, which it is not necessary to particularize.

Tests.—The iron may be detected by the blue precipitate with *ferrocyanide* of potassium, and the hydrochloric acid by the nitrate of silver.

§ 667. 3d. *Subnitrate of bismuth.*—A man subject to water-brash took two drachms of this preparation by mistake. He was immediately attacked with burning in the throat, vomiting, purging, cramps, and coldness of the limbs, his pulse became intermittent, and he had a constant metallic and nauseous taste. On the third day he had hiccough, laborious breathing, and swelling of the hands and face, and suppression of urine was then discovered to have

(*q*) Am. Journ. Med. Sci. Jan. 1853, p. 259.
(*r*) Ibid. July, 1849.
(*s*) Sir Wm. Murray, Dub. Med. Press, Feb. 1849.

existed from the first. On the fourth day, swelling and tension of the abdomen were added to the pre-existing symptoms; on the fifth day, salivation; on the sixth, delirium; on the seventh, swelling of the tongue and enormous enlargement of the abdomen; and, on the ninth, he expired. The tonsils, uvula, pharynx, and epiglottis were gangrenous, and inflammatory redness, with spots of gangrene, existed throughout the whole intestinal canal.(*t*) Sobernheim explains the poisonous effects in the above case and in one observed by himself, by supposing that the patients' stomachs contained bitartrate of potassa enough to convert the subnitrate into an acid nitrate of bismuth, which is stated to be an active irritant.(*tt*) Certain it is that pure subnitrate of bismuth is constantly given in unmeasured doses without any toxical effect whatever. It has been found that this preparation of bismuth is often so carelessly made, that the arsenic which is commonly found in bismuth has often not been previously excluded by the operation of roasting. M. Cornut recommends that it should be tested before being dispensed for medicinal purposes. Moisten half a drachm of the trisnitrate of bismuth with a sufficient quantity of *pure* sulphuric acid, evaporate to dryness in a small porcelain capsule, wash the residue with a little distilled water, filter, and put into a Marsh's apparatus.(*u*).

§ 668. 4th. *Bichromate of potash.*—This salt being extensively used in dyeing, has given rise, in several instances, to accidental poisoning. Locally applied, its action is irritant, causing, in the workmen who make use of it, troublesome sores and ulcerations upon the hands. Taken in poisonous doses internally, its action is highly irritant also, and death has taken place from it, with the symptoms usually attending the action of irritant poisons. Mr. Wilson, however, relates a case in which death was caused by it, without any vomiting or purging having occurred.(*v*) Several fatal cases have occurred in Baltimore. The following was communicated by Dr. Baer, to Professor Ducatel: A laborer, aged 35, on attempting to draw off from a refiner a solution, in the effort to exhaust the siphon by suction, received a small quantity of the solution into his mouth. His first impression was, that he had spit it out; but only a few minutes elapsed before he was seized with great heat in the throat and stomach, and violent vomiting of blood and mucus. The vomiting continued until just before his death, which occurred in five hours. On dissection, the mucous tissue of the stomach, duodenum, and about one-fifth of the jejunum, was found destroyed in patches. The remaining parts of it could be easily removed by the handle of the scalpel.(*w*) A boy, who swallowed about two ounces of bichromate of potash, was seized in half an hour with vomiting, and became almost totally insensible. He was pale and collapsed, the pupils were dilated and fixed, the pulse feeble, and there were cramps in the legs. An emetic of sulphate of zinc was given, and the stomach-pump used, until the pinkish color of the washings obtained by it had ceased. He had an attack of gastro-intestinal inflammation, from which he did not recover for four months.(*x*)

(*t*) Christison, quoted from Wibmer. (*tt*) Arzneimittellehre, 6te Aufl. p. 268.
(*u*) Association Med. Journ. June 17, 1853.
(*v*) Med. Gaz. vol. xxxiii. p. 734. (*w*) Beck, vol. ii. p. 666.
(*x*) Guy's Hosp. Rep. 1850, p. 214.

CHAPTER VI.

IRRITANT POISONS—VEGETABLE.

I. *Colchicum Autumnale.* (Colchicum; Meadow Saffron.)

§ 669. 1st. *Symptoms.*—The seed and cormus of this plant, and it is said the leaves(*y*) and flowers(*z*) also, are capable of producing violent poisonous effects. The symptoms are, an acute, gnawing pain in the stomach, vomiting and purging, tenesmus, reduced pulse, and great debility. They are said to resemble occasionally those observed in Asiatic cholera, from being sometimes attended with cramps in the various parts of the body, ice-cold surface, purging of rice-water stools, suppression of urine, and general collapse. The dose of the medicinal tincture, or the quantity of the crude seeds or bulb that is requisite to produce the effect described, is not precisely known. The officinal dose of the dried bulb or of the seeds is six or eight grains, and of the wine of either from ten drops to a fluidrachm. A case has been reported in which a person swallowed a wineglassful of the tincture by mistake; he was soon seized with violent pain in the stomach, and vomiting, and died on the next day of exhaustion.(*a*) In another case, reported by Mr. Feraday, the same quantity was taken. The symptoms did not appear for an hour and a half; there was then urgent pain and vomiting, followed by great exhaustion, purging, and tenesmus. In this case the intellect was unaffected. The patient died in forty-eight hours. (The uniformity with which, in the reported cases of poisoning by colchicum, either no mention is made of any cerebral disturbance, or, on the other hand, an express statement is given that the intellect was not at all impaired, justifies the position which we have given to this substance, viz., among the irritants, instead of its customary place among the narcotico-acrid poisons.) Ollivier met with two cases of death within twenty-four hours, in consequence of a tincture being taken which contained the active part of forty-eight grains of the dry bulb, and the period mentioned is the shortest in which death is recorded as the direct effect of colchicum. Dr. Christison states that he has known very violent effects produced by half an ounce taken by mistake, although most of it was brought away by emetics in an hour; and that, in medical practice, he has seldom seen the dose of a sound preparation gradually raised to a drachm thrice a day, without such severe purging and sickness ensuing as rendered it prudent to diminish or discontinue the remedy.(*b*)

2d. The *post-mortem appearances* in *fatal* cases may be those of inflam-

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(*y*) Bleifus, Repertor für die Pharmacie, lxix.
(*z*) Magazin für Pharmacie, xxx. (*a*) Med. Times and Gaz. 1853, 1.
(*b*) On Poisons, p. 667. For a collection of curious cases, vid. Ed. Month. Journ. of Med. Sci. 1852, by J. McGrigor Maclagan.

mation, but the evidence of this is extremely equivocal. In a case in which a decoction made with a tablespoonful of the seeds had been taken, and the inspection was made twenty-three hours after death, a remarkable rigidity, especially of the abdomen, was noted. The muscles were of a deep-blue color, as if they had been dried in the air. The heart was covered with spots of a black, violet, and brown color; the stomach was of a light-violet color, and the veins of it and of the intestines much engorged with blood. The other organs had a healthy appearance.(*c*)

The following is an analysis of the lesions found in seven cases of fatal poisoning by colchicum. The skin upon the back and sides was usually purple, livid, violet, or greenish, and decomposition was unusually rapid. The lungs and brain were gorged with dark, imperfectly coagulated, and pitchy blood, and so were the veins of the trunk. In several cases the gastro-intestinal mucous membrane was intensely congested, and in some places softened; in about one-fourth of the number its color was normal. Sometimes ecchymoses were found under the mucous coat, and sometimes also the discoloration extended to the peritoneal membrane.

Of *colchicin* Casper remarks that it is one of the most deadly poisons, and, in its power, hardly surpassed by phosphorus. He relates four cases of fatal poisoning in males between the ages of fifteen and forty. In each of these the dose was between two-fifths and the half of a grain of colchicin; but it occasioned death rapidly, with violent vomiting, purging, and collapse.(*cc*)

§ 670. 3d. *Chemical examination.*—The possibility of demonstrating the fact of poisoning by colchicum, by means of the extraction of its active principle, *colchicin*, from the *contents of the stomach*, &c., has been shown by Schacht and Wittstock, of Berlin.(*d*) Four persons were poisoned by drinking tincture of colchicum in mistake for "schnapps;" but the fact being somewhat uncertain, a chemical examination of the contents of the stomach was instituted with the view of detecting, if possible, the presence of colchicin. Previous to the experiment upon the viscera, however, what remained of the suspected liquid was examined, and also a tincture known to be the officinal preparation of colchicum. In both cases colchicin was obtained, and it was found that half an ounce of the officinal tincture of the drug yielded about four and a half per cent. of pure colchicin.

The contents of the stomach were mixed with a large quantity of alcohol, to which a few drops of hydrochloric acid had been added, then shaken, the liquid portion filtered off and evaporated to the consistence of a thin syrup. This residue was dissolved in distilled water, by which much fat was separated, then filtered, carefully evaporated, alcohol added again as long as any foreign material appeared, and then filtered and evaporated as before. To the mass now obtained, after having been reduced by evaporation to about eight ounces, half a drachm of calcined magnesia was used to free the colchicin, and, after a time, three ounces of ether added. This was allowed to evaporate spontaneously after being filtered. The residue was taken up again by water, and

(*c*) Neubrandt, in Ed. Med. and Surg. Journ. July, 1840.
(*cc*) Gericht. Med. i. 402. (*d*) Casper's Vierteljahrschrift, Jan. 1855.

evaporated in a watch-glass. The residue gave, with tincture of galls, chloride of platinum, and tincture of iodine, all the reactions of *colchicin*.

II. *Drastic Purgatives.*

§ 671. The chief articles enumerated under this name are *jalap, scammony, gamboge, colocynth, croton oil,* and *elaterium*. With the exception of the last two, they are seldom given singly in medical practice, but generally combined with each other and with milder purgatives, or with mercurials, and always in small doses. That they may give rise to fatal consequences from over-purging is not only possible, but is demonstrated by cases upon record. Being the most usual ingredients of quack cathartic medicines, especially in the pilular form, they have often been taken in large doses, and have thus caused death by the exhaustion arising from over-purging. One element in the consideration of cases in which death is attributed to the use of any of these drugs should not be forgotten, viz., that the very young, or, on the other hand, the aged, cannot bear the operation of violent purgative medicine with the same impunity as those in other periods of life; and also that those who are already enfeebled by disease may readily perish from the effects of a comparatively small dose. In general, where the quantity of a drastic purgative taken has been very large, there will be found evidence of inflammatory action in the intestines.

White and black hellebore, besides being violent irritants of the stomach and bowels, produce nervous symptoms, such as cramps, convulsions, and delirium. *American or green hellebore* has occasioned similar phenomena in a slight degree, but its poisonous action upon the nervous system is rather shown by vertigo, somnolency or coma, dimness of sight, dilatation of the pupil, and impaired muscular action.

III. *Castor Seeds or Beans.*

§ 672. It is stated (*Wood and Bache*) that two or three of these seeds are sufficient to purge, and that seven or eight act with great violence. This property depends upon an acrid principle which exists, as is now satisfactorily ascertained, in the embryo. Dr. Hartshorne states that he has known them to be eaten freely with impunity at times, and in other cases to produce the most violent and even fatal emeto-catharsis. Dr. Taylor gives an instance of poisoning by them. A young lady ate about twenty of them. About five hours after they were eaten, she felt faint and sick; vomiting and purging came on, and continued through the night. On the following morning she appeared like one affected with malignant cholera. The skin was cold and dark-colored, the features contracted, and the breath cold; the pulse was small and wiry; there was restlessness, thirst, pain in the abdomen, and she lay in a sort of drowsy, half-conscious state. Whatever liquid was taken was immediately rejected, and the matters passed by stool consisted chiefly of a serous fluid, with blood. She died in five days. On inspection, a very large portion of the mucous membrane of the stomach was found abraded, and softened in

the course of the greater curvature. There was general vascularity of the organ, and the abraded portion presented the appearance of a granulating surface of a pale rose color; it was covered with slimy mucus. The small intestines were inflamed and the inner coat abraded.(*e*)

IV. *Fungi.* (Mushrooms.)

§ 673. 1st. There is a vast number of cryptogamous plants thus denominated, some of which are generally wholesome as food, while others are exceedingly poisonous. The rules laid down by M. Richard, in the Dict. des Drogues, to guide persons who eat mushrooms in their selection, are that those should be rejected which have a narcotic or fetid odor, or an acrid, bitter, or very acid taste; which occasion a sense of constriction in the throat when swallowed; which are very soft, liquefying, changing color, and assuming a bluish tint when bruised; which exude a milky, acrid, and styptic juice; which grow in very moist places and upon putrefying substances; in fine, all such as have a coriaceous, ligneous or corky consistence. The last, however, are injurious in consequence rather of their indigestible than of their poisonous nature. Even mushrooms which are usually edible may prove poisonous if collected too late, or in places which are too moist. It is said, moreover, that the poisonous species become innocent when they grow under favorable circumstances; and that the most noxious may be rendered edible by boiling them in water acidulated with vinegar.(*f*) In many portions of Europe, but especially in Poland and Russia, they form the most important part of the food of the common people; and in the latter country whole tribes are mainly supported by them, scarcely any species, except the dung and the fly *agarics*, being rejected. Even those kinds which are elsewhere refused, by common consent, as poisonous, on account of their extreme acridity, are taken with impunity, being extensively dried, or pickled in salt and vinegar, for winter's use.(*g*)

§ 674. 2d. It appears very certain that the poisonous properties of mushrooms may be removed by boiling, and especially with acidulated water, or with vinegar.

Dr. Pouchet, of Rouen, gave a quart of the water in which five poisonous mushrooms (*Amanita muscaria and Avenenata*) had been boiled, to a dog, who died in eight hours; but the boiled fungi themselves had no effect upon other dogs. Another, who was fed for two months on little less than boiled amanitas, not only sustained no harm, but actually got fat on his fare.(*h*) M. Gérard exhibited, before a committee of the Paris Council of Health, the complete innocuousness of these two most poisonous varieties, after having been macerated in water. He directs that some two or three spoonfuls of vinegar or some coarse salt should be added to the water, and the fungi macerated for two hours, after which they should be washed, and then put into cold water and boiled for half an hour. They may then be taken out, washed, dried, and

(*e*) Med. Jur. p. 155.

(*f*) On the Medicinal and Toxicological properties of the cryptogamic plants of the United States, by F. Peyre Porcher, M. D., of Charleston, S. C., in the Trans. of the Am. Med. Assoc. vol. vii.

(*g*) Berkeley, ibid.

(*h*) Vid. Christison on Poisons.

used as food.(*i*) In a later number of the same journal, Dr. Gondot relates the cases of seven persons poisoned by eating mushrooms, three of whom died. The mushrooms had been fried in butter. One person ate, the next day, at least half in quantity, of those that had served the family the day previous. These, however, had lain in water for an hour, and were then drained and pressed. In this condition they were fried in butter and eaten. Diarrhœa followed for several hours, but without any other dangerous effect. For a full account of the facts so far ascertained, regarding the distinction between the poisonous and edible mushrooms, we beg leave to refer the reader to Dr. Porcher's admirable essay above quoted, and to Christison and Orfila's treatises on poisons.

§ 675. 3d. The *symptoms* of poisoning by mushrooms or other fungi, are both of an irritant and narcotic character. In Dr. Gondot's cases, the symptoms did not come on until several hours after the meal; in the fatal cases, not until twenty hours, the patients dying in sixteen hours afterwards. They were all affected with vomiting, purging, and cramps. In three cases related by Dr. Peddie, the symptoms began in half an hour, with giddiness and stupor; there were no abdominal symptoms, and the patients recovered. The principal symptoms in sixty-eight cases referred to by Ballardini, were nausea, uneasiness in the abdomen, vertigo, a state resembling intoxication, vomiting and diarrhœa, loss of power of locomotion, with convulsions. The following case exhibits a singular form of the narcotic effects. A boy of fourteen, who had eaten the *Agaricus panterimus*, near Bologna, was, in the course of two hours, seized with delirium, a maniacal disposition to rove, and some convulsive movements. "Ere long, these symptoms were succeeded by a state resembling coma in every way, except that he looked as if he understood what was going on, and, in point of fact, did so."(*j*) The same peculiarity was witnessed by Dr. Harlow in a girl seven years old, one of a family poisoned by *A. campestris*. "In the wildness of her delirium she rose from her bed and walked into the garden."(*k*) Both the lethargy and the symptoms of irritation may continue for a considerable length of time, and both may occur simultaneously.

§ 676. 4th. The *post-mortem appearances* in the few cases recorded, have been the following: An unusual fluidity of the blood, turgescence of the vessels of the brain, inflammation and even gangrene of the stomach. In one of Dr. Gondot's cases (the only one examined) there was a decomposition of the tissues, the abdominal viscera were softened, and the odor from them was extremely fetid. Dr. Maschka, of Prague, has reported seven fatal cases of poisoning by mushrooms, in which, after death, there was an entire absence of cadaveric rigidity, dilated pupils, blood of a dark-brown color mixed with dirty yellow and soft fibrinous clots, numerous ecchymoses and sanguineous effusions in the serous membranes and the parenchymatous organs, and remarkable distension of the bladder with urine.(*l*)

(*i*) Union Méd. 1851, No. 148.
(*j*) Christison on Poisons.
(*k*) Boston Med. and Surg. Journ. Aug. 1858, p. 78.
(*l*) Prager Vierteljahrs., 1855, ii. 137.

The evidence in cases demanding a legal investigation will most probably be derived from circumstances and the symptoms. The only case which can present difficulty is where an irritant poison has been designedly introduced into the preparation of mushrooms. An instance of this kind occurred: a woman died from the effects of arsenic mixed by her servant with mushrooms. The girl afterwards confessed the fact.(*m*) Of course, the only means of distinction in such cases is a chemical examination for the suspected poison.

CHAPTER VII.

IRRITANT POISONS—ANIMAL.(*a*)

I. *Cantharides.*

§ 677. 1st. *Properties.*—The cantharis, or Spanish fly, much used in medicine as a counter-irritant, and also occasionally given internally, is capable of producing fatal results. From the irritation in the genital organs, which is a secondary effect of its use, it has frequently, in ignorance of its dangerous properties, been employed for the purpose of exciting the sexual propensities, and it is occasionally taken also with the hope of procuring abortion. It may produce serious results even by external use. Its vesicating and its irritant property result from the presence of the same principle, viz., *cantharidin*, which has been believed to exist chiefly, if not entirely, in the wing-cases of the insect. From some experiments of Dr. Leidy, the vesicating principle of *Lytta vittata* appears to belong to the blood, the peculiar fatty substance of certain accessory glands of the generative apparatus, and to the eggs.(*b*) Cantharidin, however, is too active for internal use, and is only employed for the purpose of vesication. Cantharides are usually taken in powder or in tincture. In a case reported by Dr. Homans, the powder was taken in mistake for *hiera picra*.(*c*)

§ 678. 2d. The *symptoms* occasioned by an overdose of either of these preparations commence with nausea, vertigo, and a burning sensation in the mouth and throat. This sensation presently extends to the œsophagus and stomach, is succeeded by violent pain and extreme tenderness in the abdomen, thirst, difficulty of swallowing, and vomiting of blood, mucus and shreds of membrane. There is also violent pain in the loins, strangury, and priapism, and occasionally there is satyriasis with seminal emissions. In the female, swelling and heat of the organs of generation have been observed, and during pregnancy abortion is apt to be produced. It has repeatedly happened that the genital organs were attacked with gangrene, even in cases in which no sexual excite-

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(*m*) Christison on Poisons.

(*a*) Poisons of this class Casper denominates *septic*, because the greater number of them, resulting from animal decomposition, corrupt the blood when taken into the system.

(*b*) Am. Journ. of Med. Sci., Jan. 1860, p. 60.

(*c*) Boston Med. and Surg. Journ., March, 1855, p. 80.

ment was manifested. The secretion of urine is, in some cases, suspended; for in a case in which the catheter was introduced, no urine could be obtained. Occasionally profuse salivation occurs, and, in fatal cases, violent cerebral symptoms are observed. A young girl at Windsor was killed by the external application of blistering ointment, which was rubbed over her whole body in mistake for sulphur ointment which had been prescribed for the cure of the itch. Although the ointment was washed off, the cuticle came with it, and the girl died in five days, with the symptoms above described.(*d*) Guibourt has reported the case of a young man, suffering from acute pleurisy, who having had a large blister applied to his side, became affected with symptoms of irritation in the urinary passages, and died after falling into a state of complete collapse.(*e*)

§ 679. 3d. The *quantity required to destroy life* is not accurately ascertained. Drs. Wood and Bache state the medicinal dose as from one to two grains of the powder, and from twenty drops to a fluidrachm of the tincture. It is evident, however, from the frequently deteriorated condition of the powder, that the active principle may, in any given quantity, be found in less than the average amount, and that the strength of the tincture may be often thus impaired. This fact will serve to explain the large quantities which have been sometimes taken without dangerous symptoms. The smallest quantity of the powder which has been known to destroy life, was in the case of a young female, mentioned by Orfila, who took *twenty-four* grains in two doses. She took it to procure abortion, and as this followed, it is uncertain whether it may not have hastened the fatal result. Much larger doses of the powder have been taken, followed by the most dangerous symptoms, but early vomiting, no doubt, removed a great deal of the poison.

In a case observed by Dr. Ives, of New Haven, a boy of seventeen died from the effects of an *ounce* of the tincture. Death occurred seventeen days after he had taken it. A curious case occurred in France, in 1846, where the ointment of cantharides, consisting of a fourth part of the powder, and three parts of resin, wax, and lard, was administered to a man in his soup, with the intention of poisoning him. The criminal was condemned to death, although his intended victim recovered from the dangerous symptoms which he suffered. The exact dose in this case is not mentioned.

§ 680. 4th. The *post-mortem appearances* are those of inflammation. If a quantity sufficient alone to destroy life has been taken, the œsophagus, stomach, and small intestine will most probably be found highly inflamed, and if the person have lived for several days, the kidneys, ureter, and neck of the bladder also. Such has been the case in the few fatal cases of poisoning by this substance which have been examined. Sometimes the lining membrane of the mouth and throat is destroyed, and in Dr. Ives' case that of the stomach was pulpy and easily detached. In Guibourt's case the kidneys were softened and filled with bloody points; the same appearance was presented by the ureters and bladder, the mucous membrane of which was partially disorganized. A child nearly three years old is said to have rejected by vomiting the entire

(*d*) Taylor on Poisons. (*e*) Abeille Méd. xv. 153.

mucous membrane of the œsophagus, after taking about a drachm of tincture of cantharides.(*f*)

The presence of the greenish, gold, or copper colored scales, derived from the wing-cases of the insect, is, however, the best evidence of the nature of the poison. They adhere very closely to the mucous membrane of the intestines, and may be easily recognized by a common lens. Although there are many other insects which have wings of the same color and are not poisonous, it is hardly possible that these should find their way into the stomach, and much less that they should have been given with any evil intent. M. Poumet recommends also that the suspected liquids which have been vomited should be mixed with alcohol and allowed to evaporate on sheets of glass, by which means the brilliant colored particles of the fly will be visible after evaporation. Or, the stomach and intestine may be inflated and dried, after which, upon cutting them open and examining them upon a flat surface, the particles above mentioned, if present, will be seen sticking closely to the mucous membrane. They are not affected by putrefaction, and, according to Orfila, may be recognized as long as nine months after interment. If, however, the tincture has been taken, this method will not, of course, be available. An effort may be made to detect the cantharidin in the suspected liquid, by digesting in ether what remains after evaporation, and then testing the vesicating properties of the product, but it is evident that the evidence derivable from such a method is very imperfect, if the experiment should not succeed, it being very possible that cantharides may have been used and yet not be detected by these means.

There are several species of fly having similar properties with the Spanish, and which are found in the United States and elsewhere. They are seldom used, however, but could probably be detected as readily as the genuine cantharides.

II. *Sausages.*

§ 681. 1st. *Nature of the poison.*—These and analogous articles of food have so frequently given rise to poisoning in Germany, that we cannot pass them over entirely unnoticed. According to the statistics of Prof. Schlossberger, there have occurred in the kingdom of Wurtemberg alone since 1800, no less than 400 cases of poisoning by sausages. Blood and liver-pudding (*blut* and *leber-würste*) constitutes one of the most ordinary articles of the diet of the Germans, and other smoked and fatty preparations, obtained chiefly from pork, are much used. The nature of the sausage poison is not yet clearly ascertained. Liebig considers it a kind of ferment, Buchner believes it to be due to a peculiar acid which he terms botulinic acid, while Schlossberger considers it to be an organic base. He supports this theory by referring to the now numerous sources of the ammoniacal bases, the transformation of protein combinations by putrefaction, and the very poisonous nature of many of these alkaloids, among which conicine and nicotine are already well known.(*g*) This writer, in a more recent essay, states that the uncertainty regarding the

(*f*) Am. Journ. of Med. Sci., Oct. 1857, p. 560.
(*g*) Canstatt's Jahresbericht für 1850. V. Band, p. 136.

source of the poison continues. He also adds an important fact, that poisonous sausages are eaten by dogs and cats with impunity.(*m*)

Whatever may be the chemical nature of the poison, it appears to depend upon putrefactive decomposition of the fatty matters. The cases of poisoning occur chiefly in the winter and spring months. The unwholesome sausages are described by the last mentioned author as showing, especially in the interior, little masses of soft consistence like curd; they have a repulsive odor, and a sour, bitter, and rancid taste.

§ 682. 2d. The *symptoms* are well seen in the following narration. The family of Ehrmann at Limmetshausen, with a number of guests, partook of a supper of pork sausages, in consequence of which all were more or less affected with symptoms of poisoning, eight with severe symptoms, and three died. The sausages were made of the liver of a healthy pig prepared eight days previously, slightly boiled, then smoked and hung up. There must have been something peculiar in the taste of the sausages, as one of the guests remarked that they were not wholesome, and did not partake of them, in consequence of which he escaped. The symptoms were similar in all, differing merely in degree. *Shortly after partaking* of the sausages, pains in the bowels, vomiting, giddiness, dryness of the mouth and throat, and difficulty of swallowing came on. The pupils soon became dilated and fixed, the headache and vertigo increased, and the power of vision was lost. Great prostration of strength followed, the power of speech was destroyed, the abdomen was painful to the touch, the pulse small, weak, and frequent, and at last intermittent. The respiration became difficult, and deglutition impossible, lividity of the countenance came on, spasms of the muscles of the extremities ensued, and rapid death. Death occurred within thirty-six hours after eating the sausages.(*n*)

These cases show that the symptoms are not always so slow in appearing as is generally stated. Many other cases might be referred to in which the effects were precisely similar to those described.(*o*)

§ 683. In some cases suspicion is wrongly thrown upon the food. Thus in the narrative (communicated by Prof. Röse to Casper's Journal, 1852), of the poisoning of a family by the smoked breasts of geese (*spickgans*), it was found upon chemical examination that a considerable quantity of *sulphate of zinc* was contained in the food. It had been used instead of saltpetre in its preparation. The symptoms were of a choleraic nature, and nothing like the narcotism produced by sausage poison was observed.

§ 684. The *post-mortem appearances* in the cases seen by Roeser were the following. The brain and spinal marrow were healthy. The palate and tonsils were red, the last much larger than natural, the lining membrane of the larynx was of a deep blue color, and that of the trachea and bronchia of a blackish-red color. The lungs were highly congested and condensed. The œsophagus was of a remarkably white color, and covered with a white false membrane. The stomach and intestines internally were mottled with red

(*m*) Virchow's Archiv. xi. 569.
(*n*) Roeser. Am. Journ. Med. Sci. April, 1843.
(*o*) Vid. Kussmaul. Ver. deutsch. Zeitsch. v. ii. 1849. Two children out of a family of seven died.

spots, and the duodenum had a black appearance. The other organs were nearly natural in their aspect. Similar appearances have been observed in other cases.

§ 685. In December, 1841, over forty cases of cholera morbus occurred in New York, which, according to Dr. Lee, were traced to some smoked beef, sold from a particular grocery, and of which the individuals attacked had freely eaten. The symptoms did not generally make their appearance until several hours after the beef had been eaten. They commenced with pain and uneasiness in the præcordial region, which extended to the back and loins, and were only temporarily relieved by the dejections which followed. Vomiting soon came on, attended with great thirst and a burning sensation at the pit of the stomach, and the irritability of this organ became so great, that no substance, either as food or medicine, could be retained for an instant. Extreme prostration followed; the functions of the nervous, muscular, and the digestive systems were much impaired, and convalescence was very slow and protracted. In one case, that of a girl six years of age, the disease proved fatal on the fifteenth day; and on dissection the blood was found fluid, the mucous coat of the ileum deeply injected, and inflamed; the other organs were healthy.(*p*)

III. *Poisonous Cheese.*

§ 686. The nature of the poisonous quality occasionally acquired by cheese, is not more precisely known than that of sausages; it is supposed by Hünefeld and Sertürner to depend upon two animal acids, analogous to, if not identical with the caseïc and sebacic acids. According to the researches of Proust, the sharp, peculiar taste of old cheese is owing to the gradual conversion of the curd of caseïne into the caseate of ammonia, which in sound cheese is always united with an excess of alkali. But if the fermentation has been too much hastened, or allowed to go too far, a considerable excess of caseic acid is formed, as well as some sebacic acid. According to Hünefeld, the deleterious cheeses are yellowish-red, soft and tough, with harder and darker lumps interspersed; they have a disagreeable taste, redden litmus, and become flesh-red instead of lemon-yellow under the action of nitric acid.(*q*) Instances of poisoning by cheese have been hitherto observed chiefly in Germany, some few in England, and within a few years in this country also.

Dr. Parrish has given an account of several cases which fell under his observation in Philadelphia.(*r*) A poor family, consisting of a laboring man and his six children, after a meal composed of tea, bread and cheese, were seized with severe vomiting and purging, with dizziness of the head and great prostration of strength; the liquids discharged from the stomach and bowels were thin and watery, and not very dissimilar to the rice-water discharges of cholera. The attacks were frequent and distressing, and the cases exhibited, at first view, very much the appearance of poisoning from some metallic irritant. These symptoms occurred within an hour after partaking of the meal, and the mother of the family, who was alone unaffected, had been absent from dinner on that

(*p*) Copland's Dict. Am. Ed. art. Cholera.
(*q*) Christison on Poisons, p. 495.
(*r*) Trans. Col. Phys. Jan. 1851.

day. On the following day all Dr. P's patients had recovered. Similar symptoms having occurred in numerous instances in the same neighborhood, after eating cheese obtained from the same grocer, inquiry was made of him, and it was found that the cheese from which the deleterious slices had been cut, was one of a large lot from a celebrated dairy in New York, all of which up to that time had produced no unpleasant results, but on the contrary had been considered remarkably good. There was nothing in the taste or external appearance of the remnant to indicate any poisonous properties. It was moreover tested by a competent chemist, and no mineral poison was detected in it. Dr. P. was unable to explain the sudden development of poisonous properties in any other way than by reference to the peculiar state of the atmosphere existing at the time. "It was in the month of January, during a spell of remarkably damp, foggy, and mild weather, succeeding to a cold atmosphere. In the two days during which these cases occurred, the air was loaded with moisture, and the fog on the Delaware was so heavy that the boats were very much impeded in crossing. Might not the softening of a mass of cheese, after being hardened by freezing, develop deleterious properties?" He also considers that the fact of the cheese being mild and newly made, would favor the changes referred to.

IV. *Poisonous Fish.*

§ 687. There can be no doubt, as Dr. Christison observes, "that the subject of fish poison is one of the most singular in the whole range of toxicology, and none is at present veiled in so great obscurity." In many cases it is possible that the symptoms of poisoning may be due to the fish having been kept too long, in others to its mode of preparation, as by pickling or smoking; but nevertheless some few cases will still remain in which the freshest and usually most wholesome fishes have caused symptoms of irritant poisoning. These cases are, however, far more common in tropical countries, their occurrence in this latitude being so rare, that it is reasonable to suspect either idiosyncrasy on the part of the persons eating the fish, or some deleterious quality acquired by it after its removal from the water.(*rr*)

1st. *Oysters* have not unfrequently proved dangerous. On several occasions in France, they appear to have become suddenly unwholesome.(*s*) In the autumn of 1854, numerous deaths in our principal cities were ascribed to their use, and it was generally conceded that for a period of a few weeks in the month of October, they frequently gave rise to choleraic symptoms. No clue to the nature of the poison was in this instance, or in any of the previous epidemics in France, obtained by chemical examination. We doubt very much whether *crabs* and *lobsters* acquire any peculiar poisonous quality apart from their general unwholesomeness as articles of food, if not eaten too long a time after their capture.

(*rr*) Consult Moreau de Jonnés, Recherches sur les poissons toxicophores des Indes Occidentales, Annales de Thérapeutique, i. 461; Guillon, Abeille Méd. xiii. 67.

(*s*) Mem. sur les Empoissonnements par les Huitres, les Moules, les Crabes et par certains Poissons de Mer et de Rivière, par A. Chevallier et E. A. Duchesne. Ann. d'Hyg. vol. li.

§ 688. 2d. *Mussels*, however, by general consent seem to have a specific poisonous property accorded to them. The idea that it is due to an impregnation from copper is wholly untenable, since not a trace of this metal has been discovered in those taken from the stomachs of persons who have been killed by them. Unquestionably, in many instances, idiosyncrasy is the cause of the mussel proving unwholesome to some individuals. This, also, is the conclusion at which M. Lunel arrives after a careful investigation of the subject.(*ss*) But, it need hardly be remarked, that it, after all, amounts to a confession of our ignorance of the efficient cause of poisoning by these shell-fish.

In the cases described by Dr. Combe, of Leith, not only were the mussels perfectly fresh, but every person who ate those from a particular spot, was more or less severely affected, and even animals were poisoned by them, a cat and a dog having been killed by the suspected article. Dr. Christison was unable to detect in them any principle which did not exist in the wholesome mussel. Many cases descriptive of the symptoms have been reported. The following is a recent one: A boy aged ten years, ate the thick part of two mussels; forty-five minutes afterwards he complained of uneasiness in his stomach; he had a sensation of heat, giddiness, and a desire to vomit; there was an eruption of nettle-rash over the whole body as far as the knee, attended with swelling of the face and intolerable itching; after an emetic, the symptoms disappeared completely.(*t*) Very much the same symptoms were exhibited by the persons seen by Dr. Combe.(*u*) In the fatal case of an adult of intemperate habits, reported by Dr. Lee, who, with his whole family, seven in number, were poisoned by eating mussels, the attack commenced with severe distress in the stomach, followed by vomiting and purging, painful muscular spasms, with great anxiety and prostration; the pulse was frequent and feeble, the skin of a deep crimson or livid color, and covered with a cold, clammy sweat; sleeplessness, subsultus tendinum, and delirious agitation, great heat at the epigastrium, the rest of the surface being cold, pupils contracted, face sunken; voice and intellect unaffected until four hours before death, about which time vomiting of matters resembling coffee-grounds came on; death occurred about forty-eight hours after the time of the attack.(*v*) Chevallier and Duchesne report a number of cases of poisoning by the *roes* of a fish called the barbel (barbillon), and several cases of a similar origin are reported by Dr. Trapenard.(*w*) The symptoms were such as would be produced by a violent emeto-cathartic; copious evacuations, and constant efforts to vomit, headache, frequent pulse, great pain, and an insupportable sensation of heat.

V. *Unsound Meat.*

§ 689. The symptoms produced by the use of unsound meat are similar to those arising from irritant poisoning, but in addition there are typhoid symp-

(*ss*) Abeille Med. Juin, 1857, p. 173.
(*t*) Guy's Hosp. Rep. 1850, 213. (*u*) Ed. Med. and Surg. Journ. xxix. 86.
(*v*) Am. ed. of Copland's Dictionary. Art. Cholera.
(*w*) Ann. d'Hyg. 1850, and Journ. de Chimie, 1851, p. 584. For a recent case, see Edinb. Med. Journ. April, 1860, p. 958.

toms which indicate the contamination of the whole body by the products of decomposition. In some cases related by Dr. Christison, the patients were soporose or delirious, and one died comatose in six hours after eating a portion of a putrefied calf. The rest being freely purged and made to vomit, eventually got well; but for some time they required the most powerful stimulants to counteract the exhaustion and collapse which followed the attack.(*x*) Game which has been long kept may be the source of the symptoms of irritant poisoning. In this country the flesh of the pheasant (*Tetrao umbellus*), when snow is upon the ground, is apt to prove unwholesome to some, in consequence, as is supposed, of the bird feeding upon the leaves and berries of the laurel. It is doubtful, however, whether this explanation is correct. Dr. Bigelow suggests as probable solutions of the difficulty—1. That the bird is affected with some disease at the time of its death. 2. That some slow chemical change, not putrefactive, may take place when the flesh is long kept in cold weather. 3. That the idiosyncrasy of individuals renders some persons intolerant of this species of food.(*y*) Instances of arsenical poisoning resulting from the eating of birds who had fed upon grain steeped in a solution of this poison, to preserve it, are not unfrequent in England and France, where this process is chiefly in use.

VI. *Mechanical Irritants.*

§ 690. There is a vast number of indigestible substances, which, when introduced into the stomach, may give rise to fatal consequences. Pins and needles, and powdered glass are those which, in case of death, are most likely to give rise to a suspicion of their having been criminally given. Naturally, such questions can be reasonably raised only in the cases of children or imbecile persons; although, indeed, at one time, glass in powder was considered as extremely poisonous, and was occasionally criminally administered. Thus, in France, in 1808, a man was tried for poisoning his wife with this substance. It was found in the stomach, but there were other causes which might have produced death. A negro woman, in Jamaica, attempted to poison a whole family with pounded glass, put into a dish of curried fish. The fact was discovered towards the end of the meal, and purgatives were given, which brought away large quantities of coarsely powdered bottle-glass. The persons did not suffer any inconvenience. Dr. Bowling, of Kentucky, obtained as much as eighty grains of powdered glass from the discharges of a child. It had not suffered at all.(*z*) Nevertheless, Dr. Christison reports a case in which a child, eleven months old, was evidently killed by it.(*a*)

§ 691. *Pins* and *needles*, when swallowed, rarely cause death; they frequently emerge from various parts of the body, or are found after death in the viscera.

(*x*) Articles on diseased meat as affecting the health may be found in Brit. and For. Med.-Chir. Rev. Jan. 1858, p. 87, and in North Amer. Med.-Chir. Rev. May, 1858, p. 483. Duchesne has written on the unwholesomeness of poultry fed on diseased meat, Ann. d'Hygiène, 2emè sér. xi. 63, and Roeser on that of over-driven cattle, Prager Vierteljahrs. xl. anal. p. 86.

(*y*) Nature in Disease, p. 287.

(*z*) West. Journ. of Med. and Surg. Nov. 1848. (*a*) Op. cit. p. 504.

Thus a case is related in which a needle was found in the kidney, in another in the liver, in another in the heart, and in another across the œsophagus; the point of it had, in the last case, penetrated the common carotid artery, and produced fatal hemorrhage. Sometimes, no doubt, they are thrust under the skin by hysterical patients, animated by a morbid desire of attracting attention and curiosity. They may be the accidental cause of death in many ways, but the most usual is that of disturbance of the digestive functions. A girl, twelve years of age, to avoid work swallowed pins and needles, of which nineteen of the former and five of the latter were passed from the bowels. She suffered occasional colicky pain, and had much swelling and hardness of the abdomen.(*aa*) A case is related,(*b*) in which a woman eventually died from the continued irritation produced by a quantity of needles she had swallowed. The stomach, which was enormously enlarged, contained *nine* ounces of pins of a purple-black color, and the duodenum contained a *pound* of the same. In the body of a lunatic who died suddenly of peritonitis, in the Peekham House Asylum, the following articles were found in the stomach: thirty-one entire spoon-handles about five inches long; four half handles, nine nails, varying in size from a garden wall nail to a spike nail; half of the iron heel of a shoe; a screw, two and a quarter inches long; four pebbles, and one metal button, weighing in all two pounds eight ounces. The whole of them were stained of a black color, and the angular articles rounded off and blunted. In the duodenum an entire spoon-handle was found, and here the perforation occurred which caused the peritonitis.(*c*)

A case in which a mass of hair and string, weighing from eight to ten pounds, was taken from the body of a girl aged eighteen, who had been in the habit of swallowing these substances, is related in the same journal.(*d*) A remarkable instance of the passage of a tinned iron fork through the whole alimentary canal, was communicated to the French Academy of Medicine by Velpeau.(*e*) Another in which death was caused by eating raw rice.(*f*) M. Gosselin related to the Surgical Society of Paris, the case of a man who swallowed a clay pipe three inches and a half in length. It occupied two months in passing through the bowels, and, at the end of this time, it was discharged unbroken. But the man's health had suffered severely from the irritation it had caused, and he died five days after its discharge.(*g*) Cases such as have been enumerated in this chapter, are evidently rather subjects of curiosity, than of any importance in legal medicine.

(*aa*) Boston Med. and Surg. Journ. Oct. 1859, p. 227.
(*b*) Lancet, Am. ed. 1852, p. 224.
(*c*) Lancet, 1852, vol. ii. p. 296.
(*d*) Vol. i. 1852, p. 224.
(*e*) Ibid. 1849, p. 246.
(*f*) Ibid. April, 1847.
(*g*) Ibid. 1851, vol. ii. p. 462.

CHAPTER VIII.

NARCOTIC POISONS.

I. *Opium and its Preparations.*

§ 692. 1st. The *symptoms* produced by a poisonous dose of opium, or its preparations, differ from those which are occasioned by moderate and remedial doses of the drug. While in the latter the purely narcotic effects do not occur without a certain degree of previous exhilaration and stimulation, in the former dizziness and stupor are the first symptoms, or the excitement is so temporary as to pass unnoticed. The main characteristic of poisoning by opium is the profound somnolence which it occasions, and which is not preceded by active delirium. When under the full influence of this narcotic, the patient lies in a deep lethargy, his eyes are closed, the pupils extremely contracted, the face generally pale, the limbs relaxed, and the skin moistened with copious perspiration. Respiration is slow, and sometimes stertorous. If no efforts are made to save life, or if medical assistance is fruitless, the stupor deepens, the patient can no longer be even momentarily awakened, his pulse becomes feeble and imperceptible, and he dies comatose. Copious perspiration is a singular and not unfrequent symptom. It is mentioned by Christison, who says that in one case "the sheets were completely soaked to a considerable distance around the body;" and Dr. Morland observed it, in an equal degree, in a case he has reported.(*h*) Delirium is very rare, and, when it occurs, is of a passive character. In the adult, *convulsions* have been seldom observed, although one or two curious cases have been reported in which they were witnessed. In children, however, they are not uncommon. Occasionally spontaneous vomiting takes place, especially after the ingestion of the drug in large quantities, and some instances have occurred in which this early rejection of the poison from the stomach has saved the life of the individual. A child nine years of age, mentioned by Dr. Coale, recovered in this way after having swallowed four grains of opium and four of extract of belladonna. The pulse also varies in character, being usually feeble and irregular, but sometimes full and slow. In a case reported by Dr. J. B. S. Jackson, it is described as "rapid, full, and throbbing." Such differences depend often, probably, upon the variable periods at which the observation is made; thus, the skin is warm and perspiring, and the pulse rapid and feeble, or perhaps even strong, early in the case, while later, if the patient get worse, the surface becomes cold and pale, and the pulse slow, feeble, and irregular. Much also may depend upon the constitutional irritability of the system.

The differences between poisoning by opium and by other narcotics are

(*h*) Am. Journ. Med. Sci. Oct. 1854.

briefly these: Aconite, digitalis, and tobacco do not produce stupor, nor does conium, except in very large doses, and even then not uniformly. Hyoscyamus, stramonium, and belladonna excite violent delirium, and extreme dilatation of the pupil. Inebriation by alcohol bears a very close resemblance to opiate narcotism in many cases, but the former is preceded by confusion of ideas or complete delirium, and the breath is strongly tainted with the alcoholic odor.

§ 693. The symptoms usually commence, in the adult, within an hour after the poison has been taken, but sometimes the confirmed narcotic effects do not come on until a later period. In a case quoted by Dr. Taylor, the patient was found totally insensible in fifteen minutes. In Dr. Lyman's case,(*i*) a female, after taking an ounce of laudanum with suicidal intent, began very suddenly, in thirty-five minutes, to lose her pulse and muscular power, and had slight spasms; the lips became livid, there was spasmodic dropping of the lower jaw, the extremities were cold, and in ten minutes more she was unmistakably dead. Thus, three-quarters of an hour only elapsed from the ingestion of the laudanum to her death. Dr. Coale(*j*) states that he met with a case fatal in the same time, and Dr. Taylor quotes a similar one. Dr. Beck reports a case which proved fatal in two hours. Another is given which terminated in two hours and a half.(*k*)

§ 694. 2d. The *average duration* of cases of poisoning by opium is stated by Christison to be from seven to twelve hours. The rapidity, or indeed the certainty, of death does not always correspond with or depend upon the amount taken, when this is beyond the limits of safety. Among the cases above referred to is one by Dr. Jackson, which recovered, although ninety grains of opium were taken, and no relief was afforded for three hours afterwards. In the case mentioned by Dr. Taylor, of a man who had taken from twenty-eight to thirty grains of opium, the symptoms were so little characteristic of poisoning by this drug, that no suspicion was entertained of its having been used, and death took place rather suddenly in ten hours after the fatal dose had been swallowed.(*a*) On the other hand, the most rapidly fatal case yet recorded was the one above referred to, in which only an ounce of laudanum was swallowed. The fact should, however, be borne in mind, that laudanum, or any *solution* of opium, is more prompt in its effects, because it is more readily absorbed than solid opium.

§ 695. 3d. *Amount.*—Owing to the varying susceptibility of individuals to the poisonous action of opium, it is not possible to state the *amount* which will be uniformly fatal. A case is referred to by Dr. Taylor, in which four grains proved fatal, and another in which death was supposed to have resulted from a dose of two drachms of laudanum, but it was uncertain whether as much as half an ounce had not been swallowed. A gentleman affected with acute rheumatism died comatose after taking, at intervals of an hour, four pills, each of which contained one-third of a grain of morphia.(*b*) In Dr. Lyman's case, one ounce of laudanum was the cause of speedy death. The smallest dose which

(*i*) Am. Journ. Med. Sci. Oct. 1854. (*j*) Am. Journ. Jan. 1850, p. 73.
(*k*) Bost. Med. and Surg. Journ. vol. xi. p. 285.
(*a*) Med. Jurisp. 6th ed. p. 162.
(*b*) Med. Times and Gazette, June, 1860, p. 254.

has proved fatal to a child is the one-twentieth of a grain of opium.(c) The child was six days old. Dr. J. B. S. Jackson met with a case, in 1845, in which five drops of laudanum, injected into the rectum of a child eighteen months old, caused death in six hours. Instances are quoted by all the writers on toxicology, of death in children from extremely small doses, such as the one-tenth or the one-fifth of a grain, and most practitioners have witnessed alarming symptoms from a few drops of laudanum, or fractional doses of Dover's powder, given to children. In many instances these have been dissipated only by active medical interference, such as cold affusion, galvanism, &c.(d)

Trousseau states that he has seen narcotic effects in children from a dose of the wine of opium equivalent to less than the one-hundredth of a grain of this drug. It is well known that a child may be narcotized by the milk of a nurse who has taken opium. Bouchardat relates that nine new-born children were narcotized by the decoction of a single poppyhead. In London an infant four days old was destroyed by one-twentieth of a grain of opium, or about one drop of laudanum;(e) and in Edinburgh the same effect was produced by two drops of laudanum, in an infant also four days old.(f)

The following cases prove the possibility of recovery after excessive doses of this drug. A gentleman seventy-two years of age recovered from the effects of twelve drachms of laudanum;(g) another, aged thirty-five years, after half an ounce of this preparation had been taken;(h) in a third case above an ounce was swallowed, and, although the symptoms were intense, the patient recovered, temporarily at least, with paralysis of the right side.(i) Another case is reported, in which ninety grains of opium were taken by a female, who, however, recovered.(j) An infant of twelve months has recovered from the effects of seventy-two drops of laudanum;(k) another, six days old, after two grains of powdered opium;(l) and a child, not quite six years old, from a dose of seven and a half grains of opium, which were, however, mixed with an equal quantity of prepared chalk.(m)

The tincture of opium is liable to considerable variations in strength; and although in adults the difference of effect will hardly, within certain limits, be perceivable, it may certainly be so in children, on whom this drug has, moreover, always a disproportionately speedy action. The quantity of soluble matter taken up by the menstruum is subject to great variation, since the purity of the opium, its comparative strength in morphia, the strength of the spirit used as a solvent, and the period of the maceration, will undoubtedly affect the result materially. The tincture, properly prepared, should contain one grain in 12.8 minims, or about twenty-five drops. Godfrey's cordial con-

(c) Dr. E. Smith, Assoc. Med. Journ. April, 1854.
(d) Vid. I. Young's case, and the references given by Dr. Hays, Am. Journ. Med. Sci. April, 1852, p. 426; also a very instructive case by Dr. Herapath, where respiration was artificially maintained by means of the galvanic battery until the narcotism passed off and the child was saved, Lancet, Am. ed. 1852, p. 450.
(e) Times and Gazette, April, 1854, p. 386. (f) Edinb. Med. Journ. ii. 145.
(g) Lancet, July, 1857, p. 80.
(h) Boston Med. and Surg. Journ. Aug. 1855, p. 21.
(i) Brit. and For. Med.-Chir. Rev. xxii. 523.
(j) Am. Journ. Med. Sci. Oct. 1854, p. 385. (k) Edinb. Med. Journ. iii. 716.
(l) Boston Med. and Surg. Journ. Dec. 1857, p. 357.
(m) Am. Journ. Med. Sci. April, 1859, p. 367.

tains a little more than one grain of opium in the fluidounce.(*n*) Dalby's carminative mixture has five minims or ten drops of laudanum in two ounces. The fatal consequences arising from the constant and ignorant use of these nostrums in domestic practice are undoubtedly very frequent.

§ 696. 4th. The influence of *idiosyncrasy* in modifying the usual effects of opium are often seen, and may be of importance in legal medicine. Thus Grisolle states, that he saw narcotism induced in a lady by half a grain of opium. Dr. Christison mentions the case of a gentleman who was always narcotized by so little as seven drops of laudanum, and Taylor observed alarming symptoms from the injection in a clyster of one grain of opium. Some authors contend that the drug is even more active by the rectum than when swallowed. Some diseases render the system extremely susceptible to its poisonous action, and this is particularly the case in all those affections attended with a plethoric condition of the bloodvessels. On the other hand, painful diseases enable the person to use very large doses, not only without injury, but with positive advantage.

§ 697. The habit of taking opium diminishes the influence of this drug upon the system, and doses, which in other cases would be absolutely poisonous, are taken with entire impunity, by persons who indulge in this habit. The influence exerted by the habitual use of opium upon the *duration* of *life*, does not appear to be so unfavorable, as from the powerful action of the drug upon the system might at first be supposed.(*o*) The picture of the opium eaters and smokers of the East, as drawn by travellers, is indeed a melancholy one, and their general testimony is, that *there* it undoubtedly has the tendency to shorten life. This is the conclusion arrived at by Mr. Little of Singapore, as the result of careful and extensive inquiries at that place of the owners of opium shops, of the smokers who frequented them, the prisoners in the house of correction, and the paupers of a poor house. The following picture of the effects of the habitual use of opium is drawn by this gentleman: "As the habit grows upon its unhappy victim, the first evils experienced are disturbed sleep, watchfulness, giddiness, sometimes headache, capricious appetite, a white tongue, frequently costiveness, indescribable oppression in the chest, and haziness of the eyes. Afterwards a copious secretion of mucus takes place from the eyes and often from the nose also; digestion becomes much impaired and micturition difficult; a mucous discharge begins to flow from the organs of generation; the sexual organs, at first preternaturally excitable, gradually lose their tone; the body wastes, the muscles lose their torosity, and the bones are affected with dull gnawing pains for some hours in the morning. By and by the figure stoops, and a peculiar shuffling gait is acquired, by which alone a

(*n*) Wood & Bache's Dispensatory.

(*o*) This subject received particular attention from Dr. Christison in consequence of its importance in a remarkable civil trial. The Earl of Mar effected insurances on his life to a large amount while addicted to the vice of opium eating, and died two years afterwards of dropsy. He had used laudanum for thirty years, at times to the amount of two or three ounces daily, and died at the age of fifty-seven. He suffered greatly from rheumatism. The insurance company having been unaware of this habit, refused payment on the ground of its having a tendency to shorten life. The persons holding the policy, therefore, instituted an action against the company, which was decided in favor of the former, but on other grounds.

practised eye may recognize an old opium debauchee. At the same time, the eyebrow droops, the lower eyelid becomes dark, the eye itself seems to sink and grow dim, and the whole expression is that of premature old age. In both sexes the procreative power is greatly lessened, and in those women who, nevertheless, do bear children, the secretion of milk is defective. The influence of the habit on the generative functions is indeed so decided, that were it not for fresh arrivals from China and other parts of the East, the population of Singapore would very soon be seriously diminished."(*p*) Finally, according to this author, structural derangement is induced, the digestive and assimilative functions become very much impaired, strumous affections are readily developed, and the opium-smoker succumbs without resistance under any violent disease.

Some Eastern travellers, however, assert that the habit has no tendency to shorten life. Thus Dr. Macpherson says, that although the habit of smoking opium is, in China, universal among rich and poor, we find them to be a powerful, muscular, and athletic people; and Dr. Burnes, who resided several years at the court of Scinde, says, that "it will be found in general that the natives do not suffer much from the use of opium.(*q*) A celebrated Cutchee chief, who had taken opium largely all his life, was alive at the age of 80, paralyzed by years but his mind unimpaired."

Dr. Christison, moreover, found upon an examination of twenty-five cases, the particulars of which he obtained from various quarters, that instances of longevity among opium eaters in Great Britain were not uncommon. In most of these cases it is expressly stated that no injurious effect upon the general health was observed; in some instances, indeed, the persons being ruddy and robust in appearance. In a few, unpleasant symptoms were experienced only upon the intermission of the habit. The only inference that can at present be drawn from the testimony of travellers, and from these observations reported by Dr. Christison, is adverse to the general belief that opium, like intemperance in strong drink, has a tendency to shorten life when habitually used. Future observation must decide whether this reasonable belief is really the correct one. The possibility of abruptly discontinuing the habit without injury to the constitution has been shown by Dr. Christison.(*r*)

§ 698. 5th. *Post-mortem appearances.*—It is quite unnecessary to particularize the morbid alterations which have been seen in persons dying from poisonous doses of opium, since there are none which are sufficiently constant or distinctive to be attributed to this cause. As a general rule, the vessels of the brain and spinal marrow will be found turgescent and the lungs and other vascular organs congested, while the blood remains fluid. Putrefaction is rapid, *cæteris paribus*, after narcotic poisoning. The multitude of diseases and of accidental modes of death which may occasion these conditions preclude us from attaching any importance to them as indicative of death from opium. Sometimes opium in substance or laudanum may be found in the stomach, or the latter recognized in this organ by its smell, but in the vast majority of cases the poison is rapidly absorbed or eliminated from the system, so that at the post-mortem inspection no trace of it will be found.

(*p*) Edinb. Month. Journ. June, 1850.
(*q*) Christison on Poisons.
(*r*) Edinb. Month. Journ. June, 1850.

§ 699 6th. *Poisoning by morphia* or its salts requires no separate consideration. The symptoms are rather more prompt in their appearance but are otherwise entirely similar to those produced by opium or laudanum. The medicinal dose of morphia, or of its acetate, muriate, or sulphate, is *one-sixth* of a grain. Death has been caused by *one* grain of the muriate, taken in divided doses over a period of six hours,(*s*) and by one and one-third of a grain within four hours.(*ss*) The former dose was equal probably to six grains of opium. It was for poisoning with the acetate of morphia, that Castaign, who had formerly been a pupil of Orfila, was, in the year 1826, tried and executed in Paris. He was convicted less upon the medical than the circumstantial evidence offered, since with the most ingenious refinement of cruelty he had administered tartar emetic to his victim for the purpose of getting rid of any of the poison which might have remained in the stomach. The medical testimony could only show that the symptoms and post-mortem appearances were not opposed to the supposition that morphia was the cause of death.

§ 700. 7th. *Chemical examination.*—Opium is easily recognized by its familiar physical properties. As, however, it is seldom presented in a pure state for examination, but mingled with some form of organic matter, these properties can seldom enable us to distinguish it. It is important to bear in mind, as Casper has remarked, that the ultimate chemical constituents of opium are identical with those of our food, and hence may be so entirely digested that no trace of the fatal poison can be detected by chemical means in the body of its victim. It is necessary to describe first the properties and tests of morphia and meconic acid, since it is to these constituents that opium owes principally its poisonous qualities, and the chemical analysis is therefore directed to their separation from the substances examined.

§ 701. 8th. *Morphia.*—The crystals of morphia are transparent, they are nearly insoluble in water, and have a bitter taste. Boiling water dissolves a little more than one four-hundredth part of morphia; it is nearly insoluble in ether, but readily soluble in sulphuric, muriatic, or acetic acid. The following are some of the chief characteristics of morphia, as enumerated by Pereira:—

1. *Nitric acid* reddens morphia or its salts (the chlorate excepted, according to Dumas) and forms with them an orange-red solution, which is much darkened by an excess of ammonia, and which becomes yellow after a little time. *Fallacies.*—Nitric acid produces a red color with several other bodies, as brucia, commercial strychnia, several volatile oils (as oil of pimento and oil of cloves), some resinous substances, &c.

2. *Iodic acid* is deoxidized by morphia, iodine being set free. Hence when this alkali is added to a solution of iodic acid, the liquor becomes reddish-brown, and forms a blue compound (*iodide of starch*) with starch. *Fallacies.*—Sulphuretted hydrogen, sulphurous acid, phosphorous acid, sulphocyanide of potassium, sulphosinapisin, and some other agents have a similar effect on iodic acid. Of course if the morphia be pure these fallacies have no application.

3. Neutral sesquichloride of iron dropped on crystals of morphia, renders

(*s*) Ed. Month. Journ. Sept. 1846.

(*ss*) Vid. § 695.

them blue. If water in excess, or acids, or alkalies be added to the blue compound, the color is destroyed. It is also destroyed by heat. *Fallacies.*—Tannic and gallic acids with a little water, and infusion of cloves or pimento also form blue compounds with sesquichloride of iron. Dr. Carson adds to the above statements—"if to a mixture of morphia and concentrated sulphuric acid, a drop of bichromate of potash be added, green oxide of chrome is set free."(*t*)

§ 702. *Meconic acid.*—The characteristics of this acid are as follows: 1. It reddens the neutral sesqui-salts of iron; the red color is destroyed by alkalies, protochloride of tin, and nitric acid, assisted by heat. This, which is the most reliable test for meconic acid, is still also open to objection. Thus sulphocyanic acid produces a similar red color with the persalts of iron. The force of this objection is derived from the fact that sulphocyanic acid is naturally sometimes present in the saliva. Christison, indeed, states, that "it is seldom possible to procure a distinct blood-red coloration from the saliva, except by evaporating a large quantity to dryness, and redissolving the residue in a small quantity of water;" but Pereira dissents from this statement, and says, that in a large majority of cases, he has found saliva distinctly and unequivocally reddened by the persalts of iron. He says, moreover, that he has several times obtained from the stomach of subjects in the dissecting room, a liquor which reddened the salts of iron. We believe that the opinion of chemists now, is, in general, in accordance with the statements of the last named author. The means of distinguishing the sulphocyanate from the meconate is to be found in the action of chloride of gold or of corrosive sublimate, since if a few drops of a solution of either of these reagents be added to the red liquid, the color, if due to sulphocyanic acid, will be immediately destroyed. Further, the liquid may be diluted and a few drops of a solution of the acetate of lead added; a precipitate falls which is either meconate or sulphocyanate of lead. The former is insoluble, while the latter is quite soluble in acetic acid.(*u*)

§ 703. 9th. *Detection of opium or its constituents in organic mixtures.*—Various processes have been recommended for this purpose. All of them require delicacy and skill in manipulation, but from the comparatively infrequent opportunity of discovering any trace of opium in the body, we shall cite only the two most recent and probably the best.

The following is the process recommended by M. Flandin for the detection of the vegetable poisons in organic mixtures: "Mix the matter in question in the proportion of 12 to 100 of its weight of anhydrous lime or barytes, and rub them down together in a mortar; heat to perfect dryness but not to exceed 212° F.; treat the powdered matter, at least three times successively, with anhydrous, boiling alcohol, and, on cooling, filter. The liquid thus obtained is almost without color; it contains the principle or principles sought for, and also fatty or resinous matters soluble in alcohol. Distil or evaporate slowly by alcohol and treat the dry and cold residuum with ether so as to

(*t*) Mat. Med. Am. ed. ii. p. 1061.

(*u*) Taylor on Poisons, p. 503. For an elaborate account of the nature of the tests for morphia and meconic acid, the reader is referred to Dr. Taylor's work.

remove the fatty matters. If the principle sought for is insoluble in ether (as morphia, strychnia, brucia), it remains isolated in the liquid and can be separated by filtration and even simple decantation. If it be soluble in ether, then the principle must be obtained by a special solvent of the organic bases, as, for example, acetic acid, and precipitate the base finally by ammonia. The chemist in charge must adapt his tests to the supposed substance. I submit only the general method. I have mixed with 100 grains of animal matter a grain, or even less, of morphia, strychnia, and brucia; and operating on the mixture, in the manner described above, have collected from the mixture ponderable portions of the above poisonous principles. Again, I have added to the animal matters rough opium, laudanum, a decoction of nux vomica, false angustura, &c., and have isolated by this method the poisonous principles perfectly pure. In order to satisfy myself of the satisfactory application of it to legal medicine, I have poisoned animals with the smallest required doses of opium, morphia, nux vomica, strychnia, false angustura, and brucia, and it was always possible to detect the poison in the contents of the stomach and intestines, and sometimes, indeed, in the organs to which it had been carried by absorption. In a special experiment I mixed two parts and a half of morphia with one hundred of meat, and abandoned the compound to putrefaction for two months. At the end of that time, using the method above described, I discovered a notable proportion of morphia."(*v*)

§ 704. A still more elaborate, and perhaps more perfect process, is detailed by Professor Stas, of Brussels, justly distinguished for his admirable reports in the Bocarmé case: "The method I now propose for detecting the alkaloids in suspected matters, is nearly the same as that employed for extracting those bodies from the vegetables which contain them. The only difference consists in the manner of setting them free, and of presenting them to the action of solvents. We know that the alkaloids form acid salts, which are equally soluble in water and alcohol; we know also that a solution of these acid salts can be decomposed, so that the base set at liberty remains either momentarily or permanently in solution in the liquid. I have observed that all the solid and fixed alkaloids above enumerated, when maintained in a free state and in solution, in a liquid, can be taken up by ether when this solvent is in sufficient quantity. Thus, to extract an alkaloid from a suspected substance, the only problem to resolve consists in separating, by the aid of simple means, the foreign matters, and then to find a base, which, in rendering the alkaloid free, retains it in solution, in order that the ether may extract it from the liquid. Successive treatment by water and alcohol of different degrees of concentration, suffices for separating the foreign matters, and obtaining in a small bulk a solution in which the alkaloid can be found. The bicarbonates of potash or soda, or these alkalies in a caustic state, are convenient bases for setting the alkaloids at liberty, at the same time keeping them wholly in solution, especially if the alkaloids have been combined with an excess of tartaric or of oxalic acid." To put in practice the principles thus explained, the following method is proposed. "I suppose that we wish to look for an alkaloid in the

(*v*) Am. Journ. of Med. Sci. Oct. 1853, p. 542, from the Comptes Rendus.

contents of the stomach or intestines; we commence by adding to these matters twice their weight of pure and very strong alcohol; we add afterwards, according to the quantity and nature of the suspected matter from ten to thirty grains of tartaric or oxalic acid—in preference, tartaric; we introduce the mixture into a flask, and heat it to 160° or 170° Fahrenheit. After it has completely cooled it is to be filtered, the insoluble residue washed with strong alcohol, and the filtered liquid evaporated in vacuo, or it may be exposed to a strong current of air at a temperature of not more than 90° Fahrenheit. If, after the volatilization of the alcohol, the residue contains fatty or other insoluble matters, the liquid is to be filtered a second time, and then the filtrate and washings of the filter evaporated in the air-pump till nearly dry. If we have no air-pump, it is to be placed under a bell-jar, over a vessel containing concentrated sulphuric acid. We are then to treat the residue with cold anhydrous alcohol, taking care to exhaust the substance thoroughly; we evaporate the alcohol in the open air at the ordinary temperature, or still better, in vacuo; we now dissolve the acid residue in the smallest possible quantity of water, and introduce the solution into a small test-tube, and add little by little pure powdered bicarbonate of soda or potash, till a fresh quantity produces no further effervescence of carbonic acid. We then agitate the whole with four or five times its bulk of pure ether, and leave it to settle. When the ether swimming on the top is perfectly clear, then decant some of it into a capsule, and leave it in a *very dry place* to spontaneous evaporation." If the suspected alkaloid is solid and fixed, there may be or not a residue containing it. If there is, a solution of caustic potash or soda should be added to the liquid, and agitated briskly with ether. "This dissolves the vegetable alkaloid, now free, and remaining in the solution of potash or soda. In either case, we exhaust the matter with ether. Whatever be the agent which has set the alkaloid free—whether it be the bircarbonate of soda or potash, or caustic soda or potash—it remains, by the evaporation of the ether on the side of the capsule, as a solid body, but more commonly a colorless milky liquid, holding solid matters in suspension. The odor of the substance is animal, disagreeable, but not pungent. It turns litmus paper permanently blue."

In order now to obtain the solid alkaloid in a crystalline state, the foreign matters, with which it is generally solid, must be first removed. Prof. Stas, to accomplish this purpose, adds a few drops of water feebly acidulated with sulphuric acid, to the contents of the capsule, and thus forms an acid sulphate, which should be carefully decanted, evaporated in vacuo or over sulphuric acid, the residue treated with pure carbonate of potash, and the alkaloid dissolved out by absolute alcohol. The evaporation of the alcohol gives the alkaloid in crystals. By this process, Prof. Stas has isolated all the important fixed alkaloids previously mixed with foreign matters.(*w*) For the mode of obtaining the volatile alkaloids, the reader is referred to the article NICOTINA.

(*w*) Am. Journ. of Pharmacy, Jan. 1853.

II. *Hydrocyanic, or Prussic Acid.*

§ 705. 1st. *Qualities.*—The extreme energy of this poison in small doses is well known. The medicinal acid directed by the United States Pharmacopœia contains two per cent. of pure anhydrous acid. Very nearly the same proportion exists in the formulas of the British pharmacopœias. Scheele's acid, for medicinal use, should contain five per cent. of real hydrocyanic acid, but as sold, it is said usually not to exceed the strength of two per cent. The dilute hydrocyanic acid is a transparent, colorless, volatile liquid.

Its *taste* is described by Dr. Christison as acrid and pungent, and by others as hot or bitter; but it is probable, as remarked by Dr. Taylor, that the taste may be unperceived, when the dilute acid is taken in a fatal dose, concealed in porter or medicine.

Its *odor* is popularly supposed to resemble that of bitter almonds, but this notion is incorrect. It may have something of this odor, sufficient perhaps to recall it, and this peculiar smell may be recognized by some persons and not by others, but the impression usually made by it is indistinct, with the exception of a peculiar involuntary constriction of the fauces. The character of the odor is an important consideration in cases of supposed poisoning by prussic acid. If distinctly recognized by more than one person about the mouth of the deceased, or upon opening the body, it may afford strong reason for supposing that death was caused by this agent. But, as will be presently seen, this evidence is not obtained in every case.

§ 706. 2d. *Symptoms.*—The rapidity with which this poison acts upon the system hardly allows of the observation of successive symptoms. Where insensibility is not immediately produced, it is preceded by faintness, giddiness, loss of muscular power, and sometimes by convulsions. In other cases, the patient being found insensible, it is impossible to know the previous symptoms. When seen at this time, the eyes are fixed and glistening, the pupils dilated and unaffected by light, the limbs flaccid, the skin cold, and covered with a clammy perspiration; there is convulsive respiration at long intervals, between which the patient appears lifeless; the pulse is imperceptible, and involuntary evacuations occasionally take place. The respiration is slow, deep, gasping, and sometimes heaving or sobbing. This description, which is applicable to the greater number of cases, we have borrowed from Dr. Taylor. It should be added, that there is usually rigidity of the jaws, which has sometimes effectually prevented the administration of antidotes.

§ 707. 3d. The *period at which death takes place* is usually within an hour, seldom indeed exceeding three quarters of an hour. A man drank from a phial containing prussic acid, while embracing his wife; he died in fifteen minutes.(*x*) Seven epileptic patients, who were accidentally poisoned with this acid, died in convulsions within three-quarters of an hour.(*y*) In most cases, however, death occurs in a few minutes; and if life be prolonged for a period of three-quarters of an hour, recovery may take place. The rapidly fatal character of this poison is, indeed, one of its most striking features. From

(*x*) Pharm. Journ., Aug. 1851. (*y*) Orfila, vol. ii. 286.

experiments upon animals, it was supposed at one time that prussic acid was, necessarily, almost immediately fatal. Animals, poisoned by it, die within a few seconds. In man, however, although the symptoms often commence in the act of swallowing, they may also not be perceived for one or two minutes.

§ 708. Upon this fact depends often an important question, bearing upon the voluntary or homicidal nature of the poisoning, since it may become evident, from circumstantial evidence, that the deceased has retained consciousness and voluntary power for a certain length of time after swallowing the poison. In Mr. Burnam's case, mentioned further on, insensibility did not occur for two minutes after the poison was swallowed, and that in the largest dose yet recorded. In the case of a girl, aged seventeen, the servant of a chemist, who was seen by the reporter when already insensible, the retention of consciousness for a short period, was proved by circumstantial evidence. In turning up the feather bed, after the body had been removed from it, a prussic acid bottle, with the stopper in, was found between it and the mattress, near the centre; it contained about eight drops of the acid. The girl's mistress stated, that about twenty minutes after the girl had left her, she was proceeding up stairs to bed, when, in passing the girl's room door, she heard a moaning noise; she entered the room, and found her lying in bed, with her clothes on, and the bedclothes drawn up to her face, apparently "gasping for breath." She instantly gave the alarm. "The evidence adduced proved, as far as *could* be proved, that she had swallowed an ounce of the acid, re-corked the phial, thrust it to full arm's length between the feather bed and the mattress, got into bed, and then drew the clothes over her body, and there appeared to have been no convulsions."(*z*) Dr. Sewell reports, in the same journal, the interesting account of a gentleman who swallowed seven drachms of the medicinal acid, equal to twenty-one grains of Scheele's acid. It was proved that after taking the poison he had walked from the table in the middle of the room to the door, unlocked it, called for assistance, and then returning to a sofa in the room, stretched himself upon it. Here he was found lying as if in a profound slumber, his legs crossed, his arms by his side, and his eyelids firmly closed. The eyes were more brilliant than during life, and continued so until the next day. His face was livid, and the lips very blue; the muscles were all relaxed.(*a*) A young man swallowed, in his bedroom, a dose equivalent to 2.54 grains. He then descended thirty steps, and walked about twenty paces, before he became powerless. He was endeavoring to open the front door of the house to go out, when he suddenly fell. The only symptoms observed by a person present were, that "he threw his arms about, and made a noise in breathing, fetching it hard; he very soon became still."(*b*) A case which is characterized by Dr. Taylor as one of the most extraordinary on record in this respect, is that related by Mr. Godfrey: "A gentleman, aged forty-four, swallowed, it was supposed, half an ounce of prussic acid (strength not stated), but certainly a quantity sufficient to destroy life. After taking it

(*z*) Boston Med. and Surg. Journ. vol. xxxii. p. 528. Leithead.
(*a*) Ibid. vol. xxxvii. p. 320.
(*b*) Lowe, Guy's Hospital Rep , 1846, p. 490.

from the bottle, he walked ten paces to the top of a flight of stairs, descended the stairs, seventeen in number, and went to a druggist's shop at forty-five paces' distance, where he had previously bought the poison, entered the shop, and said, in his usual tone of voice, 'I want some more of that prussic acid!' He then became insensible, and died in from five to ten minutes after taking the poison." There were no convulsions.

Such cases as these (and more might be quoted) fairly prove the untenable nature of the notion, that any acts indicative of design, committed after the poison had been swallowed, cannot be attributed to the deceased. Many simple acts, like those noted, can be easily performed in a very short space of time, and scarcely take anything away from the fearfully rapid character of this poison.

Another fallacy, derived from the result of experiments on animals, is the supposition that death from prussic acid is always preceded by a shriek! There is no case in the human subject which attests any such fact; on the contrary, in the vast majority of cases, there are neither general convulsions, as is common in animals, nor any unusual cry, but on the contrary, death comes on in a placid manner, the patient passing away without a struggle. The convulsions which were observed in the seven epileptic patients, already referred to, may, with some probability, be referred to their constitutional predisposition. In a case of suicide by a dose equivalent to eight grains (reported by Dr. J. G. Fleming), the appearance of the body was most strikingly like life, even the natural color had not left the cheek, the features were composed, and the limbs relaxed. There evidently could have been no convulsions.(*c*)

§ 709. 4th. The *smallest quantity* of anhydrous prussic acid capable of destroying life has so far, from actual observation, proved to be about nine-tenths of a grain. This was the amount which destroyed a woman mentioned by Mr. Hicks.(*d*) Life was extinct in twenty minutes. This quantity is equal to fifty drops of acid of the strength of two per cent. Other cases have been reported in which most alarming symptoms ensued from smaller doses.(*e*) In any case in which it appears that a death has resulted from a small quantity, it is highly important, if we would avoid errors, that the real strength of the acid should be ascertained by an analysis of the sample remaining.

§ 710. 5th. Instances of *recovery from very large doses* have been recorded. Dr. Christison has reported a case in which, with great difficulty, a gentleman was restored who had taken between a grain and a half and two grains of the anhydrous acid;(*f*) and, still more recently, Mr. W. H. Burnam communicated to the *Lancet* a very interesting history of the recovery of his father from accidentally taking a drachm of Scheele's acid, which was found, upon analysis, to contain 2.4 grains of anhydrous acid.(*g*) Mr. Nunneley, also, has reported a case of recovery from one grain and a third of anhydrous acid.(*h*) One curious fact, in relation to the size of the dose, should not be forgotten, viz., that a comparatively small dose will produce equally fatal

(*c*) Ed. Monthly Journ. July, 1846.
(*d*) Lond. Med. Gaz. xxxv. 896.
(*e*) Vid. Taylor on Poisons.
(*f*) Med. Gaz. 1850, 917.
(*g*) Brit. and For. Med.-Chir. Rev. April, 1854.
(*h*) Taylor.

results with a large one, it being highly probable, from the cases so far recorded, that all doses over one grain are capable of destroying life with equal certainty and rapidity. The limits of safety, in the use of prussic acid, are easily passed, and the formidable symptoms occasioned by it, develop themselves with wonderful rapidity; hence, too great caution cannot be observed in its administration, with remedial views, in medical practice.

M. Regnauld relates the case of a young man who was poisoned by the *vapor* of prussic acid disengaged from a mixture of the ferrocyanide of potassium and sulphuric acid. The symptoms were those of asphyxia, rather than of the nervous prostration which usually accompanies poisoning from the internal use of prussic acid.(*hh*)

§ 711. 6th. *Post-mortem appearances.*—The face is either lived or pale; the lips and nails blue; and the skin of the neck, back, and shoulders, much discolored. The jaws are firmly closed; the muscles of the hands and feet contracted, and cadaveric rigidity comes on sooner and is more perfect than usual. The eyes have a peculiar brilliant and glistening appearance, the pupils are widely dilated, and foam is sometimes seen about the mouth. Evidence of involuntary evacuation of the bladder and rectum is not unfrequently observed. The veins of the brain are found turgescent, and the lungs are congested with a very dark colored blood. Orfila says that the mucous membrane of the air-passages has generally a dark-red color, which cannot be removed by washing, and the bronchial tubes are filled to their extremities with a bloody froth. The heart presents nothing abnormal. The mucous membrane of the stomach is, in perhaps the majority of cases, highly reddened, and this deepening of color may extend for some distance into the intestinal tube. In a case reported by Jochner, and in a few others, a chocolate colored fluid had been found in the stomach. The blood is generally dark and fluid, sometimes also of a purplish color. It will readily be seen how insignificant are the pathological alterations found in those who have been killed by prussic acid. There is no one of the appearances here noted which may not be met with in death from many other causes, and especially in sudden death by some mode of asphyxia.

§ 712. The only circumstance which is at all deserving of attention, and which merits a separate consideration, is the presence or absence of the odor of prussic acid. It may be at once stated that where this odor is unequivocally detected, the evidence is satisfactory, since it is of so peculiar a character as not to be readily mistaken for anything else. Unfortunately, however, it is not always discovered, even in well attested cases of poisoning by this substance. The odor is sometimes observed about the mouth and nostrils of the deceased, and is not perceived in the stomach. This was the case, in an instance reported by Jochner, of a young man who committed suicide by this poison. On the other hand, the stomach may exhale the odor of prussic acid and none be perceived about the mouth or in the room. This was noted in the case reported by Mr. Hicks, in which, moreover, the examination of the body was not made until *ninety* hours after death. On opening the chest, the odor

(*hh*) Brit. and For. Med.-Chir. Rev. Oct. 1852, p. 561.

was more plainly perceived than in any other part of the body, and the fluid contained in the stomach smelt very strongly of prussic acid.(*i*) In none of the epileptic patients before mentioned was the odor of prussic acid discovered in any part of the body. The inspection was made twenty-four hours after death. Dr. Christison's case of recovery from a large dose may be referred to here, as corroborative of these facts; the first liquid drawn from the stomach by the tube which he introduced, gave indications of the presence of prussic acid, on analysis, but not by any peculiar odor, although there was none other by which it might have been concealed. The stomach of Sarah Hart, poisoned by Tawell, had no odor of prussic acid, yet one grain of anhydrous acid was obtained, by distillation, from its contents, consisting partly of apple pulp. In the greater number of cases, however, there can be no doubt that it is readily distinguishable, since in some it has been so strong as to seriously affect the bystanders. The circumstances which cause these singular variations have not been thoroughly investigated. It is supposed, very naturally, that the length of time the person has survived after taking the poison, and the interval elapsing between death and the inspection of the body, must, as well as the dose, have an influence upon the preservation of the odor. But it is evident that these conjectures are not entirely satisfactory, since not only has the odor been detected after as long an interval as seven days, but, on the other hand, it has not been detected even where the presence of the acid has been demonstrated by chemical analysis. It is probable that in these cases it may have been fixed by a base.

§ 713. Hydrocyanic acid may be obtained from many vegetables, particularly those belonging to the sub-orders Amygdaleæ and Pomeæ;(*j*) as from bitter almonds, apple-pips, the kernels of peaches, apricots, cherries, plums, and the flowers of the peach, and cherry-laurel, and from the bark of the wild cherry, and the root of the mountain-ash. Prussic acid does not exist ready formed in these plants, but is the result of the reaction of water upon amygdalin. Hence, if any of the above substances are found in the stomach, the question may arise whether the indications of the presence of prussic acid are due to them or to the acid swallowed as such. The only manner in which doubt arising from this circumstance can be satisfied, is by obtaining, by chemical analysis, a larger quantity of the acid from the contents of the stomach, than these substances could afford. It is extremely improbable that death should result from the ingestion of any of these articles except in such a large quantity as to obviously preclude the idea of prussic acid in substance having been taken.

It has been stated that this acid may be produced spontaneously from unsound cheese; but Dr. Taylor was unable, by experiment upon numerous samples of decayed cheese, to find any evidence of it. The notion, also, that it may be a spontaneous product of animal decomposition, is timidly advanced by Orfila, but has not as yet received the necessary confirmation. It is also said to be produced by the action of nitric acid on alcohol. This fact was clearly ascertained by M. de Claubry, who observed the serious effects of the vapor upon

(*i*) Med. Gaz. xxxvi. 460.

(*j*) Pereira.

the health of the workmen engaged in the manufacture of hyponitrous ether.(*k*)

§ 714. While these objections must be allowed their full force in cases where their applicability can be shown, it by no means follows that, where no chemical process further than mere distillation is employed, and where none of the organic matters above mentioned are found in the stomach, that the distinct evidence of the presence of prussic acid, by odor and by the simple chemical reactions to be presently noticed, ought not to be perfectly satisfactory. Moreover, if the mode of death be known, these objections will fall away of themselves. If, however, none of the circumstances preceding death can be ascertained, and neither the odor of prussic acid nor its reactions with the established tests be recognized, it may certainly become a question of serious import, whether the traces of it found afterwards may not be due to some other cause than its ingestion into the stomach. Thus, if the contents of the stomach be subjected to distillation, *with an acid*, it may possibly happen that the sulphocyanide of potassium, which sometimes exists in minute traces in the saliva, may be decomposed, and evidence of prussic acid be thus obtained. For the value of these objections, we must refer the reader to the more detailed treatises on Poisons, especially to those of Drs. Christison and Taylor, and to Orfila's *Médicine Légale* and *Toxicologie*.

§ 715. *Bitter almonds.*—A lad of fifteen, the son of a wholesale grocer, got access to a cask of bitter almonds, and consumed a large quantity of them with sugar. After a time, but how long is not known, he felt a pleasing sensation, then became suddenly giddy, fell down, and lost his consciousness and recollection. He was found lying insensible near the cask. Ammonia and carbonate of potash were successively administered and the stomach pump employed. By these means he was much relieved. Emetics were then given, and he threw off, in the course of half an hour, as much as *eight ounces, Troy*, of bitter almonds.(*l*)

§ 716. 7th. *Chemical tests.*—The best tests for hydrocyanic acid are three in number. They are equally adapted to its detection in its simple state and mixed with organic liquids. In the latter case, if the vapor cannot be detected by the tests, the liquid must be filtered and reduced by distillation, the acid being fixed by caustic potash or nitrate of silver.

§ 717. (1.) *The iron test.*—Add sufficient caustic potash to the suspected acid to saturate it; then a solution of some proto and sesqui salt of iron, such as the partially oxidized sulphate of iron; a dirty green or brownish precipitate falls. Then add diluted sulphuric or hydrochloric acid, when *Prussian blue* will immediately appear if hydrocyanic acid is present. If this be in very small quantity in the liquid, the color will be bluish green, but a blue precipitate will gradually fall. By means of this test Dr. Christison discovered prussic acid in the liquid first withdrawn from the stomach by the stomach pump, although there was no smell of it upon the breath or upon the person, and only a very equivocal odor in the liquid itself. Two drops of the solution of potash were added to half an ounce of

(*k*) Ann. d'Hyg., 1839, ii. p. 350. (*l*) Ed. Month. Journ. Oct. 1850, p. 379.

the clear fluid, then a few drops of the two sulphates of iron mixed in the proportion of one equiv. of sesquioxide sulphate, and two of the protoxide sulphate, and, lastly, a single drop of sulphuric acid. A considerable precipitate of Prussian blue was obtained instantly and characteristically.(*m*) Dr. Carson observes that this test will detect hydrocyanic acid when it is mixed with common salt, or other chlorides which interfere with the reaction of nitrate of silver. It is, on the whole, a delicate test when properly employed; but a frequent cause of failure in its application is the addition of too much potash, or of the iron salt. The Prussian blue formed is decomposed by an excess of potash, and if the quantity of iron be too large, the liquid, when the surplus oxide of iron is dissolved by an acid, will acquire a yellow color, and give a greenish tint to the small quantity of Prussian blue formed at the expense of the hydrocyanic acid. The *vapor* of prussic acid may also be detected by this test, by means of the following expedient: Put a drop of the solution of potash in a small white saucer, and invert it over another containing a portion of the suspected liquid. After two or three minutes, or more if the acid be much diluted, remove the upper saucer and drop on the potash a drop of the solution of the green sulphate of iron; agitate and expose to the air for a few seconds; add one or two drops of dilute muriatic acid, to dissolve the surplus oxide of iron, and if hydrocyanic acid is present, a trace of Prussian blue will appear. This test may be conjoined with the silver test, both in its application to the liquid and to the vapor, for if the cyanide of silver formed in that test be decomposed by muriatic acid, prussic acid being liberated will of course give the reactions just described.

§ 718. (2.) *The silver test.*—The nitrate of silver causes, in a liquid containing prussic acid, a clotted white precipitate of the cyanide of silver, which is known by its solubility in boiling nitric acid, by its decomposition by muriatic acid, and by its evolving cyanogen gas (known by its inflammability and flame of a carmine color) when carefully dried and heated in a small reduction tube drawn to a fine point. The *vapor* of prussic acid may be detected also by this test. A watch-glass may be moistened with nitrate of silver, and inverted over a vessel containing this acid; very soon an opaque white film of the cyanide of silver forms upon the moistened spot. Dr. Taylor states that one drop of the officinal acid (containing less than $\frac{1}{60}$th of a grain of the anhydrous acid) produces speedily a visible effect.

M. O. Henry has also suggested the following method of determining whether the precipitate contains the cyanide of silver. From one-third to one-half of a grain of the precipitate should be boiled for five or six minutes in a small tube with half its weight of chloride of sodium or potassium, and six or seven fluidrachms of distilled water. If the precipitate contains a cyanide, an insoluble chloride of silver and a soluble cyanide of sodium or potassium will be formed. The latter being filtered, treated with a small quantity of freshly prepared green hydrated oxide of iron, is heated again and filtered. It then contains a ferrocyanide of potassium or sodium, and, if treated by a

(*m*) Med. Gaz. 1850, p. 917.

salt of the sesquioxide of iron, gives a Prussian blue color, and, if by the sulphate of the deutoxide of copper, a chestnut-colored precipitate.

M. Henry and M. Hubert have also proposed the following very satisfactory test. The cyanide of silver having been prepared according to the method referred to above, and thoroughly dried, is introduced into a tube closed at one end, and from five to seven inches long, and containing at its closed extremity about half the weight of the cyanide in iodine. On heating this end of the tube very gently, beautiful snow-white crystals of iodide of cyanogen are deposited upon the cool portions of the tube.(*mm*)

§ 719. (3.) *The sulphur, or Liebig's test.*—This test was first proposed by Liebig, and is the most delicate one yet discovered, as it will not only indicate the presence of prussic acid when no *odor* can be perceived, but when the other tests have failed to detect it. Dr. Taylor says that it detected clearly so small a quantity as the 0.3930th of a grain, and that in an experiment in which ten drops of a liquid containing only one 473d part of a grain of anhydrous prussic acid, produced the characteristic reaction with hydrosulphuret of ammonia in five minutes. The manner of applying the test is as follows: "If a small quantity of hydrosulphuret of ammonia (containing a little excess of sulphur) be added to a few drops of the solution of prussic acid, and the mixture be gently warmed, it becomes colorless, and, on evaporation, leaves sulphocyanate of ammonia, the sulphocyanic acid being indicated by the intense blood-red color produced on adding to the residue a solution of a persalt of iron; this color immediately disappears on adding one or two drops of a solution of corrosive sublimate. This test is very delicate, and it therefore requires some care in its application; thus, if the boiling and evaporation be not carried far enough, the persalt of iron will be precipitated black by the undecomposed hydrosulphuret of ammonia; and if the heat be carried too far, the sulphocyanate of ammonia may itself undergo decomposition and be lost."(*n*) "The great utility of the sulphur test, however, is in its application to the detection of the minutest portion of prussic acid when in the state of *vapor*. In this respect it surpasses any process yet discovered. In order to apply it we place the diluted prussic acid in a watch-glass, and invert over it another watch-glass, holding in its centre one drop of the hydrosulphuret of ammonia. No change apparently takes place in the hydrosulphuret; but if the watch-glass be removed after the lapse of from half a minute to ten minutes, according to the quantity and strength of prussic acid present, sulphocyanate of ammonia will be obtained on gently heating the drop of hydrosulphuret, and evaporating it to dryness. With an acid of from three to five per cent. the action is completed in ten seconds. The addition of one drop of persulphate of iron to the dried residue brings out the blood-red color instantly, which is intense in proportion to the quantity of sulphocyanate present. When the prussic acid is excessively diluted, the warmth of the

(*mm*) Bull. de l'Acad. de Méd. xxii. 350.

(*n*) The terms in the text, "hydrosulphuret of ammonia," and "sulphocyanate of ammonia," should more properly be sulphide of ammonium, and sulphocyanide of ammonium, or rhodanide of ammonium.

hand may serve to expedite the evolution of the vapor."(*o*) The tests for the *vapor* are equally applicable to organic mixtures and to the detection of the poison in the blood, secretions, or soft tissues.

§ 720. (4.) *Detection after death.*—Notwithstanding the readiness with which prussic acid undergoes decomposition, it has been detected in the body after death. Rieckher detected it in the contents of the stomach by the sulphur test, twenty-four hours after death.(*p*)

Mr. West was able to detect it, on distillation, by the odor and the silver and iron tests, *twenty-three* days after death, although no pains had been taken to insure its preservation.(*q*) In the following case it will be seen that it was detected after about the same period of time.

A young man of Tours having purposely poisoned himself with medicinal hydrocyanic acid of the twelfth degree, of which he appeared to have swallowed about twenty-five grammes, M. Brame was called upon, after the lapse of *three weeks*, for the purpose of trying whether it was possible to detect hydrocyanic acid in the body. He was able to detect and estimate a considerable quantity of this poison which had remained in the stomach. By the addition of neutral and pure nitrate of silver, there was formed an abundance of a flocculent and yellowish precipitate, which, well washed and dried under the air-pump, and then heated for a few seconds on a sand-bath, assumed a gray color. This precipitate was soluble in ammonia and cyanide of potassium. Decomposed hot with potassium, cyanide of potassium was formed, with which it was easy to obtain hydrocyanic acid and Prussian blue. Suspended in water, and subjected to the action of a current of hydrosulphuric acid, it gave rise to a clear and limpid solution of hydrocyanic acid when the sulphuret formed had been separated by filtration. By means of hydrochloric acid, hydrocyanic acid could be obtained from it of a very powerful odor, and the vapor of which formed a white precipitate in a solution of nitrate of silver; the precipitate was soluble in ammonia. The first precipitate, heated in a lamp, in a narrow tube closed at one end, gave hydrocyanic acid and a few drops of water, &c. This same precipitate, gently heated with caustic potassa, gave rise to no disengagement of ammonia.

In this case the hydrocyanic acid had remained in the stomach three weeks after burial. It did not appear to have entered into any chemical combination. There was a very considerable quantity of it, for, says M. Brame, "I was able to collect about 0.60 of cyanide of silver, or nearly 0.120 of hydrocyanic acid."(*r*) In the "Eaglesham" poisoning case it was detected in the stomach of the body which had been buried fourteen days;(*rr*) and in a recent German case three weeks after death.(*s*)

§ 721. 8th. The essential *oil of bitter almonds* is most active as a poison, and has repeatedly been the cause of death. It is stated that in one year the daily papers of London furnished accounts of ten cases of poisoning by it.

(*o*) Taylor on Poisons, p. 548.
(*p*) Canstatt's Jahresbericht für 1852, Bd. vii. p. 49.
(*q*) Prov. Med. Journ. July 23, 1845.
(*r*) The Chemist, Feb. 1855, from Comptes Rendus, No. 20, Nov. 13, 1854, by M. Brame.
(*rr*) Edinb. Med. Journ. iv. 163.
(*s*) Brit. and For. Med.-Chir. Rev. April, 1860, p. 531.

Dr. Maclagan, who has made some valuable observations respecting it,(ss) states that the ordinary commercial essential oil of bitter almonds consists of a peculiar oil (hydruret of benzule), to which its peculiar aroma and pungency are due, associated with anhydrous prussic acid. The hydrocyanic acid can be separated from the hydruret of benzule without impairing the peculiar flavor of the oil, and yet leaving it comparatively innocuous. Much of the difference of opinion which has reigned as to this fact arises from the circumstance that by merely agitating the oil with a large excess of lime or caustic potash, and distilling it, the prussic acid is not sufficiently separated. A salt of iron should be employed, which fixes it more effectually. Dr. Maclagan made experiments upon dogs with the oil thus rectified, and found that when no trace of prussic acid could be detected by the iron test, it was not poisonous. The following are the most prominent of his conclusions: 1. That the poisonous action of the unrectified oil is essentially due to the hydrocyanic acid which it contains. 2. That the oil really free from prussic acid, in doses of a few drops, does not act as a poison on animals generally. 3. That although the rectified oil, in doses of a drachm and upwards, does prove fatal to rabbits, yet that on dogs, whose organization renders them much better subjects for testing the probable effects of the substance on man, doses even so large as three drachms of the oil, entirely or nearly free from prussic acid, produce no other effect than a little vomiting, and do not cause death, or even dangerous symptoms.

The same results have in the main been obtained by other chemists, particularly Wöhler and Frerichs.

Why the deadly ingredient should be allowed to remain in it, if it can be so readily removed, it is not easy to understand. The placing of restrictions upon the sale of this and other articles of a pernicious character, for the purpose of flavoring or ornamenting articles of food, appears to us to be of still more urgent importance than any restraint upon the sale of arsenic and similar poisons, which cannot be employed except for destructive purposes. In the latter case means are readily found to obtain the required poison; while in the former, experience has shown that equal brilliancy of color and delicacy of flavor can be obtained from harmless substances as from the deadly poisons in universal and daily use in this country and England. Prussic acid is too potent a poison to be distributed to cooks and confectioners, disguised with the pleasant odor of bitter almonds; the most ordinary prudence and humanity would seem to demand that it should not be used thus freely and incautiously.

§ 722. The following are a few of the instances in which the oil of *bitter* almonds has produced fatal results:—

A child, eight and a half years old, took a teaspoonful of *ratafia*, containing seven drops of the oil of bitter almonds. She became immediately insensible, but had no spasms; the limbs were relaxed, the jaw, however, firmly closed; the eyelids closed, but the eyes brilliant and glassy, although without expression. Cold affusion, emetics, and stimulants restored her, and in twenty

(ss) Edinb. Month. Journ. Jan. 1854.

minutes her consciousness returned.(*t*) The general symptoms of poisoning with the oil of bitter almonds resemble very closely those by pure prussic acid, the principal difference being that in the former they are perhaps less instantaneous or immediate in their accession, and that the duration of life is somewhat longer. Nevertheless, cases of very rapid death from this oil are recorded.

Dr. Taylor mentions the particulars of a case referred to him, in which it was probable that the whole duration of the case did not exceed *seven* minutes, and the man was not seized by the peculiar symptoms of poisoning until *five* minutes after he had taken the dose. During this time he was conscious and self-possessed, and replied rationally to questions put to him.

In a case related by Mertzdorff, in which two drachms of the ethereal oil of bitter almonds were swallowed, death occurred in half an hour. Another one, related by Dr. Taylor, is remarkable not only for its termination in a similar short space of time, but from the fact of the smallness of the dose, which was only *seventeen drops*. A druggist swallowed half an ounce of "almond flavor," equivalent, it is said, to thirty drops of the oil. He fell insensible in less than half a minute. This case presents, moreover, this peculiarity, that there was a temporary remission of the symptoms. He was sensible for a few minutes, and spoke on the nature of his attack, but gradually again relapsed into a delirious and apparently very happy state. His eyes were extremely brilliant, but the pulse was quick and intermittent, and the whole body cold. He gradually recovered from the effects of the poison.(*u*) This case is a very extraordinary one; the peculiar effects cannot well be attributed to the smallness of the dose, since, as we have already seen, little more than half the quantity has proved fatal, and in this case it was strong enough to produce almost immediate insensibility. Mr. Iliff has reported a case in which death must have been very rapid. It is that of a young woman who poisoned herself in the Zoological Gardens, London. A small phial containing a drop or two of the oil of almonds was found in the pocket of her dress, with the cork pushed in.(*v*) In addition to the similarity in symptoms, the post-mortem appearances of this substance resemble those of prussic acid. The same placid and natural expression of countenance, and the same purplish color and fluid condition of the blood, are here found. But the odor is uniformly present, generally more or less about the mouth, but, in all the cases yet reported, very characteristic and penetrating in the stomach and cavities of the body generally. It is very persistent, and may be discovered several days after death.

§ 723. The oil of bitter almonds is about four times as strong as the medicinal hydrocyanic acid of the United States Pharmacopœia. It is of a yellow color, has a bitter, acrid, burning taste, and is slightly soluble in water. The almond flavors and essences so much used in cooking are solutions of the oil in spirit, and may prove highly dangerous in the hands of ignorant people. Enough prussic acid is contained in less than an ounce of most of these flavors to produce fatal effects, and it is evident that smaller quantities might have the same result in the case of children.

(*t*) Lancet, June 8, 1844.
(*u*) Lancet, Sept. 1839, p. 930, Mr. Chavasse.
(*v*) Lancet, April, 1850.

There is a case related by De Keyser, which appears to show that the application of this oil to the skin may be dangerous. A lady used about half an ounce of it in mistake for an oil intended to make the hair grow. That the vapors of the oil did not occasion the symptoms is probable, because the waiting-maid, who assisted her, was unaffected. She was seized with a coldness extending from the head and spine to every part of the body, followed by ringing in the ears and unsteadiness, deafness, swimming of objects before the eyes, and impaired power of moving the limbs. She fell insensible, and in a state of collapse resembling syncope. She gradually regained her consciousness, but the sense of coldness continued for several hours.(*vv*)

§ 724. 9th. *Apricot kernels.*—At Arles, a child ate two or three apricots; but, not content with this, also took the kernels inclosed in the fruit. Very soon after he was seized with convulsions, and died in spite of every attention.(*w*)

§ 725. 10th. *Peach kernels.*—Dr. Keating, of Philadelphia, has reported a very interesting case, in which he succeeded, by affusion of cold water, in restoring a child three years of age, who had eaten a quantity of peach kernels. The child was seized suddenly, and when seen was found insensible, with slow, deep, sobbing respiration, no convulsion of the limbs, but slight twitching of the mouth, icy-cold extremities, finger-nails livid, hands slightly clinched, eyes prominent, and pupils dilated. A strong odor of prussic acid was perceived about the mouth. An emetic brought up a large quantity of peach kernels, emitting the characteristic fragrance.(*x*) Another case is reported, in which the kernels of the cherry proved fatal to a child of five years, after forty hours' illness.(*y*)

§ 726. 11th. *Cherry-laurel water.*—The following case of poisoning by this liquid is remarkable for the slowness with which the symptoms supervened, and the unusually long duration of life. A hypochondriac of advanced age drank one morning an ounce and a half of cherry-laurel water. The symptoms of poisoning did not come on for *three* hours. Then the hands and feet became paralyzed, and the head fell forward upon the chest. Involuntary discharges from the rectum and bladder took place. The extremities, though cold and immovable, were not insensible. The pulse was small, the voice hoarse but distinct, and the intellect perfect. The patient observed with pleasure the incessant progress of the weakness; he died in the evening, without pain or convulsions. On dissection, the blood was found gluey, and of a peculiar dark color; but no odor of bitter almonds was detected. The celebrated trial of Capt. Donellan, in 1781, on a charge of poisoning Sir Theodosius Boughton with this liquid, is no doubt familiar to the reader.(*z*) Cherry-laurel water is of uncertain strength, since the leaves gathered in the spring contain more prussic acid than when collected and distilled in the middle of summer. It also becomes weaker by being kept. The medical dose is from forty minims to a fluidrachm.

(*vv*) Journ. f. Pharmakodyn. 1857, p. 588.
(*w*) Quoted in Am. Journ. Med. Sci. Jan. 1853.
(*x*) Trans. of Phil. Coll. of Physicians, vol. iii. No. 3.
(*y*) Philad. Med. Exam. July, 1845.
(*z*) Vid. Beck's Medical Jurisprudence, vol. ii.

§ 727. 12th. *Cyanide of potassium.*—This substance is equally destructive and rapid in its effects with the free hydrocyanic acid. The symptoms are exactly similar to those produced by this poison, as are also the post-mortem appearances. Dr. Finnell, however, reports having met with intense redness of the gastric mucous membrane in three cases of fatal poisoning by this salt.(*l*) But Dr. Schauenstein found a dark red color of the membrane with bloody points, in only two out of five cases,(*m*) and attributes this peculiarity to the caustic operation of the alkaline solution in a concentrated state, and when the stomach contains but little food. The odor of prussic acid is less striking, and less frequently perceived in poisoning with this salt. In a case of sudden death from it reported by Casper, there was no unusual odor, although the nature of the poison was detected by chemical analysis.(*n*) The reaction of the contents of the stomach is always alkaline, and, according to Schauenstein, prussic acid can always be detected in them by the addition of formic acid. The writer states it as probable that the former is in every case converted into the latter. The quantity capable of proving fatal may be stated at from two and a half to five grains, since the former quantity is equal to one grain of anhydrous prussic acid. The fatal dose must necessarily vary with the strength of the preparation, and this is very different for different specimens. The strongest is made by saturating a solution of potassa with prussic acid. A man aged thirty, died in a quarter of an hour after taking fifteen grains, prescribed for him by his medical attendant, in mistake for the ferrocyanide.(*o*) Dr. Perry related the following case to the Boston Society for Medical Improvement. A nurse administered this poison by mistake, to a child who had a slight cough, instead of a cough mixture, which stood near the bottle of solution of the cyanide. The immediate effects of the dose were vomiting and convulsions; then insensibility, locked jaw, coldness of extremities, which were pendulous and without muscular power; diminished frequency of respiration (twelve to sixteen per minute), the pulse small but distinct, sixty per minute; the circulation languid, pupils dilated, sphincters paralyzed; the teeth closed so firmly and continuously, that only once or twice could anything be poured into the mouth. Dr. P. saw the child in fifteen minutes after the accident, and found it in a warm bath and insensible. It was treated by stimulants and the inhalation of ammonia. Death was sudden, and no *post-mortem* examination was made. The child lived *one hour and a half.*

A case is reported by Dr. C. E. Ware, of a woman who died in less than an hour from taking seven grains of this salt in a teaspoonful of liquid. Death occurred by gradual syncope.(*p*) In Vienna, Dr. Schauenstein met with five cases of fatal poisoning by this substance, in the course of eighteen months. In all of them the death seems to have been sudden. In one case, in a young girl, strong tetanic spasms came on directly after the poison had been taken.(*q*) The same symptom, with severe abdominal pains, occurred in

(*l*) Am. Med. Times, i. 33.
(*m*) Prager Vierteljahr. lxv. anal. 14.
(*n*) Vierteljahrschrift, July, 1854.
(*o*) Henke's Zeitsch. Bd. 45, H. 1, p. 6.
(*p*) Boston Med. and Surg. Journ. Dec. 1856, p. 387.
(*q*) Br. and For. Med. Chir. Rev. Oct. 1859, p. 530.

a case reported by Prof. Wagner, of Leipzig.(*a*) The root and the juice of *Cassava* (Jatropha Manihot) produce symptoms identical with those of prussic acid, but, in general, they are less intense. De Keyser relates that three children who had eaten of the former, and an adult negro who had drunk about six ounces of the latter, recovered.(*b*)

III. *Chloroform and Ether.*

§ 728. 1st. *When injurious.*—These anæsthetic agents, now so much used in surgical, dental, and obstetrical practice, in the form of vapor, are, as is well known, capable of producing fatal effects. Occasionally death has been due to their mal-administration, the patient being either unfitted to respire them, or having been required to inhale them unmixed with atmospheric air, or for too long a time. Such accidents have been extremely few in the case of ether, and since the proper mode of its administration has been understood, that is, since care has been taken to admit a sufficient proportion of atmospheric air along with the ether into the patient's lungs, there is not a single authenticated example of its having destroyed life. Chloroform being more energetic and rapid in its action, has so frequently been the evident cause of death, that the operator cannot be too careful to ascertain its purity, and the probability of his patient being able to bear it, and to see that he does not inhale it to the exclusion of the atmospheric air, or for too long a time.

§ 729. 2d. *Symptoms.*—Notwithstanding every precaution, however, occasionally death will suddenly occur in the most unexpected manner from its inhalation. This has occurred in the practice, and under the supervision of the most eminent surgeons. Many cases have been published, which it would, however, be tedious to enumerate.(*c*) We append, however, one or two by way of illustration. Patrick Coyle, chloroformed for fistula; he inhaled for about a minute and almost instantly expired.(*d*) Abbey Pennock inhaled about three drachms in two applications, to relieve the pain of toothache, and died almost immediately after the second application.(*e*) John Griffiths had chancres and hæmorrhoids; inhaled about three drachms, and died in about ten minutes, during the incision of the hæmorrhoids.(*f*) In the case of Madame Labrunne, related by M. de Confevron, the fatal effects were manifested in eight seconds, and the operator remarked constant winking of the eyelids. The patient repulsed the dentist's hand, making signs that the effect was not complete. She then made four or five fuller inspirations. At that instant, M. de Confevron removed the handkerchief, and only took his eyes off her for the instant occupied by placing it on the table; but in this brief instant, he found the patient's face turned pale, the lips discolored, the features altered, the eyes turned upwards, the pupils horribly dilated, the jaw closed, the head

(*a*) Archiv f. Phys. Heil. 1859, p. 417.
(*b*) Journ. f. Pharmakodyn. 1857, p. 586.
(*c*) Dr. Crisp laid before the Medical Society of London a table which he had made, of the recorded deaths from chloroform up to June, 1853. They amounted to *forty-two*. At the end of 1859 they had already exceeded sixty in number.
(*d*) Dr. Warren. Effects of Chloroform, &c. Boston, 1849.
(*e*) Ibid. (*f*) Ibid.

drawn backwards; the pulse could not be felt, the limbs were all relaxed, and a few inspirations at long intervals were the only indications of life.(*g*) Such cases as these can leave no doubt upon the mind that death was attributable solely to the inhalation of chloroform, and that it may occur with a celerity unparalleled by any other poisonous agent whatever. In cases of ordinary surgical practice, when the chloroform is administered by a competent person, and with those precautions which experience has shown to be necessary, the surgeon is probably not culpable in the eye of the law; but increasing familiarity with its soothing effects, and ignorance of its toxical properties, may be the source of fatal results in the hands of unqualified persons. A case bearing upon this point has been reported.(*h*) Here the chloroform was procured and administered by a nurse, to a woman in labor, contrary to the injunction, and without the knowledge of the physician. The woman's death could be attributed to no other cause than the inhalation of chloroform.

§ 730. The external phenomena of etherization, whether produced by chloroform or ether, are very nearly alike. There is usually at first a little cough, with expectoration of mucus and a flow of saliva, and some laboring of the respiration; then the inspirations become strong and deep and take place without difficulty; the pulse becomes quickened, and the eyes injected. With these early symptoms, there are often irregular movements of the limbs, and expressions of various kinds are uttered; sometimes a patient will try to put away the sponge or instrument used, but more generally he is anxious to retain it. If the inhalation goes on, the face generally becomes flushed, the eyes are brilliant, and turn in different directions, often upwards; soon the eyelids droop; very often now there are laughter and incoherent expressions; the pulse begins to be slower, and a general insensibility with muscular relaxation follows. This is the true surgical period of anæsthesia. If this period be surpassed and etherization be pushed to its utmost limits, the respiration becomes stertorous, the face livid, the pulse slow and weak, and death may take place. To sum up, temporary excitement, then stupefaction or disorder of the intellectual powers, insensibility and death, are the three great and observable stages of etherization pushed to its utmost limits.(*i*) We have already described the psychical effects of the inhalation of the vapors of ether and chloroform. (Vid. *Rape.*)

Serious and alarming symptoms like those produced by inhaling the vapor of chloroform may arise from taking it *internally.* A lady, weakened by miscarriage, was affected within five minutes after taking half an ounce of chloroform, with convulsions, insensibility, dilated pupils, trismus, flushed face, a full and oppressed pulse, and foaming at the mouth.(*j*) Another person, also a female, took two ounces of chloroform; there was a deep stupor without congestion of the face, and the pupils were contracted.(*k*) In neither case was the pulse reduced. In a third case the symptoms were the same as in the second, and were also produced by two ounces of the liquid.(*l*) When death

(*g*) Med. Gaz. vol. ix. 1849, p 295. (*h*) Med. Times and Gaz. April, 1855.
(*i*) Brit. and For. Med.-Chir. Rev. Jan. 1852.
(*j*) Med. Times and Gaz. Dec. 1857, p. 615. (*k*) Annuaire de Thérap. xviii. 55.
(*l*) Am. Journ. of Med. Sci. Oct. 1857, p. 367.

has been produced by the internal use of chloroform, its local irritant action has evidently been the chief cause of the fatal result. Three cases, at least, of this description are recorded.(*m*) In all of them the quantity taken was from one to two ounces, and the local symptoms were those of an active irritant of the stomach. In one case the air-passages shared in the irritation, and their congestion was the immediate cause of death. In all, examination of the bodies showed softening of the mucous membrane of the stomach, and in one case ulceration also.

In regard to the mode in which the inhalation of chloroform occasions death, a review of the fatal cases furnishes a very uniform result, and in general shows but very few symptoms as precursors or concomitants of death. In a very small number more or less twitching of the muscles of the face and extremities, and in two or three instances spasmodic contractions of the muscles of the posterior part of the trunk, have been noticed; but, in general, the breathing grows feeble and infrequent, the pulse small and faint, and the face pale and cold. In a smaller proportion of cases the features are congested instead of pallid, and in these the respiration is more or less stertorous, and there is sometimes foam upon the lips. In the former group the mode of death indicates exclusively a direct poisonous action of the chloroform, producing an arrest of the heart's action, or syncope, while in the latter are *superadded* the effects of an exclusion of atmospheric air, in other words, the signs of asphyxia.

Casper treats of a *chronic poisoning by chloroform*,(*n*) maintaining that the vapor may prove fatal after the lapse of hours, days, or even weeks, the patient meanwhile suffering more or less from its effects.

§ 731. 3d. The *post-mortem appearances* found in those who have perished by chloroform are remarkably uniform; they are, great congestion of the lungs and bronchial tubes, and the blood is dark and fluid. Exceptions have, indeed, been observed to this rule, but in a very large majority these appearances are constant. This condition is not, however, significant of any peculiar action of chloroform upon the blood. As Dr. Snow has remarked, it generally remains fluid after death by chloroform, only because it remains fluid in every kind of sudden death.(*o*) It is found equally so in death from any asphyxiating cause and in cases of narcotic poisoning. It may also be due to disease. Dr. Faure is of opinion that the congestion of the lungs met with in death from chloroform, is, to some extent at least, an hepatization produced by the combination of the vapor with the blood in the vessels.(*p*)

§ 732. Chloroform may, it is said, be detected in the blood or the tissues by the following means: "Place the blood in a sand-bath, pass the resulting vapor through a tube heated in the centre to a red heat, and lined at its extremity with a paste of iodide of potassium and starch; its open end being also covered with paper moistened with the same mixture. If chloroform be

(*m*) Month. Journ. of Med. Sci. v. 77; Philada. Med. Exam. Nov. 1856, p. 659; London Lancet, Apr. 1859, p. 400.

(*n*) Gericht. Med. i. 621.

(*o*) On Anæsthetics, p. 248.

(*p*) Arch. Gén. Jan. 1860, p. 56.

present, the paper will be tinged blue. This process depends on the decomposition of the chloroform at a red heat. The simple distillation of the chloroform would often be better." M. Rigout has detected chloroform in blood by passing a current of air through the blood heated to from 100° to 120° F., and then conveying it into a limpid solution of nitrate of silver. If chloroform is present the liquid will become turbid, and regain its clearness on the addition of ammonia.

The reader will find in the note some important considerations relative to the mode of death by chloroform, and the means of obviating the frequent accidents which attend its employment.(*j*)

(*j*) *Report on an Experimental Inquiry Concerning Accidents by the Inhalation of Chloroform.*—The *Société d'Emulation* of Paris appointed a committee for the above purpose, which met forty times to conduct a series of 150 experiments upon different classes of animals. The results of their labors are detailed by M. L. Lallemand in the present report; but we must confine ourselves to recording his conclusions.

1. The action of chloroform upon the economy takes place with a rapidity directly proportionate to the amount of concentration of the inhaled vapor—the phenomena being, however, always manifested in the same order, and with the same characteristics. 2. The excito-motor properties of the nervous centres, the sensibility and motricity of the cerebro-spinal nerves are suspended by chloroform; but the excitability of the medulla, and the motricity of the nerves continue to be manifested under the electric current. 3. Chloroform possesses an especial elective affinity for the nervous centres, in the substance of which it becomes accumulated during inhalation, and is there found after death in a much larger proportion than in other organs. 4. The respiratory movements cease before the action of the heart. 5. After the respiratory movements are suspended, the animal, if left to itself, dies. 6. Chloroform is rapidly eliminated from the economy, the pulmonary surface being the principal agent in elimination. 7. In the majority of cases, the suspended vital functions can be re-established by means of the insufflation of air, or oxygen gas, even after all apparent circulatory movements are abolished. 8. In order to succeed, it must be resorted to immediately after the suspension occurs, and be steadily persevered in until the normal actions are completely re-established. 9. Artificial respiration, produced by the faradization of the phrenic nerves, may likewise re-establish the suspended vital functions. 10. Electricity, employed as a general stimulus of the nervous system, is powerless, and it rapidly exhausts the nervous excitability of animals in the last stage of chloroform intoxication. 11. Insufflation acts by stimulating the excitability of the nervous system, and inducing elimination of the chloroform by the pulmonary surface. 12. Death ensuing on the inhalation of chloroform takes place from the abolition of the action of the nervous system, and not from asphyxia or paralysis of the motions of the heart. 13. The dilution of the vapor of chloroform with a considerable and constant proportion of air, will, if not entirely prevent, very much retard, the danger of intoxication.

Applying these results to the human subject, the reporter feels convinced that insufflation of air, effected my means of a tube passed through the mouth into the trachea, and connected with a bellows, if commenced at once on the development of accidents, and continued with perseverance, will, in the majority of cases, prove perfectly successful. Local faradization of the phrenic nerves is only of secondary importance, compared with insufflation. By the latter, as much air as is desired can be introduced, the energies of the circulation becoming aroused and the elimination of the poison favored; while, under the employment of electricity, the excitability of the nervous system is apt to become exhausted.

In a *preventive* point of view, it is to be observed, that in all the experiments the respiratory movements first ceased; so that such suspension becomes the signal of the intense poisonous influence exerted on the economy, and the imminence of death. These movements, therefore, require especially to be watched during the administration. The chloroform, too, should be employed only when diluted with air, and care be taken not to administer large additional doses when the effect is commencing to take place. Owing to their density, the atmosphere near the patient remains charged with the vapors, which may easily thus become inspired in greater concentration than is supposed.

The reporter furnishes a drawing of a new apparatus, contrived by M. Duroy, for the purpose of administering a diluted chloroform, which he terms an *Anæsthesimeter*. —*Med. Times and Gaz.*, March 10, 1855, from *L'Union Médicale*, No. 13, 1855.

§ 733. 4th. A medico-legal question of no little importance is that respecting the possibility of chloroform being used for the purpose of facilitating rape, robbery, &c., by the production of insensibility. The question is not one merely of the possibility of its forcible administration but of its administration also to persons already asleep. Dr. Snow, it is well known, has denied the possibility, but we are disposed to think that his opinion can be no longer sustained. We, however, present his reasons, as well as the very sensible remarks made thereon by Lord Campbell, that the reader may judge for himself.

Dr. Snow says: "The sensation of pungency in the nostrils and throat that is caused by this agent when its vapor is in sufficient quantity to produce any effect on the sensorium, is so strong and peculiar, that no person can take a single respiration without being aware that he is inhaling something very unusual. Chloroform, in fact, can never be administered without the consent of the party taking it, unless by main force, which has to be used in the case of children who are not old enough to be reasoned into taking it. If a child be asleep when the process of inhalation is commenced, it nearly always awakes before being made insensible, however gently the vapor may be insinuated. As breathing is perfectly under the control of the will, a person would, on finding such a strange attempt being made upon him, in the public street, instantly hold his breath and use all his powers of resistance to repel the assault," &c.(*k*) Lord Campbell, in his speech in the House of Lords advocating the adoption of the bill making unlawful administration or application of chloroform and other stupefying agents felonious, made the following remarks: "A most respectable physician had done him (Lord Campbell) the honor to write him a letter, which he had printed, and there he stated the fear arising from the use of chloroform in this way was altogether imaginary, that no strong man who made resistance could possibly be chloroformed. He believed that was true; but in the case of those who were not strong, and unable to resist, it might happen to many of that class, that the chloroform would be employed most effectively for facilitating robbery. The gentleman to whose letter he had referred, stated that a person thus attacked might refuse to breathe, and that he might turn away his head. But, suppose a wet handkerchief was put to his nostrils, and held there, the man must breathe and thus inhale the particular gas that came from the chloroform. It stood, indeed, on record, that since the discovery of chloroform, persons had been convicted before the competent courts of using that article for the purpose of robbery. He hoped, therefore, their lordships would be of opinion that those who made such an attempt, should not be guilty of a misdemeanor only, as was at present the case; but that any person who tried to commit a robbery by means of chloroform or such like substances, *though he did not succeed*, should, if convicted, be held guilty of felony, and be liable to be transported beyond the seas."

We have not seen the evidence brought forward in the cases thus referred to, but we do not doubt that it was fully sufficient to establish the fact of

(*k*) Lond. Med. Gaz. 1850.

chloroform having been used for the purpose alleged; the only recorded instance which we have met with is the following; its employment was, however, as will be seen, unsuccessful. A gentleman named Mackintosh had retired to bed at an hotel in Kendal. He was awoke about twelve by a man attempting to suffocate him by means of a rag steeped in chloroform. Mr. Mackintosh, who is an elderly man, struggled desperately with his assailant; but whether from the fumes of the chloroform, or the disadvantage at which he was taken by his midnight assailant, he felt himself fast fainting, when his cries of "Help! murder!" roused the house. When the landlord made his way into the room, Mr. Mackintosh was almost powerless, and his assassin or robber was lying upon the bedding, which had fallen upon the floor in the scuffle, apparently sound asleep. On being roughly shaken, the latter professed that he had long been a sleep-walker, and appeared to be astonished to find himself where he was. A policeman was sent for and the man taken into custody. A strong smell of chloroform was perceived by the parties who entered the room upon the alarm being given, and a bottle containing chloroform was found under Mr. Mackintosh's bed, and a similar bottle in the carpet bag of the prisoner, who had been at the hotel several days. The probability was that the ruffian was secreted under the bed when Mr. M. retired to sleep, as the latter had placed a chair previously against the door to prevent intrusion, there being no lock upon the door.(*l*) This criminal escaped with eighteen months' imprisonment; the offence not being a felony at that time, since there was no intent to commit *murder* shown.

Several remarkable instances of robbery of persons designedly rendered insensible by chloroform have lately been reported in the newspapers of this country; although they may be authentic, we do not feel warranted in further alluding to them while unable to attribute them to responsible sources. It is obvious that a person may allege that he has been robbed or maltreated after being rendered insensible by chloroform, but also that the allegation may be false, and be put forward so as to divert suspicion or awaken sympathy.

IV. *Alcohol.*

§ 734. 1st. The pernicious effects upon the system, of the abuse of alcoholic liquors, are too well known to need any mention here. We propose, therefore, to refer only to their immediate poisonous action when taken in large quantity into the stomach.

Death, from this rapid saturation of the system with alcohol, is by no means rare. Orfila mentions an instance in which a man died immediately from the effects of a large dose of brandy.(*m*) Dr. Rösch relates three cases in which adults died from the immediate effects of excessive drinking in a few hours.(*n*) Taylor says that a man died in half an hour after swallowing a bottle of gin for a wager. Rösch also relates the cases of two children in which quite a small quantity proved fatal. The one was a boy aged two years, who drank

(*l*) Med. Gaz., Nov. 1850.
(*m*) Op. cit. ii. 528.
(*n*) Henke's Zeitschrift, 1850, 4 H.

some brandy and soon after became comatose, had convulsions, and died in a few hours. The other was a little girl of four years, to whom her uncle had given about two tablespoonfuls of spirits. The child soon sank down insensible, was seized with convulsions, and, in spite of all remedies that were used, died within twenty-four hours. In another case, the same quantity of brandy was given to a child six months old, to keep it quiet during the night. In less than a minute it was attacked with convulsions; its face was purple, the eyes staring, the pupils dilated and insensible, the mouth open, the head extremely hot, while the rest of the body was cool, the breathing stertorous, and the pulse hardly perceptible. It had also bloody evacuations. It died, in a state of coma, in nine hours.(*o*)

§ 735. In general, the state of stupor is preceded by a short period of great excitement, but in some cases this preliminary stage is either very short or entirely absent. The difference probably depends upon the strength and quantity of the spirit and the age of the person.

§ 736. 2d. *Symptoms.*—The general characteristics of the comatose stage in the adult are the following: The face may be either pallid or flushed; the pupil at first contracted, and afterwards dilated and insensible to light: respiration slow and sometimes stertorous; the pulse quick and jerking, and the limbs cool and relaxed. In general, the appearance is very much the same as in poisoning by opium, or as in the apoplectic condition. In the absence of any knowledge of the mode of accession of the symptoms, the diagnosis of the case will often be incomplete. The odor of alcohol upon the breath is of course an uncertain sign, since ardent spirits may have been swallowed without being the cause of the symptoms. The ability to arouse the patient temporarily is also no means of distinction, as this may be possible in the stupor from intoxication.

In fact, should the individual die, the physician will often be left in doubt of the origin of the symptoms until some evident cause for them is found in the *post-mortem* examination. Even then nothing may be found to throw light upon the case, since a person presenting the above symptoms may have died of concussion of the brain, which leaves no ascertainable morbid change. If the symptoms have been due to opium or other narcotics, these may not be discovered, and, as will presently be seen, the evidences of death from alcohol may also be deceptive. It will only be from a careful analysis of the history of the case, and comparison of it with the post-mortem signs, that the physician can hope to come to a probable conclusion.

§ 737. 3d. The *post-mortem appearances* in acute poisoning by alcohol are generally the following: The odor of alcohol is perceived in the stomach and chest, if too long a time has not elapsed since death; the vessels of the brain are congested, and numerous bloody points are seen on cutting into its substance; there is also not unfrequently an effusion of bloody serum under the membranes. The stomach is reddened in patches, and there is acute œdema of the lungs. But the only appearance which can afford tolerable certainty as to the mode of death, is the highly injected state of the brain and the effu-

(*o*) Deutsch. Canstatt's Jahresbericht für 1851, Bd. 10, p. 286.

sion of serum. This, however, gives only an indication of the mode of death, but not necessarily that it has been caused by alcohol.(*p*)

V. *Camphor.*

§ 738. 1st. *Symptoms.*—Although camphor cannot be regarded as a very active poison, no well authenticated case of death resulting directly from its use having, as far as we are aware, been yet reported; it is, nevertheless, capable of producing very dangerous symptoms. These, in the cases which are known, have varied somewhat, but in all there has been more or less evidence of its action upon the brain; vertigo, confusion of intellect, delirium, and somnolence being the most prominent effects. Indeed, the primary action of large doses of camphor is a powerful but not a permanent sedation of the nervous and vascular systems, followed by ataxic phenomena, and remotely by slight and very transient febrile excitement. Dr. Florain has reported the following curious case: A man 56 years of age and of good constitution, took for the relief of priapism, and under a misapprehension of the directions of his physician, an enema containing *ten* drachms of camphor. Immediately afterwards he had sensations of cold alternating with heat in the lower bowels, and these sensations extended along the spine to the neck and spread over the whole body. He was then seized with vertigo, had grotesque hallucinations, an excessive frequency of the pulse, embarrassed respiration, vomiting, and strangury, and was greatly prostrated within two minutes after taking the injection. The delirium increased, the features became pale and decomposed, the eyes fixed, and the pupils dilated. The skin became covered with clammy perspiration, and was ice-cold, the pulse frequent and thready, and the impulse of the heart very feeble. When violently aroused the patient regained his consciousness for a moment, complained of distressing nausea, extreme chilliness, and great desire to sleep. Vomiting of a yellow watery fluid, smelling of camphor, followed, and was succeeded by great prostration. By the assiduous employment of stimulation, both externally and internally, as well as purgatives, the patient was rescued from this very precarious situation. He recovered entirely, and the only durable effect of the camphor was seen in the complete anaphrodisia which lasted for several weeks.(*q*) Two other cases are reported where the camphor was also given in injection (of about a drachm), and which were followed by analogous symptoms. In one of these the symptoms were very similar to those of an epileptic convulsion.(*r*) Dr. O. E. Brown, of Kentucky, mentions the case of a young man who chewed and swallowed about 100 grains of camphor. No symptoms came on for a short time, but he was, perhaps an hour afterwards, suddenly seized with convulsions, and remained unconscious for several hours. He was relieved by bleeding and a warm bath. He gradually recovered his speech, but remained stupid, languid,

(*p*) For some valuable remarks upon the form in which alcohol enters into the system, we beg leave to refer the reader to Dr. Duchek's paper in the Prague Journal, translated in the Phil. Med. Examiner for Sept. 1854.

(*q*) Gaz. des Hôpitaux, No. 41, 1851.

(*r*) Canstatt's Jahresbericht für 1851, Bd iv. p. 277.

and wandering all the next day.(*s*) A few cases are quoted by Drs. Taylor and Christison, in which camphor was taken by the mouth, but they do not differ essentially from the preceding.

§ 739. 2d. *Power.*—The smallest dose which appears to have been attended with serious symptoms, is *twenty grains.*(*t*) In a case related by Wibmer, as much as eight scruples of camphor were swallowed by a drunkard, dissolved in spirit. It was followed by vertigo, dimness of sight, delirium, and burning pain in the stomach; there was no vomiting, and yet the man recovered. The nature of the poisonous agent cannot fail, in cases where camphor has been taken, to be discovered, since the odor is so powerful and so well known as to betray itself at once.

VI. *Hyoscyamus Niger.* (Henbane.)

§ 740. All parts of this plant are poisonous. The root is long, tapering, whitish and fleshy, and bears considerable resemblance to parsley and parsnip roots, and has been eaten in mistake for them. Dr. Houlton states that, in a monastery where the roots had been eaten for supper by mistake, the monks who partook of them were seized in the night with the most extraordinary hallucinations, so that the place became like a lunatic asylum. One monk rang the bell for matins at twelve o'clock at night; of those of the fraternity who attended to the summons, some could not read, some read what was not in the book, and some saw the letters running about the page like so many ants.(*u*) Orfila relates two cases in which paralysis, delirium and insensibility, together with tetanic symptoms were caused in two soldiers who ate of the young shoots of this plant.(*v*) The seeds are still more active. Two young children having eaten some of them, became actively delirious, and even maniacal, striking and biting all who came in their way. Their faces were red, hot and swollen, and the pupils dilated. They were gradually restored by the use of emetics, local depletion, and sinapisms to the extremities.(*w*) Another similar case is related in the same journal, but the seeds being unripe, the symptoms were still more alarming.

§ 741. The medicinal preparations usually given are the tincture and extract. Both of these vary greatly in strength. The dose of the former is a fluidrachm, of the latter five grains, on an average. Dr. Cabot, of Boston, gave three teaspoonful doses of the tincture, at intervals of an hour. Ten minutes after the last dose, the face began to swell, and become red and polished, the eyes were closed, and the patient was able to speak only with the greatest difficulty, on account of the tongue and lips. The red discoloration of the skin extended as far as the navel, and was attended with intolerable itching and burning.(*x*) Delirium and hallucinations, after fourteen grains, in divided doses, were met with by Reinbold, of Hanover.(*y*)

The only two cases of death alleged to have been caused by hyoscyamus

(*s*) Bost. Med. and Surg. Journ. vol. xxxvi. p. 368.
(*t*) Vid. Taylor on Poisons.
(*u*) Lancet, July 6, 1844.
(*v*) Toxicol. gener. ii. 264.
(*w*) Henke's Zeitsch. 1848, 4 H. p. 516.
(*x*) Am. Journ. of Med. Sci. Oct. 1851.
(*y*) Casper's Wochenschrift, 1840, No. 8.

were reported, the one in 1715, by Walther,(*yy*) and the other by Lindern, who is quoted at second hand by Orfila.(*z*) This result may therefore be regarded as extremely rare.

Hyoscyamia, in the dose of $\frac{1}{333}$ gr. has reduced the pulse from 79 to 18. In medicinal doses it occasions dryness of the mouth and throat, lowers the pulse, dilates the pupils, and induces sleep.

§ 742. VII. *Haschisch*, or *hatchy ratchy*, a narcotic much used by the Turks and Arabs in place of opium, for the purpose of producing intoxicating effects after their meals, is composed of a mixture of hyoscyamus, bitter almonds, and the juice of hemp-root (*cannabis indica*). A single teaspoonful of this preparation is said to be sufficient to deprive the strongest man, for a short period, of the right use of his senses, and render him oblivious of the external world.(*zz*)

§ 743. VIII. *Lactuca. Lactucarium.*—The inspissated juice of two species of lettuce, the L. Sativa and the L. Virosa, has decided narcotic properties, and in some experiments made by Orfila, the extract of the latter variety was fatal to dogs. No observations of its poisonous effects upon man have been recorded. Lactucarium is also known under the name of lettuce opium.

§ 744. IX. *Solanum.*—The *bittersweet*, or *woody nightshade* (S. Dulcamara), is said to possess feeble narcotic properties. There is but little testimony to support this view. A case is recorded in Casper's *Wochenschrift*, in which a man took, in one forenoon, from three to four quarts of a decoction, made from a peck of the stalks, and was attacked with pain in the joints, numbness of the limbs, dryness of the mouth and palsy of the tongue, the consciousness was unimpaired, the pulse quiet but small and rather hard, and the skin cool. The symptoms disappeared under the use of stimulants.(*a*) Orfila relates an instance in which three children were poisoned by the berries of the S. Nigrum, the common garden or deadly nightshade. One of them died, and all of them exhibited symptoms analogous to those produced by belladonna. The supposed active principle of these plants is called solania, or solanin, and is found also in the young shoots of the common potato, S. Tuberosum, but not in the tuber itself. In some experiments by Dr. Fraas, the effect of this alkaloid upon animals was very variable, when administered by the mouth or rectum. Those in which it was injected into the veins we do not consider as conclusive. Two grains of acetate of solanin injected into the rectum of a rabbit, produced heaviness, apathy, *dilatation* of the pupils, convulsions, and death in six hours; but twenty grains of pure solanin given to a pig, and five grains to a dog, produced little or no effect.(*b*) Schroff, however, distinctly states that this alkaloid has no influence upon the size of the pupil.(*c*)

(*yy*) Wibmer, Wirking, &c. iii. 149. (*z*) Toxicologie, 5ème éd. ii. 304.

(*zz*) Schneider, in Henke's Zeitschrift, 1848, 4 H. p. 520; see also Bayard Taylor's Travels in Palestine, &c., for an amusing account of its effects.

(*a*) Lond. Med. Gaz. Sept. 1850, p. 548.

(*b*) Brit. and For. Med.-Chir. Rev. July, 1854.

(*c*) Lehrbuch d. Pharmakologie, S. 553.

CHAPTER IX.

NARCOTICO-ACRID POISONS.

I. *Datura Stramonium.* (Jamestown Weed.)

§ 745. 1st. *Nature and effects.*—All parts of this plant are poisonous, but the seeds and the leaves are most frequently employed. In some countries it has been and is still now used for the purpose of producing intoxication, with unconsciousness, in order to facilitate the perpetration of criminal designs. It has been thus given infused in wine or mixed in food. Poisoning by other species of datura is very common in India. During the year 1848 there were treated for it at the Native Hospital, in Bombay, forty-nine males and two females. The powdered seeds are there employed, concealed in rice or other grain. In many cases three stages of symptoms are observed—delirium, sopor, and coma; in others delirium only is observed. The primary delirium may be vociferous or merely garrulous, the patient usually manifesting excessive timidity. In both this and the soporific stage he is constantly engaged in picking at real or imaginary objects, and sometimes in performing such antics as to render laughter on the part even of friends unavoidable. Dr. J. G. Johnson reports the case of a boy in whom the movements were like those observed in chorea.(*d*) Several of the movements seem to depend upon perverted vision, which destroys the power of judging of the distance of objects, and which may be due to the widely dilated pupil, a persistent symptom. Husemann observed a case of poisoning by this plant, in which all black objects appeared to the patient green.(*e*) In other cases there is complete blindness. The pulse and temperature, although usually natural, undergo in some cases extremes of exaltation and depression. On recovery, the person usually recollects nothing since the meal at which he was poisoned, so rapid are its effects.(*f*) Dr. Duffin, of London, reported the case of his own child, two years old, who died in twenty-four hours after swallowing one hundred seeds, without chewing them. She became fretful, and like a person intoxicated; in the course of an hour efforts to vomit ensued, together with flushed face, dilated pupils, incoherent talking, and afterwards wild spectral illusions and furious delirium. In two hours and a half she lost her voice and the power of swallowing, evidently owing to spasms of the throat. Then croupy breathing and complete coma set in, with violent spasmodic agitation of the limbs, occasional tetanic convulsions, warm perspiration, and a scarcely perceptible though not frequent pulse. In other cases the pulse was full and slow, and the general symptoms those of ordinary intoxication, with this remarkable exception of the slowness of the pulse. In a case related by Boerhaave, and

(*d*) Am. Med. Times, i. 22. (*e*) Journ. f. Pharm. ii. 191.
(*f*) Brit. and For. Med.-Chir. Rev. Jan. 1851.

in others reported in this country, a scarlet eruption appeared on the face. In females it has produced nymphomania. Kurzak observed priapism of an hour's duration in a case of poisoning with stramonium-seeds.(*a*) Dr. Bobierre, professor of chemistry at Nantes, drank by mistake a small quantity of an infusion of the leaves and seeds. In a quarter of an hour he began to feel heavy, and he had an uncomfortable feeling of constriction in the neighborhood of the larynx. His pupils were dilated, and the secretion of saliva, perspiration, and urine was entirely suppressed.(*b*) The external application of the bruised leaves may give rise to the symptoms of poisoning. An overdose of the officinal extract has produced fatal effects. The active poisonous principle resides in the alkaloid, *daturia;* this, when placed on the eye, dilates the pupil, and the eighth of a grain has killed a sparrow in three hours.

§ 746. 2d. The *post-mortem appearances* after poisoning with stramonium-leaves or berries present nothing which can be fairly attributed to the poison. In the cases which have been examined there has been but a very slight deviation from the natural condition.

II. *Nicotiana Tabacum.* (Tobacco.)

§ 747. 1st. *Symptoms.*—The symptoms produced by a poisonous dose of tobacco are nausea, vomiting, a burning heat in the throat and stomach, colic, diarrhœa, urination, extreme giddiness, great anxiety, with a disposition to faintness, pallor, coldness of the extremities, spasmodic trembling; the pulse is small, weak, tremulous, and intermittent; the breathing labored and stertorous; there is a paralytic relaxation of the voluntary muscles, and clonic spasms of the limbs. The pupils are but slightly affected, and the eyes seem to be sensible to light. This state is succeeded by a general torpor, or utter prostration, which is not coma, but which may terminate in death. Tobacco has produced death by having been criminally mixed with liquor. Not being used in medicine by the mouth, the dose capable of destroying life, when thus introduced, is not known.

Two cases are related by Dr. Deutsch, in which life was in extreme danger from the swallowing of tobacco. In one, a soldier suffering with the tape-worm took, by the advice of a friend, some of the extract of tobacco, such as is deposited in smoking-pipes. The quantity swallowed was estimated at an ounce. He was at once seized with the most horrible pains in the stomach, and fell into a state of extreme collapse. The efforts to vomit were ineffectual until an emetic was given to him. After extreme suffering, he slowly recovered. In the other case, a young lady accidentally swallowed the still lighted stump of a cigar which she had been smoking, and suffered greatly from the ordinary symptoms of poisoning by tobacco, together with pain in the stomach, until she was relieved of it by vomiting. A fatal case is reported by Mr. Skae, of a man who swallowed a large mouthful of crude tobacco. In addition to the usual symptoms, he had convulsions.(*c*) A fur-

(*a*) Schroff, Pharmacol. p. 532.
(*b*) Journ. de Chim. Méd. 1851, p. 539; vid. also Charleston Med. Journ. and Rev. Nov. 1854.
(*c*) Edinb. Med. Journ. i. 643.

ther variation from the ordinary course of symptoms was shown in the case of two females, about eighteen years of age, both of whom drank an equal quantity of a decoction of tobacco. The one was affected in the usual manner, the other became insensible and was attacked with convulsions; her arteries and veins were distended, and the former throbbed forcibly, and the conjunctiva was injected.(*d*)

Dr. Weaks, of Vermont, mentions the case of a child a few days old, to whom two tablespoonfuls of water impregnated with the smoke of tobacco were given, for the purpose of keeping it quiet. It died comatose in eight hours, notwithstanding the most active efforts to resuscitate it.(*e*)

Pereira quotes from Dr. Copland an instance in which half a drachm administered by enema proved fatal. Other cases are given in which one and two drachms had the same effect. In one of these referred to by Dr. Christison, death occurred in thirty-five minutes. Dr. Tavignot witnessed a fatal result in the case of a robust man, fifty-five years of age, who took an enema prepared from fifteen grains of tobacco.(*a*) Dr. Eberle knew the life of a boy destroyed in less than twenty minutes by a tobacco enema.(*b*) Several instances also are recorded in which the external application of moistened tobacco leaves produced alarming symptoms or death. Two also are said by Gmelin to have resulted from excessive smoking, in one case seventeen, in the other eighteen pipes having been smoked at a sitting.

§ 748. 2d. The *post-mortem appearances* are by no means characteristic. In a case minutely described by Dr. Grahl, of Hamburg, the only appearances at all unusual were a diffuse redness of the omentum, and of the outer and inner coats of the intestine, and patches of extravasation in some portion of the mucous membrane, together with an empty condition of the vessels of the abdomen and of the heart.

Where a large quantity of snuff has been taken into the stomach, portions of it may remain entangled in the mucus, and thus be recognized either by its physical characters or on chemical analysis, by the active poisonous principle called *nicotine*, or *nicotia*. In Dr. Weaks' case, *no odor* of tobacco was perceived on opening the body.

§ 749. 3d. *Nicotina, or nicotia.*—This alkaloid has much interest attached to it from its having been the poison used by the Count of Bocarmé in the murder of his brother-in-law, Gustave Fougnies.(*f*) The nicotina was ob-

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(*d*) Dierbach, Neueste Entdeck. ii. 884.
(*e*) Boston Med. and Surg. Journ. vol. xlvii. p. 461.
(*a*) Rev. Med. Nov. 1840. (*b*) Therapeutics, p. 389.
(*f*) On account of the great interest which this trial excited, we have subjoined the following succinct history of the case, as presented by the Attorney-general of the Court of Appeals of Brussels.

ACT OF ACCUSATION.

The Attorney-general of the Court of Appeals of Brussels represents that the court, by a decree of the 16th April, 1851, transmitted to the Court of Assizes of the province of Hainaut the names, first of Alfred Julien-Gabriel-Gérard-Hyppolite Visart, Count of Bocarmé, aged thirty-two years, landholder, born at the Camp of Weltevreden in Java, &c.; second, of Lydia Victoire-Joseph-Fougnies, aged thirty-two years, wife of Count Bocarmé, born at Péruwelz, and both living at Bury, accused of the crimes enumerated in the articles 301, 302, 59 and 60 of the penal code.

tained by Professor Stas from the mouth and stomach of the deceased, and from articles of clothing and furniture. It had been prepared by the hands

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In consequence, the Attorney-general has drawn up the present act of accusation, in which the following facts and details are set forth:—

The Count Hyppolite Visart de Bocarmé, belonging by birth to one of the first families of Hainaut, married, in 1843, at Péruwelz, the daughter of an ex-grocer who had two children, and whose son, having lost his right leg by amputation, had not a very strong constitution. The accused, therefore, even before the contract of marriage, foresaw that the end of Gustave Fougnies, his brother-in-law, was more or less near; and after having secured to himself the property of his wife by will, he did not hesitate to consult Dr. Semet regarding the chances of life or death which Gustavus might have.

But Gustavus also began to think of marriage. He had already entertained the idea in 1846, and he was on the point of carrying it into execution, in the month of November last, when he died suddenly at the mansion of Bitremont, where the prisoners resided, and in the very apartment where he had been dining with them. They communicated the intelligence the next day to Madame Dudzeele and her daughter, to whom Gustavus was about to be married; and the Countess herself charged a servant to "go and tell the two hussies that her brother had died of apoplexy." But the state of the body indicated a very different kind of death, since the autopsy disclosed upon the anterior part of the nose a deep contusion, upon the left cheek a number of scratches, which appeared to have been made by the finger nails; over the left maxillary region there was a corrosion involving the cuticle, and which seemed to have been caused by some caustic fluid; in fine, upon the tongue, in the mouth, throat, and stomach, there were numerous traces of the passage of a similar substance.

The physicians (experts) concluded from these observations that a corrosive liquid had been poured during life into the mouth of Gustavus Fougnies, and had produced a cauterization of the whole of that cavity and part of the pharynx; that a portion of this liquid, either spilt or rejected, had burned the left side of his neck; and that the marks of violence on the face proved that efforts had been made to force down the liquid, and to stifle the cries of the victim.

Moreover, the Count presented upon the second phalanx of the middle finger of the left hand, two wounds, which involved the skin, and which were evidently the result of a bite, for the marks of two teeth were visible in the lower wound, which was deeper than the other.

At the time the investigation took place, on the 22d November, at the chateau of Bitremont, there was also apparent upon his fingers and under his nails a red discoloration, which was only too evidently connected with the scratches of which the face of Fougnies offered numerous traces. All this required an explanation, which was far from being satisfactory; and chemical analysis speedily demonstrated that Gustavus Fougnies had been poisoned by nicotine, a narcotic alkali, extracted from tobacco, and which is one of the most deadly poisons. The prosecution was prepared to show that the accused had for ten months previously made this poison a particular study; that he had, some days before the death of Gustavus, procured by his labors two small phials of it, which, since that event, have not been found. Moreover, the Countess herself formally accused her husband of having poisoned her brother; and although the Count himself now acknowledges that he extracted the nicotine which destroyed Gustavus, without, however, explaining by whose means it had been administered, we think it may be useful to present a summary of the facts which instigated, preceded, accompanied and followed the crime on the 20th of November.

In marrying Lydia Fougnies, whose patrimony he had over-estimated, Count Bocarmé was far from gaining an opulent position, since he only received from his father-in-law a yearly allowance of 2,000 francs, and he brought on his own side 2,400.

Such feeble resources did not well accord with so grand a domestic establishment, with numerous servants, and especially with the irregularities of the accused, who in a short time had a second household in the environs of Brussels. He therefore found himself obliged to resort to daily loans from his notary, to whom he owes nearly 43,000 francs; and although M. Fougnies, the father, died in 1845, leaving his daughter a revenue of 5,000 francs well secured, this increase of fortune was far from assuring the future of the accused, since their expenses were every day increasing, and they had even drawn since 1846, without repayment, to the amount of 95,000 francs.

All this did not prevent them from owing dribbling debts to the amount of 7,000 francs, some of which dated back to the same epoch, and in which we see domestics or mere journeymen figure for sums of thirty, twelve, ten, and three francs. In fine, they had so completely lost their credit, that the Count was reduced to pledge for 400

of the murderer himself, who had devoted several months to the study of the process of eliminating it from tobacco. The *symptoms* produced by it in the

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francs, at a pawnbroker's in Brussels, ornaments belonging to the Countess, and which are still there. The ruin of the accused was thus imminent, unless the death of Gustavus, on which they had so long counted, should occur, to re-establish their dilapidated fortune.

But Gustavus did not die; he had even formed new projects of marriage, which seriously vexed the accused, and which they sought to break, by means of the notary, Cherquefosse. The Countess herself had written to her brother two letters, which were found after his death, and which contained some slanders against Miss Dudzeele, which she had used in an anonymous letter of the month of August. These attempts, however, had resulted in nothing, and there only remained to the Count the last resort, and the most efficient means for attaining his end.

After having cultivated poisonous plants in 1849, he presented himself, in the month of February, 1850, under the assumed name of Bérant, before Löppens, Professor of Chemistry at the Industrial School of Ghent, and begged to be informed of the proper apparatus for extracting the essential oils of plants, remarking that he had seen the American savages poison their arrows with the juice of certain plants, and that he wished to make some experiments for the benefit of his parents, who lived in the United States. He consulted Löppens particularly with regard to the mode of distilling the essential oil of tobacco, that is to say, *nicotine;* and he ordered from the brazier, Vandenberghe, according to the instructions of the professor of chemistry, an apparatus of brass, which he wished to be ready by the 11th of March.

On his return to Ghent, in the month of May, the accused showed Löppens the first sample of nicotine, which had not proved efficient. He then recommenced the operation under his supervision, and after having labored two days in his laboratory, he succeeded in obtaining two drops of pure nicotine.

He returned again, after some time, with another sample, which had not succeeded any better than the first. Löppens then gave him new instructions; and the accused announced to him at last, on his third visit, in the beginning of October, that he had obtained the most deadly effects on animals.

Nothing now remained but to procure the necessary substances and instruments to operate on a larger scale, and to follow the procedure of Schlœsing, which Löppens had pointed out as the best, and which Pelouze and Frémy describe in their course of General Chemistry.

But these purchases made new journeys to Brussels necessary, which the accused visited on the 16th and 28th of October, and after laboring without interruption two days and two nights, he at length succeeded, on the 10th of November, in obtaining two phials of nicotine, which he was to employ on the 20th, and which could not be found after the death of Gustavus. With regard to the chemical instruments which had served for its preparation, the Count had taken care that they should immediately disappear. The servants of the establishment could give no information with regard to them, and it was not till six weeks after that they were discovered in a secret place, where the Count had mysteriously concealed them.

This precaution, all will agree, does not well accord with scientific labors, or with researches made for the benefit of another continent.

There is, moreover, the false name of *Bérant*, which the Count always assumed in his interviews with Löppens and Vandenberghe, although he did not conceal his true name at the pawnbroker's shop in Brussels. We may then safely conclude that he had already, in the month of February, meditated the crime which he committed in the month of November, and of which his own mother would seem to have had a presentiment, since she said one day to her daughter-in-law, that Hippolyte was capable of anything, that he might do some mischief by his chemistry, and that she expected nothing else but to see him some day brought before the Court of Assizes. The diligence with which he labored night and day, moreover, clearly indicated the object he had in view, especially at the period when the idea of marriage had taken possession of Gustavus, and the Countess herself had avowed the object, since she said in so many words, at one of her examinations, "My husband speculated on the death of Gustavus; it was his fortune that he coveted—it was that which made him decide upon his death; he had lived too long, in his estimation. During the first days of November, I knew that the poison was prepared for Gustavus: I knew, moreover, that the poison was nicotine. My husband himself told me this in the rear wash-house, the day I saw the large matrass in the vessel of oil, and where he told me he made cologne water. I used many entreaties to know what he was really making, and he at last admitted that it was nicotine. Some days after, he told me, that the first time an opportunity presented, he would not miss Gustavus; and

human system are not well known. Besides the one already referred to, there is but a single case upon record, and in that, also, the symptoms were not

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on the 20th of November, on learning that he was coming to Bitremont, he declared to me," added the Countess, "that he would do the business for him that day."

Gustavus, in fact, arrived at ten o'clock; it only required a single word to save him, and yet the Countess passed the whole day with him without informing him of the dangers which impended. She even gave orders which would insure the execution of the crime, by removing those whose habitual presence would have hindered it. Thus, she made the oldest of the children, and his governess, dine in the room of the latter, instead of admitting them to her own table where they dined every day, and she had caused supper to be prepared for the two smaller children in the apartment of the nurses, instead of in the kitchen, as was their custom. It is true that one can hear from the kitchen, what passes in the dining-room. She also sent her coachman, Vandenberghe, to Grandmetz, with a letter to the ladies of Dudzeele, although he had, by the arrival of Gustavus, an additional horse to take care of, and although the letter had no other object than to inquire of the ladies what price they would ask for their agricultural implements. There was no urgency in the message, but the distance to travel over required the absence of the coachman for four or five hours; and when afterwards the Countess ordered her chambermaid, Emérance Bricourt, to serve at table instead of Vandenberghe—she was careful to order her to withdraw after the second service. Emérance did not again appear in the dining-room until the time when she supposed they would need a light, and the accused, to whom she came to offer it, answered both at the same time, "*No, no, not yet.*"

On withdrawing, Emérance was going to the kitchen, where the coachman was dining, who had returned from his trip to Grandmetz. The Countess followed her and saw her go up to the nursery, where she found the two nurses, Justine Thibaut and Virginia Chevalier. She had also ordered Vandenberghe to accompany, as far as the road to Leuze, a distance of about one kilometre (nearly equal to three-quarters of an English mile) the cook, Louisa Maes, who was returning home. Vandenberghe had set out on the road with Louisa, but he was not long in perceiving that it would be too late for the girl to travel alone, and as she had no money to pay for lodging on the way, he had returned with her to the house, and informed his master and mistress, who were still in the dining-room with Fougnies. Gustavus had already manifested an inclination to leave. The Count had even ordered Francis Deblicquy, the gardener, to get the carriage ready, but the stable was locked, and Vandenberghe had the key. He had scarcely returned to the house, when the Count went to the kitchen to give the same orders which he had given to Deblicquy. The coachman then took the lantern and went to the stable, and the Count returned to the dining-room.

Justine Thibaut was coming down stairs at this moment to get some supper for the children, although the Countess had ordered them away from the kitchen on this occasion, as already stated. Arriving upon the last steps of the stairs, she heard a fall in the dining-room, and the voice of Gustavus, who cried for help, exclaiming, "*Oh, oh, forgive me, Hippolyte!*"

She then ran to the kitchen, crossing the office which separated it from the vestibule and dining-room, when she saw the Countess go out of the dining-room and enter the office, closing the doors of the two apartments, so as to prevent the cries of Gustavus from reaching the kitchen. The girl being still more frightened at this sight, hastened to reach the court by a circuitous way; she then passed opposite the windows of the dining-room, from whence issued stifled cries, and went up to the children's apartment by the old back stairway. Emérance, whom she found there, then went down to offer her services; but she heard no more noise, and the Countess made her go up again on seeing her at the bottom of the stairs.

The marks of violence observed upon the body exclude the idea of accident or of suicide. They prove, on the contrary, a violent struggle; and when we reflect, that to make the victim swallow the poison, it was necessary at the same time to open his mouth and restrain the movements of his head to the right and left, which he would otherwise make, it is nearly impossible to admit that the crime was the act of one person only.

How, indeed, can we conceive that the Count Bocarmé, whose left hand, imprinted with a double bite, was held in the mouth of Gustavus, and whose right hand was fully employed in steadying the head and arms, could of himself, and without foreign aid, pour into his mouth a phial of nicotine?

Another person was, therefore, necessarily a participator in the act, and there were only the Count and the Countess in the dining-room at the moment when Justine heard the fall and the cries of Gustavus. The accused wrote as follows, on the 12th

witnessed. From the circumstances, it was inferred that the person became suddenly insensible and powerless, and died in from three to five minutes.(*ff*)

(*ff*) Times and Gaz. June, 1858, p. 659; Guy's Hosp. Rep. 3d ser. iv. 345.

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of last March, to a correspondent in Paris: "My wife has requested you to engage M. Berryer; do not do it; and if the engagement is made, suspend it until a new order is received from me, but let her continue in the belief that he is engaged. On this recommendation, both her life and mine depend. Only imagine that this wretched woman, after having poisoned her brother, can find no better defence now, when we are both in prison for the deed, than to charge the whole upon me, and to accuse me of the most atrocious crimes. Do not answer this note, which I secretly slip in the accompanying letter. Remember, that all the letters we receive are opened. If Berryer shall have engaged to come, explain to him what I have stated to you in this note; show him that the hostile attitude assumed towards me by my wife, is only the result of a moral constraint, occasioned by the position in which she finds herself placed, and that his aim should be to defend us both equally against the accusation, and not to take up for my wife in the hostile position she has assumed in regard to me; this would give great plausibility to the charge, and lead us inevitably to the scaffold."

This note, which the accused had fraudulently slipped into a letter, intended to be shown, was not for the Judge of Instruction. It expressed then the secret thoughts of Count Bocarmé better than they were ever explained in his interrogations, and those thoughts entirely agree with the nature of the crime of which he is accused; it also well agrees with the disclosure the prisoner had made to the keeper of the prison, since he told him, on returning from his first examination, that it was the Countess who had turned the poison into the mouth of Gustavus; that she had made two different attempts in doing it, and had even spilt it on the clothes of her brother.

This explains why she went, a few minutes afterwards, to wash her hands with soap in the kitchen; why she immediately placed the clothes of Gustavus, and those of her husband, in a wash-tub full of water; why she caused them to be wrung and washed in lye at midnight, in her presence, by the cook, L. Maes. This also will explain why she caused the crutches of her brother to be washed with hot water; why she even caused them to be burned, saying she could not bear the sight of anything that had belonged to him; why she had burned his waistcoat and cravat, at the very moment the officers of justice arrived at Bitremont. This will also serve to explain why she caused the floor of the dining-room to be washed the same night, and in her presence; why, the next day, she herself poured oil upon the spots, that they might not be recognized; and why she said, with evident satisfaction, to Emérance, at the time they were making the autopsy, that everything went on well, and that they had discovered nothing, and would bury Gustavus on the morrow.

These facts are too numerous and too direct for any one to doubt of her being an accomplice, especially when placed in connection with the extraordinary declarations of her husband, with the special character of the crime, and with the measures the Countess had taken to insure its execution. This complicity dated as far back even as the time when she had written, and signed with the false name of *Bérant*, all the letters addressed to Löppens, and the brazier, Vandenberghe; and she had even counterfeited his handwriting in several of these letters.

The Countess alleges, it is true, that if she passed the night in effacing the traces of the crime, it was only to save her husband and the father of her children. But it is very difficult to admit the excuse in regard to so odious a crime, and one, too, committed against her own brother.

Especially, it is difficult to admit it in connection with the almost daily acts of violence which the Countess had to complain of, and to which her husband added the grossest immorality, since we have seen that he obliged her to receive the fruit of his adultery at the château of Bitremont.

She also maintains, that if she concurred in preparing for or aiding the poisoning, she had only done it under the threats of her husband, and under the influence of moral constraint. But then, why did she not at least apprise her brother, when a single word might have saved him? Why did she profane his dead body, by ordering the coachman, Vandenberghe, to deluge it with vinegar? Why apply an opprobrious epithet to the ladies Dudzeele, when she directed a servant to inform them of the death of Gustavus? All this denotes too clearly a common purpose to attain the same object, which might profit both the accused, and which even the uncle of the Countess openly proclaimed in his deposition, explaining the reasons why he had not been present at the house the next day, in compliance with the invitation he had received. "I was," he said, "too indignant against them on account of their infamous conduct, and

In experiments upon dogs, Orfila observed that vertigo was first produced, that they then sank down, had tetanic convulsions, with opisthotonos, and died in a variable time, according to the strength of the liquid. Anhydrous and pure nicotina, he says, may kill a dog in half a minute, but two minutes are usually required. If somewhat less pure and more diluted, death will follow in about ten minutes, and if still further diluted, the animal may recover. The doses given were from one to twelve drops.

§ 750. Nicotina is an oily, transparent, colorless liquid, becoming brown and thick upon exposure to the air, and, when pure, exhaling a *slight* smell of tobacco. Its taste is acrid and burning. The vapors that are given off when it is volatilized at 200° have so strong an odor of tobacco, and are so irritating, that, according to Orfila, it is difficult to bear them. Nicotina is soluble in alcohol, water, ether, and the oils.

The tests for nicotina are thus stated by Dr. Taylor :(*g*) It precipitates yellow with chloride of platina, white with corrosive sublimate, bright yellow with arsenio-nitrate of silver, reddish brown with iodine water, yellowish white with tannic acid, and does not affect a solution of gallic acid.

§ 751. It may be sought for in the viscera of a person poisoned by tobacco, in the following way. After the suspected substances have been macerated in water acidulated with sulphuric acid for twelve hours, this should be filtered, evaporated in closed vessels nearly to dryness, treated with a little distilled water to dissolve the sulphate of nicotina, then neutralized with potash and distilled over. Or, instead of this latter stage of the process, the solution holding the sulphate may be treated with ether, decanted, and allowed to evaporate. The residue will be nicotina. It has been detected by Orfila in the bodies of animals destroyed by it, two or three months after their death. The process employed by Professor Stas has been, in its preliminary steps, explained in the chapter on OPIUM.

§ 752. The subsequent steps applicable to the discovery of *any* of the *liquid* and *volatile alkaloids* may be here briefly quoted. "By the evaporation of the ether, there remain in the inside of the capsule some small liquid striæ which fall to the bottom of the vessel. In this case, under the influence of the heat of the hand, the contents of the capsule exhale an odor more or less

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this indignation has its foundation in my deep conviction that they murdered Gustavus."

In conclusion, Alfred Gabriel Gérard Hippolyte Visart, Count Bocarmé, and Lydia Victoire Joseph Fougnies, wife of Bocarmé, are charged with having wittingly made an attempt upon the life of Gustavus Fougnies, their brother and brother-in-law, at Bury, on the 20th of November, 1850, by means of substances which would cause death more or less promptly, or at least with having been accomplices in this act, whether they gave instructions to commit it, or procured the substance, or did any other act to carry it into execution, knowing the object intended; whether they knew of, or aided or assisted the author or authors in, those acts which prepared for or facilitated the deed, or those which consummated it.

Regarding which, the Court of Assizes of Hainaut will decide.

For the Procureur Général,

May 3d, 1851. (Signed) E. D. CORBISIER, Substitute.

The discussions respecting this case occupied the court during twenty-one sittings (from May 27 to June 15). M. Bocarmé was found guilty by the jury, and condemned to death; and Madame Bocarmé was acquitted.—*Procès du Comte et de la Comtesse de Bocarmé.* Paris, 1851.

(*g*) Guy's Hosp. Rep. 3d. ser. iv.

disagreeable, suffocating, irritant; it presents, in short, a smell like that of a volatile alkali masked by an animal odor. If we discover any traces of the presence of a volatile alkaloid, we add then to the contents of the vessel, from which we have decanted a small quantity of ether, one or two fluidrachms of a strong solution of caustic potash or soda, and agitate the mixture. After a sufficient time we draw off the ether into a test-tube, exhaust the mixture by two or three treatments with ether, and unite all the ethereal fluids. We afterwards pour into this ether, holding the alkaloid in solution, one or two drachms of water acidulated with a fifth part of its weight of pure sulphuric acid, agitate it for some time, leave it to settle, pour off the ether swimming on the top, and wash the acid liquid at the bottom with a new portion of ether." The sulphate of nicotina, as well as some others, being entirely insoluble in ether, a pure sulphate is contained in the water. The alkaloid may be now set free by caustic ammonia, and agitation with ether. The ether may be left to spontaneous evaporation, and the last traces of ammonia removed by placing the vessel containing the alkaloid in a vacuum over sulphuric acid. The organic alkaloid being thus isolated, it is the duty of the chemist to determine, if possible, its real nature. This was the process used by Prof. Stas for the separation of *nicotina* in the Bocarmé trial, and also in experimental researches upon animals.(*gg*)

III. *Conium Maculatum.* (Common or Spotted Hemlock.)

§ 753. 1st. *Its action.*—The poisonous properties of this plant reside chiefly in the leaves, but exist also in other parts. The accounts of its action upon the human system are somewhat contradictory. Some authors attribute to it positive narcotic properties; Orfila quotes the case of a soldier, who, having eaten of some broth into which hemlock had been put, went to sleep immediately after his supper. A couple of hours later, he was found still lying on the ground in a profound sleep, insensible. His pulse was extremely slow, the extremities cold, the face swollen and livid, and the respiration labored. He died in three hours. Some cases are related in which delirium and fatal convulsions were said to be due to this poison. On the other hand, these symptoms are not produced by conia, which is supposed to be the active poisonous principle of the plant, nor do they agree with the observations of other authors, especially of recent date. Dr. Pliny Earle tried the effect of the extract of conium upon himself. The preparation seems to have been a feeble one, for although the dose was steadily increased until it reached sixty grains three times a day, and seven such doses were taken, the effects were by no means striking. No soporific effect, however, resulted; he experienced merely the sensations of fulness of the head and eyes, a "tendency to vertigo," double vision, and a great feebleness in the limbs.(*h*)

§ 754. 2d. *Symptoms.*—Dr. Hosea Fountain, however, who prepared for himself an extract from the fruit or seeds of the plant, and took twelve grains of it, began to experience its effects in half an hour. He had a feeling of

(*gg*) Am. Journ. of Pharm. Jan. 1853. (*h*) Am. Journ. Med. Sci. July, 1845.

lightness in his head, dimness of vision, and *muscæ volitantes*, before his eyes; "very soon," he says, "a numb, pricking sensation was felt in the fingers, extending gradually to the elbows, producing a stiffness of the muscles of the parts, making it difficult to move the forearm and hand. In a few minutes the same sensation was observed in the feet, creeping slowly upward, until it reached the upper part of the thigh. The eyes now began to feel uncomfortable, causing me to brush them frequently, to clear apparent obstructions from the lids. The pulse was soft and feeble, but not more frequent than usual." Having dismounted from his horse, he found so much difficulty in walking that he required assistance, and the lower limbs appeared to be nearly paralyzed. This partial paralysis of the limbs continued throughout the whole day, although the head symptoms disappeared under the influence of tobacco and rest. No *soporific* effect was produced.(*i*)

In an undoubted case of death from eating hemlock, the symptoms were very much like those just described. The man's consciousness and intelligence were not affected, but he lost his sight completely, and was unable to walk. He seemed also to have lost all muscular power in his arms, and the power of deglutition and speech; several efforts were made to vomit, but they were ineffectual. His pulse and breathing were perfectly natural, as well as the heat of skin. Death ensued in three hours after eating the poisonous plants, without convulsions, but apparently from paralysis of the heart.

The post-mortem appearances in this case were not important except the presence of numerous extravasations of dark-red blood below the epithelium of the mucous membrane of the stomach. The stomach contained a pultaceous mass formed of a raw greenish vegetable resembling parsley. Its contents weighed eleven ounces and had an acid and slightly spirituous odor. The hemlock leaves were identified by their botanical characters, and by the peculiar musty odor of *conia* which was strongly evolved, on bruising some of the leaves in a mortar, with a solution of potash.(*j*)

3d. The *hemlock water drop-wort* (Œnanthe Crocata) is a still more energetic poison than the foregoing, but from not being medicinally used does not require notice here. Many accidents have happened from the roots of this plant having been eaten in mistake.

§ 755. 4th. *Conicine*, or *conia*.—The active principle of common hemlock is a most virulent poison and a local irritant. A single drop applied to the eye of a rabbit, killed it in nine minutes; and when two grains of the muriate of conia were injected into the femoral vein of a young dog, it died before there was time to note the interval.(*k*) It produces paralysis almost instantaneously, but does not appear to interfere at once with the functions of the brain, since, according to Christison, the external senses are little, if at all, impaired, until the breathing is almost arrested; and volition too is retained. The blood undergoes no alteration. The following plan is recommended by Orfila for its detection in food and other organic matters. The parts cut into small pieces should be placed in water acidulated with sulphuric acid, filtered, and evaporated by a gentle heat, after cooling, agitated with twice their volume of strong

(*i*) Am. Journ. Med. Sci. Jan. 1846.
(*j*) Ed. Med and Surg. Journ. July, 1845. J. H. Bennett. (*k*) Christison.

alcohol, then again filtered and evaporated until all the alcohol has been dissipated. The fluid should, after cooling, be neutralized or rather rendered alkaline by soda, when the characteristic, mousy smell of conicine will be perceived. Being now agitated with sulphuric ether, and decanted, the conicine is left behind by the spontaneous evaporation of the ether, and may be distilled over chloride of calcium. Heated in a capsule it forms white vapors, having a strong smell of celery and of the urine of mice.

IV. *Nux Vomica.—Strychnia.*

§ 756. 1st. *Qualities.*—Nux vomica and its chief poisonous alkaloidal principle may be conveniently treated of together. *Nux vomica* is a round flat seed about three-quarters of an inch in diameter, and two lines in thickness. It is covered with fine, silky, gray hairs, and is hard and difficult to pulverize. The powder is of a yellowish-gray color, and has an intensely bitter taste. *Strychnia* is usually seen as a grayish-white powder, inodorous but excessively bitter. This property is so distinct that it is said that it may be perceived when only one part of strychnia is present in 30,000, or as others assert, in 600,000 parts of water. It is very sparingly soluble in water, but is easily dissolved by ordinary alcohol when boiling. It is deposited, however, upon cooling.

§ 757. 2d. The *symptoms* produced by strychnia or by nux vomica in poisonous doses are the following: The most prominent are spasmodic muscular contractions, which the slightest cause, such as a noise in the room, the contact of a person, or the attempt to introduce liquids into the mouth is sufficient to excite. During these convulsions the limbs become perfectly rigid, the muscles tremble, the respiration is suspended, and the lips, tongue, and fingers become blue. The intellect is not affected, this drug seeming to exercise its influence upon the nervous centres, from the medulla oblongata downwards, alone. The fits succeed each other at short intervals, and death usually takes place during one of them, although it may occur after their cessation, from mere exhaustion. A well described case of accidental poisoning with strychnia, by Mr. Bennett,(*l*) would answer almost equally well for a picture of hydrophobia. The quantity taken was about a grain and a half in solution. The patient, when first seen, which was about an hour after the poison had been taken, was in a rigid and trembling state and the face almost maniacal in its expression. This was soon followed by a violent tetanic convulsion. Between the fits she did not utter any expression of alarm, but would occasionally request a little cold water. The muscles of the jaws remained so rigid between the spasms that the attempt to introduce the stomach pump was unsuccessful, and although some strong emetics were got down, it repeatedly happened that the attempt of the patient to take liquids was followed by so violent a spasmodic fit as to prevent her swallowing them, and to give that apparent dread of water so well marked in cases of hydrophobia. During the tetanic fits the whole body was stiffened and straightened; the neck violently

(*l*) Lancet, 1850, vol. ii. p. 462.

drawn back, the chest fixed, the eyes protruding from their sockets in a horrible manner, the legs pushed out and widely separated, the muscles of the face convulsed, pulse imperceptible, and no breathing could be perceived; the face was livid, more particularly the lips, and froth issued from the mouth. The pupil was also dilated during the paroxysm. It was impossible to produce any relaxation of the body during a fit, and if moved the whole body remained in its rigid condition. As soon as death had taken place, which was in an hour and a half, the limbs relaxed, the face and lips gradually lost their livid hue and became, as well as the body, extremely pallid.

In this case alarming symptoms did not arise until about an hour after the poison had been taken, and numerous cases might be referred to in which an interval of an hour or two occurred. The poisonous effects of strychnia are more rapidly developed than those of nux vomica. But usually the former supervene very speedily, being seldom delayed more than fifteen minutes. Death may occur in fifteen minutes, as in the case of Dr. Warner, who was supposed to have taken only half a grain,(*m*) or in half an hour, as in a case reported by Dr. Theinhart, where thirty grains of strychnia were swallowed, and seldom is postponed for more than two hours, if no measures for the removal of the poison have been taken.(*mm*) In a case that occurred near London, a prescription was improperly prepared, so that the young man, for whom it was directed, took a grain and a half of nux vomica, and the same quantity of strychnia. It is stated that "he soon afterwards complained of some extraordinary sensations and *almost immediately* expired."(*n*)

§ 758. 3d. *Power.*—The smallest quantity of *nux vomica* which is known to have caused death, is said to be three grains of the alcoholic extract, but it is quite uncertain to how much of the powder this corresponds. Hoffmann (quoted by Christison) states, that two doses of the powder, of fifteen grains each, proved fatal, and other cases are related in which fifty and sixty grains produced death. The smallest *quantity* of *strychnia* which has proved fatal appears to be one grain.(*o*) In Mr. Bennett's case, above quoted, about one grain and a half was taken.

Recovery occasionally is observed, even after very large doses. Dr. Thomas Anderson records a case in which seven grains of strychnia were taken without producing fatal consequences.(*oo*) The comparative mildness of the symptoms and the recovery throw some doubt upon the purity of the strychnia which was used. Dr. Dresbach, of Ohio, attended a man who drank, by mistake, three ounces of a solution of strychnia, containing one grain to the ounce. When seen by Dr. B., about twenty minutes afterwards, he was in the following condition: The whole muscular system rigid, the muscles of the back and legs so rigidly contracted, that it was with extreme difficulty the man was able to walk, face drawn awry and articulation impeded, a sense of burning about the stomach, tightness about the chest, vertigo and dimness of vision, lower

(*m*) Phila. Med. Exam. Oct. 1847, p. 309.
(*mm*) Am. Journ. Med. Sci. Jan. 1848, p. 303, from Gaz. Médicale.
(*n*) Am. Journ. Med. Sci. April, 1854, p. 537, from Pharm. Journ. July, 1852.
(*o*) Med. Times and Gaz. April, 1855.
(*oo*) Am. Journ. of Med. Sci. Apr. 1848, p. 562.

extremities cold, and perspiration abundant. Chloroform being the only article at hand which seemed likely to be useful, Dr. B. gave the patient at once two drachms, and in less than fifteen minutes, the relief, Dr. B. says, was complete.(*p*) A case, in which a man recovered after swallowing a grain and a half, is reported by Mr. Foster.(*q*) In another case, a girl swallowed two grains of strychnia, upon an empty stomach. The poison remained in the stomach fifty minutes before it was removed by an emetic and the stomach-pump. The disturbance was but slight, and the girl recovered. Dr. Taylor suggests, that owing to the symptoms having been very slight in this case, the strychnia was probably not pure.(*r*) But recently, other cases have occurred of recovery from still larger doses. In one, four grains were taken by mistake. Copious vomiting was produced by emetics in about a quarter of an hour, but the system was violently affected, there being not only excessive tetanic rigidity of the muscles, but frequently recurring convulsions, with other symptoms already detailed. The man recovered entirely in two or three days.(*s*) In another case, by Mr. Chippendale, a man who had been in the habit of using small doses for an imaginary spermatorrhœa, took four grains of strychnia, and four of morphia, in an ounce of spirit, with the intention of destroying himself. Tetanic spasms ensued in about half an hour; but in this, as in the preceding cases, the intellect remained unaffected—a fact the more remarkable, on account of the large quantity of morphia which had been swallowed. The latter produced none of its peculiar effects, except, perhaps, an itching of the skin, which occurred in the convalescence, and might perhaps be ascribed to it. The man recovered perfectly. The stomach-pump was used one hour after the poison had been taken, and water and animal charcoal injected into the stomach.(*t*) A case is reported by Dr. Bly, of a man who by mistake took four grains of strychnia at a dose. Tartarized antimony was immediately administered, but ineffectually, and tetanic convulsions and locked jaw succeeded. These symptoms were palliated by chloroform inhalations, so that an additional dose of tartar emetic could be administered. In thirty-five minutes after the poison had been swallowed the emetic operated freely, and the anæsthetic inhalations having been continued, the threatening symptoms ceased in the course of seven or eight hours.(*tt*) In this case it is probable that the tartar emetic taken immediately after the poison hindered the absorption of the latter. Mr. Iliff has reported a case in which a female recovered after swallowing two drachms of powdered *nux vomica*.(*u*)

§ 759. 4th. The *post-mortem appearances* are by no means characteristic. To some extent the degree of rigidity of the body, and the permanence of this condition, are peculiar. In the case of Cook, poisoned by Palmer, Dr. Harland testified that the body was very stiff, more than dead bodies generally are. The muscles were very highly developed; they were strongly contracted and thrown

(*p*) Am. Journ. Med. Sci. April, 1850, p. 546, from Western Lancet.
(*q*) Lancet, 1852, vol. ii. p. 198.
(*r*) Med. Times and Gaz. Ap. 1854.
(*s*) Ibid. Ap. 1855. G. Hinnell.
(*t*) Med. Times and Gaz. Ap. 1855. G. Hinnell.
(*tt*) New York Journ. of Med. Nov. 1859, p. 422. (*u*) Lancet, 1849, Dec. 15.

out. The hands were firmly closed.(*uu*) In another case, reported by Mr. Wilkins, it is stated that seven hours after death the rigidity of the body was so great as to allow it to be lifted by the heels; it is described as being "as stiff as wood."(*v*) In some cases there have been found signs of inflammation in the intestinal canal, and very generally congestion of the brain and its membranes, and sometimes softening of its substance and of the spinal marrow. The right cavities of the heart are usually contracted, and the blood dark and fluid. In some instances, no doubt, these appearances were due to cadaveric changes, and were not the result of any peculiar influence of the poison.

§ 760. 5th. The usual *tests for strychnia* are the following. The crystals are elongated octohedral prisms. It is slowly dissolved, and acquires a red color by the addition of strong nitric acid. The color is immediately destroyed by the protochloride of tin. Specimens of the alkaloid entirely free from brucia are not turned red by nitric acid. If a drop of a solution of chromate of potash be added to a solution of strychnia in sulphuric acid, the mixture acquires a beautiful violet color, which becomes darker on standing. If a grain of peroxide of lead be added to the solution of strychnia in sulphuric acid, brilliant colors are produced, which pass through various shades of blue, red, and yellow.

The following process for the detection of strychnia in mixed fluids was devised by Prof. Graham and Dr. Hoffmann, for the purpose of testing the presence of this poison in the bitter ales of Burton.(*vv*) It may be also applied to other liquids. Two ounces of animal charcoal are to be shaken in about half a gallon of the suspected fluid, and this is to be left at rest for a night, and then filtered through paper. The fluid is thus deprived of its bitterness. The charcoal which contains the strychnia is then to be boiled for half an hour in eight ounces of rectified spirit, and the spirit, after being filtered, is concentrated by distillation. The remaining liquor, which is watery, is next decomposed with a few drops of solution of potash, and agitated with an ounce of sulphuric ether. The ether contains the strychnia in a state of considerable purity, and, on being evaporated, it deposits a white soluble matter, of intense bitterness. If a drop of sulphuric acid be placed upon this residuum, and then a fragment of bichromate of potash, in the resulting liquid a beautiful violet tint appears at the points of contact, and soon spreads over the whole fluid. This change of color seems to be characteristic of the alkaloid strychnia. The discoverers could detect with it half a grain of strychnia in half a gallon of the pale ale (of Allsop & Son), into which it had been purposely introduced. These gentlemen attest that, after analyzing a large number of samples of pale ale taken indiscriminately from the supplies of various manufacturers, *not one of the varieties of beer*, when tested with the greatest scrupulousness, gave the *slightest evidence of the presence of strychnia.*(*w*)

(*uu*) Times and Gazette, May, 1856. (*v*) Guy's Hosp. Reports, 3d ser. iii. 484.

(*vv*) This inquiry was instituted at the invitation of the English brewers of ale, who were naturally indignant at the assertion made in a lecture by M. Payen, of Paris, that strychnine was there prepared in large quantities, for the purpose, as had been ascertained by the French authorities, of being sent to England, to be there employed in the manufacture of the celebrated bitter beer of that country.

(*w*) Med. Times and Gazette, May, 1852.

The following is a description of the process used by Mr. Lonsdale in a case of supposed poisoning by a grain and a half of strychnia:—(*x*)

Experiment I.—(*a.*) Portions of the stomach and contents were boiled in water pretty strongly acidulated with sulphuric acid; the mixture was then filtered, and to the liquid thus obtained a quantity of carbonate of lime was added, sufficient to neutralize the acid. This was evaporated to dryness, and digested with rectified spirit; after which it was again filtered, to remove all insoluble matter. The result, a clear liquid, was then evaporated to the consistence of syrup, which had a slightly yellowish color, and, when tasted, was distinctly and persistently bitter.

(*b.*) To this alcoholic extract a few drops of strong sulphuric acid were added, and then a small quantity of powdered bichromate of potash. A purplish tint was at first observed, but it very speedily changed to a beautiful light green, which remained permanent.

(*c.*) A very small quantity of the above extract was mixed with sulphuric acid and peroxide of lead, but there was no appreciable change of color.

(*d.*) A similar quantity was tried with the bichromate of potash test, with a very slight change of color, hardly appreciable. With a large quantity, the color was unmistakable.(*y*)

The most reliable test, and the one most generally adopted for the detection of strychnia, is that proposed by the Belgian chemist, M. Stas. A small quantity of acetic acid and water is digested with the suspected substance, and dissolves the alkaloid if it is present. This solution is separated from organic matters, if any there be, by repeated washing with water and alcohol, and by filtration, and is then rendered alkaline by potassa, which precipitates the strychnia. The latter is redissolved by means of ether, which is poured off and allowed to evaporate, leaving strychnia behind it. The alkaloid may be recognized by its crystalline form, its intense bitterness, and its reactions with the appropriate chemical tests.

The *physiological test*, proposed by Dr. Marshall Hall, consists in applying the suspected solution to the back of a young frog freshly taken from the pond. The skin should be first dried with blotting-paper. So small a quantity as the five-thousandth part of a grain of strychnia, thus applied, produced the characteristic effects of the poison.(*yy*)

V. *Aconite.* (Monkshood; Wolfsbane.)

§ 761. 1st. *Effects.*—The leaves and root of *Aconitum Napellus* contain one of the most extraordinary and speedy poisons known. The former have proved fatal when eaten by mistake for salad; and the latter, from its resemblance to horseradish, has given rise to many unfortunate accidents. The root is tapering, about the thickness of the finger at its upper part; its color externally is brown, internally it is white and fleshy. Its taste is bitter, but after a few minutes a remarkable numbness and tingling are perceived on

(*x*) Ed. Month. Journ. Feb. 1855, p. 116. (*y*) Vide Experiment (*b*).
(*yy*) Lancet, June, 1856, p. 623.

the lips, tongue, and fauces. The leaves, when chewed, have the same taste, and produce the same feeling of numbness.(z) Dr. Isaacs has reported the case of an apothecary's clerk poisoned by the inhalation of the dust of aconite-root, which he was pulverizing. The effects of the drug were first manifested by numbness of the tongue and difficulty of swallowing, with dryness and a sense of constriction in the fauces. About an hour afterwards there was some difficulty of respiration, with diminution of the force and frequency of the pulse, greatly dilated pupils, loss of voice, and prostration of strength. Very slight convulsions occurred, at repeated intervals, for about five hours, when the patient was supposed to be dying. The countenance was hippocratic, the pupils very greatly dilated, the pulse 36 and feeble, and the breathing correspondingly slow. There was also, from the first, great oppression in the cardiac region. Two weeks afterwards the aphonia still continued.(zz) The pharmaceutical preparations most in use, and which, therefore, are most apt to be either accidentally or intentionally employed, are the ordinary and the saturated tinctures and the alcoholic extract. There being several formulæ for these preparations, they are variable in strength, owing to the variable quantity of aconitina contained in the prescribed dose. Thus, two persons, who took twenty-five minims of the tincture, died; while another, who swallowed an ounce and a half of the tincture prepared according to the Parisian Code, survived. The *aconitina* prepared by Mr. Morson, of London, is so powerful that, according to Pereira, one-fiftieth of a grain has endangered life; but, on the other hand, a case is reported by Dr. Golding Bird, in which, although two grains and a half of this alkaloid were taken, the patient recovered, after having very dangerous symptoms. Pereira states, also, that there is a spurious aconitina sold in the shops, which is inert, or nearly so, since he took one grain of it without perceiving the least effect upon the tongue or otherwise. The effect of a slight increase in the medicinal dose is well seen in the following case, communicated to Pereira by Dr. Redfern. The patient, who was suffering with acute articular rheumatism, took five drops of the tincture three times a day, for two days, without marked relief. On the third day the dose was increased to six drops, at the same intervals. Two doses of this amount were taken; and an hour after the second he was found in a state of extreme restlessness, and complaining of great pain in various parts of his body. To use his own expression, he felt as though his skin were too tight for his body. He described his sensations as intolerable. At this time there was much frothing at the mouth, with violent retching at intervals. The surface of the body was cold, and bathed in profuse perspiration, which ran down his face in streams. The pulse, though at first 150 in the minute, fell to between 50 and 60 in a few minutes, and was so small and compressible as scarcely to be felt at the wrist. He recovered under the use of brandy and water, and external warmth.

§ 762. 2d. *Symptoms.*—The first and most usual *symptoms* are a burning and numbness of the lips, mouth, throat and stomach, followed by tingling in

(z) Pereira. For several cases, vid. Headland, Lancet, March, 1856, p. 341.
(zz) New York Journal of Medicine, Sept. 1859, p. 191.

various parts of the body, loss of sensation, vertigo and dimness of vision, tremors, cramps, great prostration, sense of fulness in the throat, speechlessness, hurried respiration, and death, in a state of collapse. Vomiting and purging are also usual symptoms, but are not observed in every case. General convulsions are unusual, as we find that, in fifty-three cases collected by Dr. Tucker, of New York,(*a*) they are mentioned as having occurred only in seven. In four out of twelve more recent cases there were convulsions. The mind remains perfectly clear, there being in general neither stupor or delirium. The latter symptom was seen in three cases of the number collected by Dr. Tucker. When applied to the eye, the preparations of aconite are said to have the effect of contracting the pupil. In seventeen out of twenty cases, however, in which the poison was swallowed, it is stated by Dr. Tucker that the opposite effect was observed. Sometimes the sight is temporarily impaired. The symptoms of poisoning by aconite usually arise within a few minutes after it has been taken; and when death takes place, it is, in the majority of cases, within three hours. The quantity of aconite, or any of its preparations, capable of producing death, is, for the reasons before given, unknown. The case related by Dr. Easton,(*b*) in which twenty-five minims of the tincture were taken, shows probably the smallest dose which has proved fatal. Another case, in which twenty-five drops proved fatal, occurred in January, 1853. A gentleman, feeling himself unwell, stepped into a drug store, and was given by a medical student, a friend of his, who was attending, this amount of the tincture, under the supposition it was the proper dose. He expired about four hours after taking it, under the symptoms of poisoning by aconite. Dr. Male, of Birmingham, it is stated, died from the effects of not more than *eighty* drops, taken in ten doses, during a period of four days, the largest quantity taken at once being *ten* drops. An excise officer in England died in consequence of tasting Fleming's tincture of aconite. He said he thought he had swallowed about a teaspoonful. He did not complain at the time, but in the course of a few hours was cold and pulseless. The remedies applied were ineffectual, and he soon expired.(*c*)

§ 763. 3d. *Post-mortem appearances.*—The few cases in which *post-mortem* examinations have been made, have revealed nothing peculiar, the most constant appearance being congestion of the vessels of the head and of the lungs. It is, of course, evident that no conclusion can be drawn from such imperfect data as these.(*d*) Of the fifty-three cases collected by Dr. Tucker, in which

(*a*) For these valuable tables, vid. New York Journal of Medicine for March, 1854.
(*b*) Glasgow Med. Journal for July, 1853.
(*c*) Am. Journ. Med. Sci. April, 1852, p. 553.
(*d*) In the trial of John Hendrickson, Jr., for the murder of his wife by poisoning, at Bethlehem, Albany County, New York, Dr. Swinburne, who made the post-mortem examination, inferred from the emptiness of the stomach and small intestine, the corrugation of their mucous coat, and the presence of a reddish, viscid mucus in the stomach, that *vomiting* had taken place, and that this vomiting was produced by *aconite!* Dr. Salisbury, who had charge of the chemical analysis of the organs of the deceased, testified that he tested a *small portion of the stomach and a small portion of the duodenum* for prussic acid, most of the mineral poisons, then for morphine, strychnine, "stramonine," and other poisons, none of which he discovered. He then inferred the presence of *aconitine*, from the fact that, after digesting a small portion of the stomach and duodenum in alcohol, evaporating, filtering and purifying, finally with

aconite in various forms and in all variety of poisonous doses was taken, twenty-seven recovered, and twenty-six died. In all those who recovered, emetics and external and internal stimulants were employed.

§ 764. 4th. *Tests.*—The remarkable symptoms occasioned by the plant, and the discovery of a portion of that which has been taken, will generally be sufficient to explain the cause of death. The only case in which it was criminally administered, is that which is related by Dr. Geoghegan, where the deceased had eaten for his dinner some greens dressed by the prisoner. The latter was convicted upon the medical and general evidence, no trace of the poison having been discovered in the body. He confessed before his execution that the powdered root of aconite had been mixed with pepper, and sprinkled over the greens.(*e*)

Stas' method (§ 760) may be employed for separating the alkaloid of aconite from organic liquids. The chemical tests of its presence are thus stated by Dr. Taylor: It fuses and burns with a bright yellow flame; heated in a tube it evolves first an alkaline and then an acid vapor; it is soluble in weak acids and alcohol; nitric acid dissolves it without a change of color; sulphuric acid gives it a yellowish color, and on adding a crystal of bichromate of potash, green oxide of chromium is set free. Iodine water gives a reddish-brown precipitate in a solution of the sulphate. Tannic acid precipitates the solution; it is precipitated whitish-yellow by chloride of gold, but not by chloride of platina. Gallic acid, corrosive sublimate, iodide and sulphocyanide of potassium produce no change in the solution. Dr. Headland has proposed the application of the physiological test to the detection of this poison. If $\frac{1}{20}$th of a grain be obtained it will be enough; $\frac{1}{300}$th of a grain will poison a mouse with characteristic symptoms; $\frac{1}{100}$th, a small bird; $\frac{1}{1000}$th of a grain causes tingling and numbness on the top of the tongue; $\frac{1}{100}$th, dissolved in spirit and rubbed into the skin, causes loss of feeling lasting for some time.(*ee*)

VI. *Lobelia Inflata.* (Indian Tobacco.)

§ 765. This plant, which in the hands of empirics has been productive of so much mischief, is very similar in its effects to ordinary tobacco. It is a powerful nauseating emetic. It causes severe and speedy vomiting in most cases, attended with continued and distressing nausea, sometimes purging, copious sweating, and great general relaxation, extreme prostration, anxiety, contracted pupils, insensibility, and occasionally death preceded by convulsions. As an emetic, the dose is from ten to twenty grains, as an expectorant, from one to five grains. The poisonous principle, called lobelina, a viscous, transparent oil with a strong alkaline reaction, has been obtained in a pure state by M. Bastick.(*f*) The trial of Samuel Thompson for the murder of Lovett

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animal charcoal, and then testing the filtered solution by boiling in sulphuric acid, it was "*turned to a deep port-wine red color.*" We beg leave to refer the reader for well merited strictures upon the medical and chemical evidence given upon this trial, to the candid and able review of it by Prof. Charles A. Lee, in the American Journal of Medical Sciences, for Oct. 1844.

(*e*) Dublin Journal, July, 1841.

(*ee*) Lancet, March, 1856, p. 343.

(*f*) Gaz. des Hôp. July, 1851.

by this drug, is given in considerable detail in the chapter on "Malpractice." Other cases of death from its administration, both in this country and in England, where the peculiar practice of Thompson has been extensively introduced by a person named Coffin, and is there called "Coffinism." Dr. Letheby, in his testimony upon an inquest held upon a man who died from the effects of a lobelia emetic given him by a green grocer, stated that within three or four years there had been, in England, *thirteen* cases of poisoning with it.(*g*) When any of these cases were brought to trial, however, the culprits usually managed to escape. But in 1856 one was convicted and sentenced to three months' imprisonment.(*gg*) Dr. Beck says, "that thousands of individuals in the United States have been murdered by the combined use of capsicum and lobelia, administered by the Thompsonian quacks." "The founder of what has been called '*Coffinism*,'(*h*) an individual who styles himself, 'A. S. Coffin, M. D., Professor of Medical Botany,' declares in his 'Botanic Guide to Health, and the Natural Pathology of Disease,' 17th ed., 1850, that lobelia 'is not a poison,' 'that it never operates upon those who are in perfect health,' and he says that the powdered leaves or pods may be given in doses of a teaspoonful every half hour, in a cup of vervain tea or pennyroyal, and repeated until it operates as an emetic; and he adds, 'Never mind Hooper, but give enough ! !' "(*i*)

(*g*) Med. Times and Gaz. 1853, ii. 568.

(*gg*) Taylor on Poisons, 2d Am. ed. p. 732.

(*h*) Vid. Pharm. Journ. Sept. 1, 1849, and Feb. 1, 1851.

(*i*) Pereira. For cases, vid. Med. Gaz. Aug. 1849 and 1850; Lancet, 1849, June, 1850, and Pharm. Journal, Aug. 1851; also Med. Gaz. 1851, p. 384. The following case of lobelia poisoning we have selected on account of its brevity. "The defendant, Riley Drake, was charged with having produced the death of Miss Lucina Frost, by 'the grossly ignorant, careless and unskilful administration of lobelia to her.' Dr. A. H. Brownson, sworn, says: 'He was called to visit Miss Lucina Frost on the 11th of September, 1843. Found her laboring under febrile excitement. Considered her complaint a case of bilious remittent fever. Continued to attend her as a physician, until Thursday, the 28th of September, when she was convalescent, and had been for several days. Patient had some appetite. Witness also testifies that lobelia is a violent emetic; which, if taken in large doses and not discharged from the stomach, will act as a fatal poison. Thinks an emetic, of any kind, would have been very improper for the deceased when he last saw her.' Dr. Brownson's testimony was corroborated in every point by that of Dr. P. R. Brooks, who was called to see the patient two or three times, in consultation with Dr. Brownson. Nancy Sutcliffe, sworn, says: 'She has known the deceased about eight years. Was there about a week before her death, and up to the time of her death. Saw Riley Drake there on Sabbath (September 24th), when the patient asked him if he thought she was getting better, and he said not. He, Drake, had something to say to her every time he was there. On Thursday, she, deceased, said to him that Brownson told her that her fever had turned, and that she was better. Drake said that Brownson was mistaken, that her fever had not turned, and that she would never get well under Brownson's treatment. Deceased asked Drake if he could help her, and he said he could. Her father would not give his consent to have Drake. Friday night, September 27th, Drake came in, and she, deceased, told him if he thought he could help her, she wished he would. He gave her some medicine, to prepare her stomach for an emetic. The next morning he came in and gave her an emetic. He gave her small seeds steeped in water. Witness saw the seeds. She vomited twice. After vomiting, appeared to feel better. Probably a teaspoonful of seeds was given. Nothing else was given. Drake did not come again till afternoon. Patient appeared better till noon, when she became distressed for breath. Seemed filled up on her stomach, and continued so until Drake came in the afternoon. He ordered ginger-tea, which was made, and *three tea-cups full* given. He then steeped *lobelia* in a tea-cup, and gave her that, *seed and all*. Tea-cup was about half full. She drank about half of it; and then wanted some physic. He gave her

VII. *Cedar Oil.*

§ 766. The oil of the common juniper (Juniperus Virginiana) has an action upon the system similar to that of savin, except that it appears to have a more decided narcotic influence. Dr. Wait reports four cases of poisoning by this oil, two of which proved fatal. The quantity taken in each case was from half an ounce to an ounce, and in three of them it was swallowed with

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some. She then said she thought she ought to take more. She then took the *rest* of the *lobelia*. He then gave her some red stuff, and then some *nerve-root tea*. She died in half an hour after the lobelia was first administered.' The evidence was confirmed in every essential particular by that of Olive Fairchild and Charles Gearnsey, with the additional fact that the deceased was severely *convulsed* after taking the emetic, on Saturday just previous to her death. Dr. Stephen D. Hand, sworn: 'Witness is a practising physician, residing in Binghampton, Broome County, New York; says he was called to examine the body of Miss Lucina Frost, on Sunday, September 31st, 1843. Was informed that she died on the Saturday previous, September 30th. External appearances of the body natural. Examined the stomach and other internal organs. Found a *tablespoonful* of *lobelia seeds* in the *stomach*. Mucous membrane of stomach softened and much inflamed. Intestines also considerably inflamed. The heart and other organs healthy. Witness has no doubt but the lobelia contained in the stomach killed the patient. Thinks there was enough there to destroy the life of any person unless thrown off. All parts of the lobelia plant contain the same properties. Thinks, from the description given of the patient by Drs. Brownson and Brooks, that an *emetic* of *any kind* would have been very *improper* under the circumstances.' The testimony of Dr. Hand was corroborated by that of Drs. West, Brooks, and Cook, who were also present at the post-mortem examination. Drs. Thomas Jackson, and N. S. Davis, both residents of Binghamptom, were also sworn in regard to the properties of lobelia, which they stated 'to be an active narcotico-acrid poison, when taken in large doses.'

"This closed the evidence on the part of the prosecution, when the defendant called Charles Gearnsey, Haman Gearnsey, Samuel Martin, Harry Martin, Alvah Parsons, Nathaniel Boughton, Charles Elliot, Sherlock Black, Rhodia Gearnsey, George Doolittle, Uriah Doolittle, James Russel; all of whom testified that they were personally acquainted with Riley Drake, and considered him a skilful physician of the *Thompsonian* school. The defendant then called the following *Thompsonian* and *Botanic* doctors to prove the qualities of the lobelia. Folkert Van Vleck, sworn: 'Lives in Hamilton, Mad. Co. Is a physician of the Thompsonian order. Twelve years' practice. Have had as many patients as I could attend to. Have used lobelia in almost every case of inflammation and fever, and usually with good success. In cases of remittent fever, should use lobelia as an emetic, and afterwards in broken doses. My patients have always recovered. Lobelia produces an emetic effect on the healthy stomach. It will not produce inflammation under any circumstances. Did not hear the testimony of Dr. Brownson. Heard Dr. Hand's. Thinks that lobelia would not produce the effect described by Hand.' Cross-examined: "Says he lost only one *fever patient*. Has lost some with consumption. Gives lobelia in consumption. Has been present at a post-mortem examination. Thinks that a single dose of lobelia could not be taken so as to produce death; it might be by repeating the dose. Cannot tell whether tobacco is a *poison*, or not. Thinks cicuta would produce nausea. Has never studied surgery, anatomy, &c., and does not deem it necessary.' William Rose, sworn: 'Is a botanic doctor. Has used lobelia for thirty years in all cases were emetics were needed. In 1825, had one hundred cases of scarlet fever, in which he used lobelia, and did not lose a patient. Has no knowledge of its possessing poisonous qualities. Understands by *narcotic* poisons, that which stops the blood. Don't know how opium produces death. Thinks arsenic would produce death quicker than cicuta.' Jabez Jeffers, also a botanic physician, gave similar testimony to that of Dr. Rose. Thomas W. Griffin, sworn, says 'he is a Thompsonian physician; has practised eighteen years as such. Says he uses three articles, viz: lobelia, Cayenne pepper, and Barbary bark, in all cases, and in all *stages* of disease, and under all *circumstances*, and *always* with *good* effect. Thinks that lobelia is not a poison.' The testimony being closed, the case was ably argued by Lieut. Gov. Dickinson, for the defendant, and by the Hon. Joshua A. Spencer in behalf of the people, when it was submitted to the jury by Judge Morrell. The jury, after an absence of a few hours, returned with a verdict of guilty. Judgment was, however, suspended until the next term of court."—*New York Journ. of Medicine*, Nov. 1844.

the view of bringing on abortion. The patients were seized with convulsions, and vomited a fluid having a strong odor of the oil. After the convulsions had subsided, they fell into a comatose condition. The *post-mortem* appearances in the two fatal cases were not very striking. There were several small red patches upon the lining membrane of the stomach, and the duodenum showed marked signs of inflammation. The uterus in each case was in a healthy, gravid state. The odor of the oil was distinctly perceived on opening the stomach.(*j*)

VIII. *Savin.*

§ 767. The leaves of this plant have, in the fresh state, a strong, peculiar, and heavy odor, especially when rubbed, and a nauseous, resinous and bitter taste. The dried tops are of a yellowish green color, and are less odorous than the fresh ones. The *oil of savin* is a limpid, almost colorless liquid, having the unpleasant odor of the plant, and a bitter, acrid taste. The medicinal dose is from two to six drops. But the use of the oil or of the dried leaves of this plant, in medicine, is exceedingly restricted. From the frequency, however, with which it is resorted to for the purpose of procuring abortion it is necessary to notice its effects. The oil of savin, when applied to the skin, exercises a powerful rubefacient and even vesicant property. Swallowed in large doses, it occasions vomiting, purging, and other symptoms of gastro-intestinal inflammation. Pereira says, that according to his observation, it is the most certain and powerful emmenagogue of the whole materia medica. He quotes, from a German author, the case of a woman who swallowed an infusion of savin to occasion abortion. Violent and incessant vomiting was induced, which was followed in a few days by excruciating pain in the abdomen, abortion, dreadful hemorrhage from the uterus, and death.

Two other fatal cases are given by Dr. Christison, in one of which abortion was produced. In two others, related by Dr. Taylor, the women, who were respectively in the seventh and eighth month of pregnancy, violent and fatal gastro-intestinal inflammation was induced, and abortion followed. In one of these cases, furnished by Mr. Letheby, the symptoms resembled those of narcotic poisoning; the woman being found lying on her back, perfectly insensible, and breathing stertorously. Although, therefore, the power of producing abortion cannot be denied to this drug, it is the result of general observation that this effect ensues only when it is taken in such doses as to endanger life by the violent inflammation set up in the stomach and intestines, and that it may yet even destroy the life of a pregnant female without bringing on the premature expulsion of the child. In a case reported by Dr. Hinds, a woman, five or six months advanced in pregnancy, brought on premature labor by repeated doses of oil of savin. Before and after this event she suffered greatly from purging, vomiting, and intense pain, which terminated in a dangerous attack of peritonitis. She was actively treated, and recovered.(*k*)

(*j*) Bost. Med. & Surg. Journ. 1849.
(*k*) Times and Gaz., Nov. 1857, p. 524.

§ 768. 1st. *Post-mortem appearances.*—After death there are found, in general, undoubted evidences of inflammation of the stomach and intestines. In one of Dr. Christison's cases, the inside of the stomach was red with patches of florid extravasation, and there was extensive peritoneal inflammation, with fibrinous effusion. The contents of the stomach had a green color. In the case communicated by Dr. Salisbury to Dr. Beck (vid. "Abortion,") where the examination was made from twelve to fourteen hours after death, the stomach was found softened and *perforated*, its contents emptied into the cavity of the abdomen, and extensive peritonitis. The perforation was about the size of a fifty cent piece, and was situated in the region of the greater curvature, near the cardiac orifice. For several inches around the perforation, the stomach was very much corroded, thinned, and softened, so that it was easily torn. The œsophagus and upper part of the small intestines are described as inflamed. Evidence of the presence of savin in the intestinal canal was obtained, and a vial was discovered in the room, still containing half a drachm of the oil of savin and tincture of lavender. In a case occurring to Mr. Lord, of Hampstead, the œsophagus presented a dark, arborescent injection, with slight patches of ecchymosis, and in the stomach there was a large patch of redness about three inches in length; the vessels of the mucous membrane were considerably injected, forming infiltrated patches, especially about the lesser curvature, but there was no ulceration or erosion. Here, also, a large quantity of a greenish fluid was found, of the appearance and consistency of green pea soup, which was found on examination under the microscope, to be due to the presence of finely triturated savin powder. The intestines, also, were highly inflamed, the duodenum being of the color of cinnabar, and there was also some peritonitis.

§ 769. 2d. *Detection.*—According to Pereira, powdered savin may, on account of its green color, be mistaken for bile, but when mixed with distilled water, it entirely subsides, and provided no bile be intermixed, the supernatant liquor will be devoid of a green color.

If savin have been given in the form of infusion or decoction, it may be impossible to detect it, but when the oil has been administered, it may be separated by distillation. Furthermore, as has been already stated, savin, in powder, may be recognized by means of the microscope; the circular pores being visible, and the acuminated shape of the leaves. The odor, also, may aid in its recognition.

IX. *Taxus Baccata.* (Yew.)

§ 770. The leaves and berries of the common yew have been known for ages as poisonous. Although Orfila gave them to animals in many cases without effect, numerous cases of accidental poisoning by them are known. It is usually classed among the acrid narcotics, although in most cases of poisoning by it which have been reported, acrimony has appeared to be the least essential of its properties. In the case of a lunatic who died fourteen hours after chewing yew leaves, the symptoms were giddiness, sudden prostration of strength, vomit-

ing, coldness of the surface, spasms, and irregular action of the heart.(*l*) Similar effects were seen in a child who died four hours after eating the berries.(*m*) Brandis says, a young woman took, as an abortive, the leaves of the yew, and fell into the sleep of death without convulsions. Indeed, one might have supposed her to be really sleeping, for her cheeks preserved the hue of life, and a quiet smile played over her face.(*n*) In Henke's Journal,(*o*) an interesting history is given of the poisoning of eleven persons by a decoction of yew leaves. They had partaken of it as a prophylactic against hydrophobia, some of their dogs having been bitten by one supposed to be rabid. In half an hour all of them were seized with giddiness, confusion of sight, pain in the head, nausea and vomiting, and then fell asleep. Two of them, however, died within about an hour, without either pain or convulsions, but with a smile upon their countenance. The rest recovered without further symptoms. The *post-mortem appearances*, in these and the preceding cases, threw no light upon the manner in which the poison affected the system, except from the negative evidence of the absence of any well-marked signs of inflammation. In Mr. Hurt's case, however, it is stated that, besides patches of redness upon the mucous membrane of the stomach, it was also much softened.

X. *Oil of Tansy.*

§ 771. The few cases that have been reported of poisoning by the oil of tansy indicate that its appropriate position is among the narcotico-irritant poisons. It has been often taken for the purpose of inducing abortion, but does not seem to possess this property, which is popularly attributed to it. A fatal case of poisoning with half an ounce of this oil, is recorded in the Am. Journ. Med. Sci. for May, 1835. Frequent and violent clonic spasms were experienced, with much disturbance of respiration. No signs of inflammation in the stomach and bowels were found upon dissection. Death occurred in two hours after taking the poison. A young lady took a teaspoonful of the *oil* in mistake for the *essence* of tansy, for the purpose of promoting the catamenial discharge. She complained of dizziness, and became insensible in ten minutes, was seized with convulsions, and her respiration was laborious and her pulse irregular. She died in one hour and a quarter after taking the oil. Another young lady in the family took of the medicine at the same time, but vomited very soon, and suffered no inconvenience.(*p*) In a case which came under the notice of Dr. Dalton, of Lowell, recovery took place in consequence of spontaneous vomiting having occurred. Nevertheless, the girl remained insensible and convulsed for some time after it. The most interesting and detailed case is that related by Dr. Dalton, Jr., of Boston. The quantity taken was a little less than an ounce and a half, and death took place in three hours and a half. The girl, when first seen, had fallen out of bed, in convulsions, and was entirely unconscious. The cheeks were highly flushed, the eyes open and brilliant; the pupils widely dilated and insensible; the skin was

(*l*) Dr. Mullan, Dub. Hosp. Gaz. 1845. (*m*) Hurt, Lancet, Dec. 10, 1836.
(*n*) Blumenbach's Med. Bibliothek, Bd. 3, p. 684. (*o*) Erg. Heft. 43, p. 127.
(*p*) Am. Jour. Med. Sci., July, 1852, p. 279.

warm; pulse full, rapid, and strong; respiration hurried and stertorous, and obstructed by an abundance of frothy mucus, which filled the air-passages and was blown from between the lips in respiration; the breath had a strong odor of tansy; convulsions occurred every five or ten minutes, in which the respiration was suspended, the arms raised and rigidly extended, and the fingers contracted. In the intervals between the convulsions there was no return of consciousness, and the jaws remained clenched so that it was impossible to administer any medicine by the mouth.

§ 772. The *autopsy* was made ten hours after death. The countenance was natural, the cadaveric rigidity was very strong, and there was only a slight discoloration of the dependent parts. The brain was not congested in any part, nor was there any effusion. Neither was there any appearance of congestion in the lungs. The interior of the heart exhaled a distinct odor of tansy, as did also the cut surface of the pectoral muscles. There was a strong odor of tansy in the peritoneal cavity. "The stomach contained about twelve ounces of a semi-fluid, yellowish-gray substance, consisting of partially digested food—potato, cranberries, onions, &c.—mixed with an abundance of small, yellowish-brown, glistening oil-globules, exhaling an excessive odor of tansy; mucous membrane generally pale, not vascular in any part, but throughout nearly the whole of the great pouch brownish and much thinned and softened, so that for a considerable space it was nearly or quite destroyed. There was an old, whitish, slightly puckered cicatrix of the mucous membrane on the posterior wall of the stomach, near the smaller curvature, but no other morbid appearance." A four months' fœtus was found in the womb, not in the least disturbed. A two-ounce phial, containing still five drachms of the oil of tansy, was found in the pocket of the girl's dress; and a mug was also found, smelling very strong of the medicine, from which it had apparently been drunk, mixed with water.

Half an ounce of oil of tansy, taken by a pregnant female to procure abortion, produced a partial loss of consciousness, and convulsions. It failed, however, of its purpose.(*pp*) No other means have as yet been proposed, or are perhaps necessary, for the detection of this oil in cases of poisoning by it, than its powerful and peculiar aromatic smell.

XI. *Cocculus Indicus.*

§ 773. 1st. *Symptoms.*—This is the fruit of *Anamirta Cocculus.* The kernel, which is the only poisonous portion of the berry, has no smell, but an intensely bitter taste. It contains an alkaloid, called *picrotoxia*, which is an exceedingly active poison. It appears, from the experiments of Glover, Routh, and Falck, that the prominent symptoms produced by it in animals are salivation and tetanic convulsions, which usually terminate fatally, although the dose required to kill is much greater than that of other poisonous alkaloids, as much as forty grains of it being required to kill a dog. Cocculus Indicus is chiefly used for the purpose of taking fish and of sophisticating malt liquor.

(*pp*) Bost. Med. and Surg. Journ. Dec. 1857, p. 383.

It is also used for the destruction of lice. Several fatal accidents have occurred in this country from it. Dr. Thompson reports one case from its *external* application. A child, aged six years, whose head, after the hair had been cut close, was washed with an alcoholic tincture of cocculus indicus, was seized, in less than half an hour after its application, with tetanic convulsions. The pupils during the spasm were exceedingly contracted, and in the interval between the attacks were dilated to the fullest extent. By touching the eyelids, the spasm could be produced at pleasure. The case was treated with energy, but the child died in a few hours.

§ 774. 2d. On *post-mortem* examination, no changes of any note were observed. A younger sister of the deceased, who had also been submitted to the same cleansing process, was likewise attacked in a similar manner. Under the use of counter-irritation by mustard, and injections of the tincture of assafœtida, she recovered, the convulsions gradually subsiding about three hours after the attack commenced. The next morning a scarlatinous eruption appeared upon the body and arms, which gradually faded during the day.(*q*)

The following account of several cases of poisoning by the internal use of this substance has been kindly communicated to me by Dr. Fish, formerly assistant resident physician at the Philadelphia Hospital, Blockley. A strong decoction of this berry (two ounces to a pint of water) is used in that institution for the destruction of vermin upon the paupers. The vessel containing it was unfortunately placed near some tonic infusions in use by several patients. Through the ignorance of the nurse, a wineglassful of this decoction was given to each of three persons, and two tablespoonfuls to three others, in mistake for their usual medicine. Two of those who took the largest quantity were seized with convulsions about twenty minutes after they had taken the poison, and died in about half an hour. This happened in the evening, and their muscles were still contracted the next morning. Both of these men were much reduced by intemperance and disease. The remaining four, who were seized within a few moments of each other, and within half an hour after they had taken the poison, presented the following symptoms: faintness, mental confusion, giddiness, dimness of vision, nausea, excessive thirst, severe pain in the abdomen, and in one case insensibility. The pulse was much weakened, and the respiration was slow and labored. Emetics were given to them, and, after their operation, mucilaginous drinks and stimulants. They all recovered, but suffered greatly from headache during the rest of the day.

Another case is mentioned in Traill's Outlines; and one is referred to by Dr. Taylor, in which the post-mortem examination distinctly revealed traces of gastro-enteritis, due to the irritant action of the poison. In this case, however, the patient lived until the nineteenth day.

§ 775. The following case presents a curious question in the administration of poisons. The prisoner was indicted for administering poison, and it was proved that two cocculus indicus berries had been given to a child nine weeks

(*q*) Philad. Med. Examiner, April, 1852, reported by William B. Thompson, Senior House Surgeon, Emigrants' Hospital, Ward's Island.

old. The child, after having swallowed them, threw up one by vomiting, and the other passed through her body in the course of nature, and was found next day in her clothes.

Two medical witnesses, called on the part of the prosecution, proved that the cocculus indicus berry is classed with the narcotic poisons; that the poison consists in the presence of an alkaloid, which is extracted from the kernel; that all the noxious properties are in the kernel; that it has a very hard exterior or pod, to break which much force is required.

One of the witnesses added that the berry, if the pod is broken, is calculated to produce death in an adult human subject, though he did not know how many berries would be required for the purpose; that he thought the poison contained in the kernel of two berries, if the pods were burst, and if retained on the stomach, might produce death in a child nine weeks old, but that the berry could not be digested by the child, and that it would pass through its body, without the pod being burst, and so would be innocuous (as had, in fact, happened in the present case).

The counsel for the prisoner objected that the berries were not poison within the meaning of the statute, for that though the kernel of the berries contained poison, yet the pod rendered the poison innocuous. The judge (Vaughan Williams) overruled the objection, and left the whole case to the jury. Verdict, guilty.

Judgment of death was recorded, but execution was stayed in order to submit the point raised by the prisoner's counsel to the consideration of the judges. The discussion before them in the Exchequer Chamber is given in detail by the reporter, and is quite interesting.

The counsel for the prisoner observed that the indictment was founded on the statute 1 Vict. c. 85, sect. 2, which makes it a capital felony to administer to, or cause to be taken by, any person, "any poison or other destructive thing," with intent to commit murder. The real question is, whether the berries in the state in which they were administered were "poison." The prisoner thought he was giving a destructive thing, but did not do so. It was inquired of the counsel by the judges what he would say if arsenic was given in a globule of glass? Again, if arsenic was put in a paper envelop, and that wrapped in oiled paper and administered? He contended that in "such states it could not be a destructive thing." But it was replied, if a person gives poison in too small a dose, you would say that it was not within the statute, as it could not be destructive. If you are right in so saying, persons might give doses of arsenic and speculate on the size of the dose. Finally, Chief Justice Wild remarked, "The question here is whether the prisoner administered poison with intent to murder. The kernel of the berry was a poison, but he administered it in a condition in which it was not capable of doing injury. Is that administering poison? If a person administers poison with intent to murder, but accompanies it with something which prevents its acting, we all think it is the offence provided for by this enactment, and that the conviction must be affirmed." Justice Alderson said, "This is very different from the case of a person administering an innocent thing and

thinking it poison; there he does not administer poison at all; here he does." The other judges concurred in affirming the conviction.(*r*)

XII. *Atropa Belladonna.* (Deadly Nightshade.)

§ 776. The root, leaves, and fruit of this plant are all poisonous. The berries are black, and have often been eaten by children in ignorance of their poisonous properties. Dr. Taylor states that they were on one occasion openly sold in the streets of London as an edible fruit. Two persons, who had eaten of them, died; and the man who sold them was tried and convicted of manslaughter. A case graphically described by this author, will suffice as an illustration of the symptoms produced. "A boy, aged 14, ate, soon after breakfast, about thirty of the berries, which he had bought in the street. In about three hours it appeared to him as if his face was swollen, his throat became hot and dry, vision impaired—objects appeared double, and they seemed to revolve and run backwards. His hands and face were flushed, and his eyelids tumid; there were occasional flashes of light before his eyes. He tried to eat, but could not swallow on account of the state of his throat. In endeavoring to walk home he stumbled and staggered; and he felt giddy whenever he attempted to raise his head. His parents thought him intoxicated; he was incoherent—frequently counted his money, and did not know the silver from the copper coin. His eyes had fixed, brilliant, and dazzling gaze; he could neither hear nor speak plainly, and there was great thirst; he caught at imaginary objects in the air, and seemed to have lost all knowledge of distance. His fingers were in constant motion; there was headache, but neither vomiting nor purging. He attempted to get out of bed, with a reeling, drunken motion; his speech was thick and indistinct. The pupils were so strongly dilated that there was merely a ring of iris, and the eyes were insensible to light. The eyelids did not close when the hand was passed suddenly before them. He had evidently lost the power of vision, although he stared fixedly at objects as if he saw them. The nerves of common sensation were unaffected. When placed on his legs, he could not stand. The pulse was 90, feeble and compressible; his mouth was in constant motion, as if he was eating something. His bladder was full of urine on admission. He continued in this state for two days, being occasionally conscious; when by a free evacuation of the bowels, some small seeds were passed; these were examined and identified as the seeds of belladonna. The boy gradually recovered, and left the hospital on the sixth day after his admission."(*s*) Total blindness is not an unusual effect of this poison. It was observed in a child, seven years of age, found wandering in the streets of London.(*ss*) Sometimes the cerebral symptoms are much more aggravated than in the above case, there being frequently delirium or stupor, which, as well as the other symptoms, is slow in passing off. In a case related in the Lancet, a lady was given by mistake a drachm of the extract in soap liniment; she fell into a comatose condition

(*r*) Am. Journ. Med. Sci., April, 1851, from Regina *v.* Clanderoy, Carrington and Kirwan's Nisi Prius Reports, vol. ii. p. 707.

(*s*) On Poisons, Am. ed., 617. (*ss*) Lancet, Dec. 1859, p. 561.

in half an hour; the pupils were widely dilated, the hands and feet cold, and the pulse scarcely perceptible. Her jaws were rigid, and there was no vomiting; the stomach-pump was used, and she recovered in a few days gradually. Another instance is mentioned in the Annales d'Hygiène, in which it caused serious symptoms, from having been put into soup instead of caramel. The toxical effects of belladonna are produced when applied locally, or introduced into the rectum. A lady suffering from hypogastric pain, applied to the abdomen a liniment composed of camphorated oil and extract of belladonna. Forty-eight hours after commencing its use she was seized with delirium. The pupils became dilated, and there were irregular movements, lipothymia, redness of the face, and a fixed stare. The menses flowed abundantly, anticipating their proper epoch by ten or twelve days.(*t*) A fatal case of the employment of an enema of a decoction of the root is recorded.(*tt*) The extract varies very much in strength, and is sometimes quite inert.

§ 777. *Atropia* is a white, transparent, silky, crystalline powder, having no odor but a very bitter and acrid taste. When impure it is somewhat colored and has an unpleasant smell. Its effects are similar to, but more powerful than those of belladonna, of which it is the poisonous principle. About one-sixth of a grain is capable of producing unpleasant symptoms. It is chiefly used for dilating the pupil. A young man poisoned himself with two grains of this alkaloid. No trace of the poison could be detected in the stomach or intestines. Dr. Andrew, of the Royal Infirmary, Edinburgh, had a patient who was under the use of atropia locally, to the eye. She swallowed one morning, by mistake, between five and six drachms of the solution, containing about two-thirds of a grain of atropia. She was immediately sensible of her error, her eyesight failed her, as well as her voice, the muscles of her face were convulsively moved, and she complained of a burning heat in her throat and stomach. She was very restless, but unable to stand. Although emetics and purgatives were given to her, the next day she was violently agitated and presented the symptoms of a person with delirium tremens. She recovered, but had double vision, spectral illusions, and various disturbances of the nervous system for a week or two.(*u*)

Three or four drops of a solution of atropia, containing two-thirds of a grain to the ounce of water acidulated with acetic acid, were put into the eye of a man with double cataract. In half an hour he had vertigo, and shortly after all the symptoms of poisoning with belladonna, flushed face, dilated pupils, and incessant hallucinations. His bladder became distended, and he was unable to empty it. Violent delirium continued during the night. He recovered in four days, these unpleasant symptoms having gradually disappeared.(*v*) Dr. Bethune has reported a case in which a solution of two grains of atropia to the drachm was applied three times in one morning to the eye. In the afternoon the patient was attacked with delirium, and had an uncertain gait, sleeplessness, and difficulty of swallowing. On the day but one after he

(*t*) Times and Gaz., August, 1859, p. 173.
(*tt*) Casper's Wochenschrift, Feb. 1845, p. 101.
(*u*) Edinb. Month. Journ., Jan. 1852.
(*v*) Am. Journ. Med. Sci. (from Gaz. des Hôpitaux), Oct. 1853, p. 540.

had another attack of delirium, which somewhat resembled delirium tremens, as he saw imaginary persons in the room.(*vv*)

Atropia and belladonna must be recognized by their physical characters; the former by its color, taste, and property of dilating the pupil, and the latter by the presence of the husks and seeds, when these have been taken, in the stools. The leaves may also be known by their botanical characters.

XIII. *Digitalis Purpurea.* (Foxglove.)

§ 778. The leaves of this plant are the part usually employed, although the seeds contain also a large proportion of its active principle, which is called *digitalin*. The symptoms produced by digitalis in a poisonous dose have some peculiarities by which they may be distinguished from those caused by other poisons enumerated in this class. It is characterized by its remarkable property of causing slowness of the pulse. This symptom, which is quite familiar to physicians, was experimentally produced in nineteen patients in Andral's clinic, the object being to test the efficacy of the pills of digitalin recommended by Homolle and Quevenne. In all of them the pulse was reduced gradually about twenty-five beats, after the use of the pills for a period of time, which varied with each one.(*w*) The effects of this poison are cumulative; it may remain some time without any obvious effect upon the system, and then display its properties suddenly in a violent manner, and also after being discontinued, its action upon the system does not immediately cease.

The following is an example of poisoning with the tincture of digitalis, where a teaspoonful was taken in a glass of water. The symptoms did not manifest themselves until five hours after the dose had been taken; then they commenced with a feeling of nausea, which increased until violent and frequent vomiting took place. There was great præcordial distress, intense frontal headache, dimness of vision, with dilated pupil, ringing in the ears, cramp in the muscles, very powerful, but at the same time, irregular and intermittent pulsations of the heart, with diminished frequency (44 in the minute), the pulse strong and tense, the respiration sighing, the thirst uncontrollable, retention of urine, sleeplessness, and great debility. The next day, in addition to these symptoms, there was violent delirium, and from that time they continued very gradually to decrease for ten or eleven days. The pulse was very long in regaining its frequency.(*x*) A case is recorded by M. Caussé of a young woman who was pregnant, and who secretly took a large quantity of the expressed juice of digitalis, either to diminish the œdema of her limbs, or to produce abortion. The latter effect was produced, and death followed in twelve days, probably as much from the want of medical care as from either the abortion or the poison.(*xx*) The tincture is often quite inert, or very feeble in medicinal properties; most of the fatal cases of poisoning by digitalis which have occurred, have been either from the leaves in substance or infusion, or from digitalin. A decoction of the leaves, prescribed by a quack in

(*vv*) Boston Med. and Surg. Journ., April, 1857, p. 201.
(*w*) Union Méd., 1852, Nos. 52 and 53.
(*x*) Union Médicale, No. 112. 1851. (*xx*) Bull. de Thérap. lvi. 101.

London, to the amount of six ounces, proved fatal in twenty-two hours. Dr. Leroux relates a case of poisoning by digitalin which nearly proved fatal.(*y*) The dose taken amounted to 0.03 grammes, which is equal to about half a grain. In another instance, in which 40 granules, equal to about two-thirds of a grain, were supposed to have been taken, the patient recovered under the use of emetics and stimulants.(*yy*) The symptoms, however, were not as urgent as in the preceding case. In still another case which recovered, the dose of digitalin taken was also 40 granules, but the symptoms were somewhat different from those enumerated above. Within an hour the person, who was a female, states that she was seized with dizziness, debility, vomiting, and cold sweats, was unable to feel her pulse beat, or to pass her urine; she lay incapable of moving or speaking, her eyes felt strained, and actually projected considerably; she had hallucinations; also continual nausea, extreme tenderness of the epigastrium, and great thirst; and the pulse fell to 46 in the minute.(*z*)

Digitalin occurs in pale straw-colored scales, or in a white powder, and is so extremely bitter, as to communicate this quality to 200,000 parts of water. Its taste is most strongly perceived in the fauces, and it has a peculiar and faintly aromatic smell. It is soluble in alcohol, is neutral in its chemical relations, combines neither with acids nor bases, and is unchanged by exposure to the air. Its maximum medicinal dose is stated at $\frac{1}{16}$ of a grain.

§ 779. The *morbid alterations* in one case where these have been reported, were merely an injection of the "external membranes of the brain, and some redness of the mucous membrane of the stomach." It need hardly be said that this evidence amounts to nothing. In M. Caussé's case, the mucous membrane of the stomach near the lesser curvature of the pyloric orifice was covered with purplish patches. This was the only lesion referable to the action of the poison. Two cats accidentally shut up in a room where this plant had been spread out to dry, were found the next morning dead. They had eaten of the leaves. Their bodies were very much relaxed, and, it is stated, putrefied very soon.(*a*)

XIV. *Quinia.*

§ 780. The occasional occurrence of alarming and even fatal effects from the use of sulphate of quinia, renders it necessary that we should briefly notice them. When given in larger doses than usual, continued for too great a length of time, or in persons peculiarly susceptible to its influence, it produces considerable cerebral disturbance, and may occasion severe headache, vertigo, deafness, diminution or loss of sight and of speech, delirium, coma, and great prostration.(*b*) Dr. M'Lean relates four instances in which complete blindness was produced, from which, however, the patients partially recovered in

(*y*) Union Médicale, No. 99. 1852.
(*yy*) Dr. Chereau, Union Méd. Jan. 10, 1854. Quoted in Ed. Monthly Journ. for August, 1854.
(*z*) Annuaire de Thérap. 1858, p. 102.
(*a*) Archiv. für Pharmacie, Oct. 1858, p. 16.
(*b*) Wood and Bache.

the course of a year. In one of these cases, three drachms were given in the course of 36 hours; in another, an ounce; in the others the quantity was somewhat less, being in one, three drachms and a half in three days, and in the other the quantity is merely said to have been "large."(*c*) In the same journal will be found the paper of Dr. Baldwin detailing his experiments upon animals, and giving the particulars of a case which came under his notice, where he considered that death resulted from the use of quinia, although not administered in large doses. Death was preceded by extreme restlessness, dilatation of the pupils, blindness, and convulsions. The disease was intermittent fever. Without presuming to deny the accuracy of Dr. B.'s opinion of the cause of death in this case, we may state that we have seen precisely the same alarming cerebral symptoms in a child seven years of age, with intermittent fever, which could not have been caused by quinia as none had been taken in any form. A man with acute rheumatism, under the care of M. Récamier at the Hôtel Dieu, after taking about 100 grains of the sulphate of quinia in hourly doses of from four to five grains, was suddenly attacked with delirium and died in a few hours. A similar case occurred under M. Husson's care, but the patient recovered. The whole quantity given was 93 grains, the symptoms coming on after the last dose.(*d*) Four cases are collected by M. Mélier in which it is said that this drug was fatal to life;(*e*) and Guersant has given an account of a physician who died poisoned by sulphate of quinia, after taking nearly five ounces of it in the course of eight or nine days.(*f*) In this, as in other similar cases, sight and hearing were lost, the limbs were cold, the breathing slow and labored, and the pulse feeble, irregular, and infrequent. Death took place by coma preceded by delirium.

§ 781. *Daphne mezereum.*—The berries of this plant, which resemble those of the red currant, are actively poisonous. In two cases reported by Dr. Schwebes, the symptoms were nausea and vomiting, followed by complete narcotism; there were convulsive movements of the eyes and upper extremities occurring at short intervals, the pupils were contracted and scarcely sensible to the stimulus of light. The children were restored by cold affusion to the head and other appropriate treatment.(*g*) Dr. Christison mentions the case of a child, aged eight years, which proved fatal, and three others which recovered. The symptoms were similar to those described.

(*c*) Am. Journ. Med. Sci. April, 1847, 515.
(*d*) Gaz. des Hôp. Dec. 1842.
(*e*) Mém. de l'Acad. de Méd. x. 733.
(*f*) Dict. de Méd. 2ème éd. xxvi. 569.
(*g*) Casper's Wochenschrift. No. 35. 1848.

CHAPTER X.

POISONOUS GASES.

I. *Carbonic Acid Gas.*

§ 782. 1st. *Effects.*—This gas in itself is irrespirable; the irritation produced by it upon the glottis being so great that it closes, and respiration becomes impossible. When, however, it is mixed with the air, it may be respired, and then produces symptoms somewhat similar to those of asphyxia, but which, nevertheless, are due to its specific narcotic action upon the system through the mucous membrane of the lungs. Under the present head we include cases of poisoning by charcoal fumes, which, however, contain, besides carbonic acid, carbonic oxide and traces of carburetted hydrogen. The first symptoms produced by this gas are heaviness of the head, a sensation of weight or pressure upon the temples, ringing in the ears, and a disposition to sleep. Then nausea and sometimes vomiting follow; the respiration becomes slower, difficult, and sometimes stertorous; the pulsations of the heart, which are at first precipitate, then become irregular, and finally slower; the muscles are paralyzed, and the individual falls into a comatose condition, which may last several hours before life is extinct. Occasionally, secondary phenomena, such as nasal or pulmonary hemorrhage and pneumonia, are observed. Still more serious consequences may result, as in the case of a man whose attempt to destroy himself with charcoal fumes but who was interrupted after he became insensible. An inflammation of the sciatic nerve occurred, followed by general paralysis, delirium, and death.(*e*) The general appearance of the body varies in different cases, according to the rapidity of death and the length of time elapsing before it is seen. Sometimes the face is red and swollen, the eyes bright and glistening, the limbs flexible, and there are red spots in various parts of the body; in others, on the contrary, there may be remarkable pallor, and a tetanic stiffness of all the muscles.

§ 783. The body has sometimes an appearance of complete repose in natural sleep; but sometimes, also, the features are swollen, discolored and distorted. The internal appearances are a vivid red, or sometimes a violet color of the blood, or, again, this fluid may be black and thick; the soft solids are everywhere of a brighter color than natural; the lungs are voluminous, and of a brownish black color on their exterior, and red internally; the body retains its heat and flexibility for a considerable time, and putrefaction occurs more slowly than after other modes of death.(*f*.) The presence of carbonic acid in the air of a room where persons have died or been more or less affected by it, may be detected by the white precipitate formed by it with lime-water or a solution of subacetate of lead. The *proportion* in which it exists may

(*e*) Arch. Gén. 5ème sér. ix. 476.

(*f*) Briand, Méd. Lég. p. 414.

be detected, as recommended by Dr. Taylor, by introducing into a measured quantity, in a graduated tube over mercury, a strong solution of caustic potash. The degree of absorption will indicate the proportion of carbonic acid present.(*g*)

§ 784. Death from the inhalation of carbonic acid gas is almost always, where it is not suicidal, produced accidentally. There can be no doubt, however, but that a person may be thus destroyed by criminal design when asleep, this gas being of so insidious and oppressive a nature, that the individual may pass readily, without waking, from natural sleep into a state of fatal coma. Attendant circumstances may awaken a suspicion of wilful poisoning, but there is evidently nothing in the medical aspect of the case by which death can be attributed to the action of another rather than to that of the individual himself. The study of the effects of carbonic acid upon the system, under the various circumstances where it is inhaled, is important only as enabling us to refute unjust suspicions of other violent causes of death, and especially of poisoning by other agents. Such suspicions are very apt to be entertained. Dr. Christison relates a case, in which a man and woman who had survived the effects of the gas generated from a pan of burning coals in their apartment, while at the same time four other persons in the room perished, were imprisoned on suspicion of having conspired to murder their companions. Similar cases have frequently been the subject of examination before the coroner's inquest.

§ 785. Carbonic acid is disengaged not only during the combustion of fuel, but may be present in deleterious quantity in the atmosphere from other sources. Thus it has been the cause of death by the non-renewal of the air where a large number of persons are confined in a close apartment, and are obliged to respire the same air repeatedly; it is disengaged in breweries during the process of fermentation, and in green-houses, from the plants, during the night; persons have been frequently destroyed by it who, for the sake of warmth, have laid themselves down near the vents of lime kilns; and it is well known that it accumulates in the shafts of coal mines, and has there been the cause of death to large numbers of persons. The only one of these cases that can well become the subject of medico-legal inquiry is that in which death results from the gases evolved by the combustion of fuel. (We use the word *gases* since, as already remarked, it is by no means certain that the fatal effects are always due to the disengagement of carbonic acid gas. Carbonic oxide, which is also evolved, is still more rapidly poisonous than carbonic acid gas.)(*h*) On the continent of Europe, and especially in Paris, self-destruction by the vapors of charcoal is one of the most common forms of suicide. In England and the United States, this agent is seldom resorted to, while accidental death from the gases escaping from burning coal or the smothered combustion of wood is very frequent.

(*g*) Med. Jur. p. 529.

(*h*) M. Chevalier, in the Oct. number of the Ann. d'Hyg. for 1854, has related a case of poisoning by the vapors of carbon. He shows that three or four per cent. of carbonic oxide will suffice to destroy a strong dog, that would not have been killed by less than thirty or forty per cent. of carbonic acid in the air. Warm-blooded animals may be destroyed by one per cent. of carbonic oxide.

§ 786. 2d. *Qualities.*—Carbonic acid gas, when not heated, is heavier than common air, and will therefore be found in greatest quantity near the floor after combustion has ceased; but during combustion, or while the air is still warm, it will be equally diffused through the apartment. Dr. Taylor found, by experiment, that in burning a quantity of charcoal actively in an open brazier raised above the floor, in a large apartment, the proportion of carbonic acid was nearly equal in air taken a foot above and a foot below the level of the source of combustion, there being no current to affect the results. The inferences which he draws from this and from other considerations, are—1st. That in a small and close apartment individuals are equally liable to be suffocated at all levels, from the very equal and rapid diffusion of carbonic acid gas during combustion. 2d. That in a large apartment, unless the gas be very rapidly diffused by a current of air, the air around the source of combustion may become impregnated with a poisonous proportion, while that at a distance might still be capable of supporting life, because carbonic acid requires time for its perfect and equable diffusion in a very large space.(*i*)

§ 787. The following case may serve to show the circuitous route by which carbonic acid may find its way into bedrooms:(*j*) A man and his wife were found dead in their bedroom; the first in an easy bent position on his right side, on the floor; the latter in a similar position, and her countenance wore a mild and placid expression. No marks of violence were found upon the bodies, and with the exception of slight suggillations on the man's back, the skin was perfectly natural in color and appearance. A post-mortem examination and a chemical analysis were made without any indication of poisoning being detected. There was a singular and intolerable smell in the house, strongest in the chamber. It was found, upon further inquiry and examination, that a straw mattress had been burnt in the cesspool of an adjoining yard, a few days previously, the embers of which were still in a state of ignition, and when stirred, gave off dense volumes of smoke and a disgusting smell resembling that in the house. The walls of this cesspool and of the foundation of the house were of loose stones, and under the influence of a strong west wind the products of combustion had found their way through the foundation into the boarded walls of the house, and thence into the chamber. No sulphuretted hydrogen could be detected in the gas which still escaped into the room, but sufficient carbonic acid to fatally contaminate its atmosphere. Briand enumerates several instances in which carbonic acid, coming from fires lit in an apartment other than that occupied by the deceased, has nevertheless penetrated into it and been the cause of fatal accidents.(*k*) In one of these cases a man and his wife were found dead in bed, suffocated by gas produced by the charred woodwork in the neighborhood of a fire in a room at the opposite end of a long corridor on the same floor. The gas had worked its way under the floor until it found a vent in a crack of the flooring in their apartment. In

(*i*) Med. Jur. p. 535.
(*j*) An account of two cases of poisoning with carbonic acid, in remarkable circumstances, communicated by Jos. Law, Es., Surgeon, &c., Ed. Month. Journ. Mar. 1853.
(*k*) Méd. Lég. p. 418.

other instances the gas was driven through stove-pipes, and from one chimney-flue to another on different floors.

§ 788. 3d. *Lighting gas.*—The ordinary illuminating gas, which consists chiefly of light carburetted hydrogen, contains also vapors of volatile liquid carburets of hydrogen, carbonic oxide, and other elements. Light carburetted hydrogen is in itself hardly poisonous, but the composite gas, which is now everywhere so freely used for burning, has frequently caused fatal accidents. Still, the atmosphere may be very offensively loaded with it, and yet be breathed for a short time with impunity. It does not appear to act merely as an asphyxiating agent, but rather like a narcotic. The first symptoms are nausea, headache, noises in the ears, and great prostration. All of these become aggravated; the breathing then becomes oppressed, the limbs are paralyzed, and death is preceded by coma and convulsions.

The *post-mortem appearances* are, generally, intense cerebral and spinal congestion, redness of the bronchial mucous membrane and of the lungs, and a dark color of the blood. In the fatal cases which occurred at Strasburg, and which are reported by M. Tourdes, the bronchial tubes were filled also with a white, thick, and viscid froth, streaked with blood.(*l*)

The following case is reported by Gärtner, of Stuttgard.(*m*) The gas affected a lady, her servant maid, and also an English pointer dog. The lady was first seized; her illness began with an affection of the head, sickness, vomiting, and purging of thin rice-water-like stools, in which whitish flakes were observed. After twelve hours she recovered, but felt very drowsy. On the fifth day she experienced pain in the back part of the head, lassitude, vertigo, tinnitus aurium and loss of appetite, accompanied by a loaded tongue, a small pulse of 90, and cessation of the menses. Blood of rather a dirty dark-red color, presenting no buffy coat, was abstracted from a vein. Next day, the patient was worse; she was quite insensible, and lay with closed eyelids; the eyes were turned up, the pupils were much contracted, and unaffected by the light; the face was not swollen; there was trismus; the arms were flexed at the elbow-joints; the respiratory movements were very feeble; the pulse was hardly perceptible; and the skin warm, but insensible to the touch. She was, however, restored by venesection, and other remedies.

In the servant girl similar symptoms occurred, but not with much severity, which may be attributed to the fact that the atmosphere of her chamber had not been so strongly impregnated with the gas. She had severe cramps of the extremities, great jactitation of the hands, flexion of the arms at the elbows, great restlessness, and inclination to yawn. Her blood presented no buffy coat. Latterly she had a non-febrile bloody diarrhœa. She recovered in fourteen days from the date of her seizure.

The dog was found insensible, and quite stiff, as if dead, but it soon recovered.

A man employed to clean a covered passage for water, into which a gas-pipe had leaked several days before, was sickened by the smell of the air, and

(*l*) Ann. d'Hyg. t. iii. p. 457. Vid. also Devergie, Méd. Lég. t. iii. pp. 72 and 75.
(*m*) Ed. Month. Journ. Oct. 1854.

fell with his head under the water. In about five minutes he was with difficulty dragged out, by means of a noose round his neck. He was pale and breathed feebly, but gradually his warmth and pulse became natural; the breathing, however, was oppressed and gutteral, and the muscles of the trunk and limbs spasmodically contracted. Death took place in about seven hours. The body, which was examined thirty-five hours afterwards, was rigid, and everywhere seemed congested with blood. It exhaled a strong alliaceous odor, and the stomach and intestines were distended with a gas which took fire and burned when flame was applied to it.(*n*)

II. *Sulphuretted Hydrogen Gas.*

§ 789. This is the principal deleterious gas, which is evolved from privy wells, and from foul drains and sewers. Its familiar and extremely offensive odor affords such unmistakable evidence of its presence, that unless a person is obliged to inhale it, or is exposed to it in a concentrated form, accidents will rarely occur from it. The consideration of its effects, and the means of obviating them, is evidently more the subject of medical police or hygiene, than of legal medicine. A few observations may not, however, be misplaced. When not existing in a very large proportion in the atmosphere, it may be breathed for a certain time with comparative impunity, giving rise merely to lassitude, loss of appetite, and sometimes a typhoid febrile condition. Again, when inhaled in a greater quantity, the symptoms are, acute and oppressive pain in the head and pit of the stomach; and for this reason, this gas has received from the French the name of "*plomb des fosses.*" If, after experiencing these sensations, the individual does not immediately withdraw from his position, he loses his consciousness, and falls, completely deprived of sensibility and the power of motion; a reddish froth runs from the mouth, the body is cold, and the face livid; the eyes are dull, and the pupils dilated and immovable; the pulse very irregular, and almost imperceptible; convulsions ensue, and the person dies comatose.

In a case reported by Dr. Radcliff, of Baltimore, a man who descended into a privy-sink nearly eighty feet deep, already almost emptied by machinery, was overcome by the gases and fell to the bottom, where he remained for two hours before he could be extricated. Meanwhile cold water was repeatedly thrown upon him. Fifteen minutes afterwards he was much asphyxiated and depressed, with hurried and difficult respiration, but he recovered rapidly.(*o*)

§ 790. 2d. The *post-mortem appearances* usually described are the following: A proneness to rapid putrefaction; an offensive odor from all parts of the body; the blood dark and liquid; the right side of the heart congested, and the muscles of the body of a dark color, and insusceptible to the stimulus of galvanism.

This is not the only noxious gas evolved from privies and drains, but it is that which is the most destructive to life. There are also ammoniacal emanations, which are extremely irritating to the respiratory mucous membrane; and

(*n*) Annuaire de Thérap. 1857, p. 288.
(*o*) Am. Journ. Med. Sci. Oct. 1858, p. 377.

nitrogen gas, which sometimes accumulates in enormous quantity, but which, although irrespirable, is perhaps not positively noxious.(*p*)

III. *Exhalations from the Dead.*

§ 791. According to the testimony of Mr. Waller Lewis,(*q*) the noxious character of the air which is found in the vaults of grave-yards is chiefly due to the presence of carbonic acid. He says that he has never succeeded in obtaining any traces of the presence of cyanogen, hydrocyanic acid, sulphuretted, phosphoretted, or carburetted hydrogen gases, even in the smallest quantity. In the vaults under St. Mary-le-Strand he found a very minute proportion of sulphuretted hydrogen. He says, also: "I examined gases formed by bodies of persons of all ages, from the stillborn infant to those who had survived to the age of ninety-two; the coffins had been in the vaults various lengths of time; those that had been there a week were examined as well as those that had remained there a century and a half. Death had been caused by accident, by age, by disease. The latter had been of the most various kinds—typhus, phthisis, smallpox, childbirth, dropsy, and cholera. Not one of the above circumstances seemed to influence in the slightest degree the composition or character of the gases. These were most remarkably similar in every instance. All the gases I analyzed, or otherwise examined, were composed of nitrogen and carbonic acid gas mixed with atmospheric air, and holding decomposing animal matter in suspension. There was but one ingredient that was sometimes present and sometimes entirely absent; this was ammoniacal gas, which was sometimes present in very large quantities. When this was added to the other gases, it overcame all other odor; when it was absent, the smell much resembled that of very putrid moist cheese. In every instance I searched most carefully for the presence of the hydrogenous gases mentioned, but never found the slightest trace of any of them." The same results were obtained by Pellieux, in Paris, who examined all the cemeteries around that capital.(*r*) A lighted candle, let down into one of the vaults which had stood open for twenty-four hours, and was twenty feet deep, was extinguished at the depth of five feet. Pellieux endeavored to descend into it, together with the inspector, but could not remain longer than a few seconds. A grave-digger, accustomed for many years to assist in placing coffins in the vault, was obliged to descend twice before he could succeed in emptying a bladder of water and refilling it with the gas. The symptoms exhibited by those who endeavored to descend below the point at which the light was extinguished were, first, great oppression of breathing, a feeling of weight and pressure upon the temples and eyelids, succeeded by dryness of the fauces, a peculiar hot and repulsive sweetish taste in the mouth, singing in the ears, and profuse perspiration. The countenance acquired a reddish hue, and the nose, cheeks, and lips became livid. They were obliged to return rapidly to the air to escape total asphyxia. The natural color soon returned, but severe headache continued for some time. Mr. Lewis says that in him the most prominent among the symptoms, after

(*p*) Vid. Briand, Méd. Lég.
(*q*) Lancet, 1851.
(*r*) Henke's Zeitsch. 1851, p. 459.

exposure to the putrefactive gases, were nausea and vomiting, succeeded by diarrhœa, and a throbbing pain in the upper part of the head, great prostration, and entire loss of appetite, accompanied with an unpleasant earthy taste in the mouth. He also says that these symptoms, after being experienced for a long time, were followed by a series of boils and phlegmonous erysipelas. In one instance, a sexton, who preceded him with a candle in the vault under the church of St. Andrew, Holborn, was scarcely able to save himself from sudden death by carbonic acid. The candle went out, and the man, after much exertion, presented himself in a pitiable condition—his eyes half starting from their orbits, breathing deeply, and evidently much oppressed.

It is hardly necessary to observe that in medico-legal examinations of bodies in a state of putrefaction the physician should guard himself against inhaling the noxious gases by the use of chloride of zinc, charcoal, and other disinfecting agents.

PART II.

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CHAPTER I.

WOUNDS.

I. *General Considerations.*

§ 792. 1st. *What a wound is.*—The term "wound," in popular language, can hardly be misunderstood. It is a form of bodily injury caused by external violence, and involving a breach of continuity in the soft parts. It may be questioned whether burns and scalds can properly be ranked as "wounds." The immediate effect of the application of a burning or heated body to the skin may not be such as to cause more than a redness of the surface, or an elevation of the cuticle into a blister; but the surface of the skin may afterwards, by the giving way of the cuticle, be exposed. Hence the reader will perceive that any legal limitations of the meaning of the word, whether based upon popular or professional definitions, are liable to be erroneous, if the intention be really to designate the results of external violence by a name which shall comprise them all. In treating of this subject in its medical aspect alone, we shall make use of the word *wound* as expressive of any form of bodily injury caused by external violence, since it is only by such a course that the medico-legal bearings of the subject can be properly considered. Hence we have used the term WOUNDS as a convenient designation for this chapter, entirely irrespective of the possible surgical or legal limitations of the word.(*a*)

§ 793. 2d. *General definitions.*—Wounds are usually classified, in reference to their visible marks upon the skin, into incised, punctured, lacerated, contused, and gunshot wounds. Although a division into mortal and non-mortal, would appear to have a more direct and useful bearing upon legal medicine, yet the unexpected complications, and, the various extraneous causes which give gravity to the simplest cases, and, on the other hand, the favorable termination of some injuries of apparently the most dangerous nature, render any such classification impracticable. These facts will become apparent in the course of this chapter, and the reader will not fail to perceive that in medico-legal practice, every wound must be judged by itself; the general principles and rules of surgery being subject to constant modifications from individual peculiarities.

§ 794. 3d. *How far dangerous.*—The varieties and the degree of danger attending wounds in general, depend very much upon some of the following

(*a*) The legal meaning of the term "wounds" is considered in another treatise, Wh. Cr. Law (5th ed.), § 832.

circumstances: "the extent of the injury; the kind of instrument with which it has been inflicted; the violence which the fibres of the part have suffered in addition to their division; the size and importance of the bloodvessels and nerves which happen to be injured; the nature of the wounded part, in respect to its general power of healing favorably or not; whether the operations of the system at large and life itself can be well supported or not, while the functions of the wounded part are disturbed, interrupted, or suspended by the accident; the youth or old age of the patient; the goodness or badness of his constitution; and the opportunities which there may be of administering proper surgical aid and assistance of every kind."(*b*)

§ 795. But in this country the physician is seldom called upon by a legal tribunal to offer an unconditional opinion upon the probable danger of a wound, his assistance is more frequently invoked for the purpose of deciding how far a given wound was the cause of death, and hence his testimony is required before the coroner upon the post-mortem examination. No one should be willing upon theoretical grounds alone, to give an opinion as to the agency of the wound in producing death. A careful post-mortem inspection will either reveal the violent cause of death, or demonstrate that it was not due to external violence; it is the duty of the physician whose opinion is desired, to make the examination most carefully himself, and to base his opinion entirely upon this, and not upon previous notions of the probable nature and effect of the wound.

Whatever parts of this examination call for the application of knowledge of which he may not be possessed, as the use of the microscope, or chemical analysis, should be committed to one who is really an "expert" in these branches. The idea is much too prevalent, and should be corrected, that the practitioner of medicine must necessarily be acquainted with all the appliances and new modes of investigation which modern science has produced; in other words, that every physician is equally competent to undertake the examination of a case involving the question of homicide. It is to this cause chiefly, viz., the disparity in the attainments of one physician as compared with another, and also to the natural division of medical science and practice into numerous departments, some of which may be cultivated to the exclusion of others—that the "disagreement of doctors" is really due. Men of equal medical attainments will rarely differ upon an essential point of pathology or practice, but ignorance, or defective knowledge in medicine, does not differ from that in any other branch of science in being usually associated with presumption and obstinacy. Still, there are few practitioners of medicine who are thoroughly prepared to enter upon an examination of all the medical aspects of a case of violent death; familiarity with the means required to carry through such an investigation, can be gained only by special study, for which, to the majority, time is wanting.

Circumstances may, however, impose upon the physician the duty of making an examination for which he does not feel himself fully competent. In remote or interior parts of the country the means for the successful prosecution of a

(*b*) Cooper's Dict. of Pract. Surgery.

medico-legal inquiry are usually not at hand; whoever may be obliged to undertake an examination under such circumstances, should endeavor to obtain the assistance of a colleague, and should candidly represent to the authorities the necessary imperfection of the examination, and what influence this may have upon the objects of the inquiry.

§ 796. 4th. *Examination of the body.*(c)—The following points must be carefully noted; the locality, the direction and the dimensions of the wound; whether there is a loss of substance or not; and whether the wound was inflicted before or after death, with the grounds of the opinion; the probable cause of the wound, and position of the body at the time; the results of the injury (ecchymosis, swelling, hernia of internal organs, concussion, inflammation, suppuration, ulceration, gangrene); notice of the clothes of the deceased, especially the portion (if any) corresponding to the place of injury; comparison of the weapon with the wound; medical assistance, and by whom rendered. Besides these general points which claim attention, a very carefully detailed account of the wound itself is required, not only to ascertain the nature of the weapon with which it was given, but also to learn how far it has penetrated the body, and what organs have been wounded. And, moreover, the importance of a general and careful examination of all the organs of the body should not be forgotten, for notwithstanding the immediate cause of death may be evident, it is still advisable to be sure that there was no cause of death in any other part. Although there may be no suspicion of poisoning, the stomach should be opened. In a case often referred to, a girl died while her father was chastising her for stealing, and on account of the marks of violent treatment upon her body, it was supposed that this had caused her death. On opening the stomach, however, it was found to be inflamed, and contained a white powder, which was proved to be arsenic. The girl had taken the arsenic in dread of her father's anger, upon the detection of the theft; she vomited during the flogging, and died in slight convulsions.

It may even happen that although no marks of violence can be found externally, or at least none which will explain the person's death, internal injuries may be discovered upon dissection, which will render it certain that the death was violent. Indeed, Casper goes so far as to declare that as a general rule when death follows an injury, suddenly or speedily, in consequence of internal hemorrhage or other effect of laceration of an internal organ, the signs of external injury are either slight or are entirely wanting. Among numerous instances of this description, furnished by Casper's experience, the following is one of the most striking. On a cold winter's night a wagoner was descending the hill from Spandau with a heavily loaded wagon, and dismounted, in order the more easily to guide his team. In doing so, he was thrown violently against one of the poplar trees which line the road, and where, in the course of the night, he was found dead. The only external injuries consisted of a slight abrasion upon the left arm, and a similar one upon the right temple. In the head there was nothing worthy of note, except that the transverse sinus was unusually distended with blood. On opening the

(c) A more detailed account of the changes after death will be found in Chap. XII.

spinal canal, about a quart of dark fluid blood escaped. The spinous process of the first thoracic vertebra was broken off. The deeper spinal muscles were ecchymosed, but the spinal marrow was uninjured. The left pleural cavity contained about thirty ounces of liquid blood. The pericardium was torn completely across, and the heart severed from its large vessels, lay almost entirely loose in the cavity of the thorax. The open ends of the aorta and pulmonary artery were distinctly visible. The heart itself was sound and firm, and on both sides, but in the ventricles especially, contained much dark coagulated blood. The left lung was entirely torn through its middle portion, and in the right lobe of the liver was a laceration two inches long, by half an inch deep. And yet the exterior of the body presented nothing remarkable.(*d*)

A case is reported by Dr. Ellis, of Boston, of a woman who was knocked down and run over by a sleigh. She lived for ten days after the accident, and there was no mark of external injury. On examination after death, the liver was found to be lacerated, the common bile-duct was torn across, and several fractures appeared in the right kidney.(*e*)

§ 797. The phenomena which intervene between death and putrefaction are often of assistance in throwing light upon the mode and period of death. The changes which take place in the body after death are due to physical and chemical laws.

5th. *External phenomena.*—Soon after death, while the body is still warm, the peculiar cadaveric smell (not putrefactive) is perceived at the same time that the surface becomes pale. The blood sinks gradually to the more dependent parts, occasioning a discoloration of the skin resembling in some respects a contusion produced during life.

The complete cooling of the body (with the disappearance of the peculiar smell just referred to) is accomplished much more slowly than is usually supposed. According to Bock,(*f*) it does not take place in less than from fifteen to twenty hours. Externally, the reduction of temperature occurs more rapidly than in the interior of the body, but in both cases it is dependent upon the temperature of the surrounding air. The bodies of old people and children, of the thin, anemic, and wasted, grow cold at quite an early period after death. But in those who die suddenly, in the fat and robust, the animal heat is more slowly parted with. *Rigidity* or *rigor mortis*, occurs generally within twelve hours after death, and lasts from thirty-six to forty-eight hours. It is more complete and lasting in those who have died suddenly, or in the course of acute inflammatory diseases, while in the weak and those exhausted by long illness it is feeble and transient. It may be distinguished from the rigidity occurring in cases of apparent death (syncope) by the fact that in the latter case the rigidity is spasmodic and partial, arises and disappears suddenly without any regularity, and returns after the contracted limb has been extended, which is not the case to the same extent in true post-mortem rigidity.

6th. *Internal phenomena.*—The blood usually remains fluid for two or three hours after death. It accumulates in the veins, owing to the last contraction

(*d*) Gericht. Med. i. 122.
(*e*) Boston Med. and Surg. Journ. April 1860, p. 222.
(*f*) Gerichtliche Sectionen des Menschlichen Körpers.

of the heart and arteries having more or less completely emptied the arterial system. The amount of blood found in the cavities of the heart, and the existence of coagula, depend upon the nature of the blood itself, and the mode of death, whether rapid or protracted.

§ 798. 7th. *Wounds made before or after death.*—The distinction between wounds made before and those made after death, depends upon the signs of vital reaction in the wound and its vicinity. If the signs of inflammation, or its products, are found; if the wound be swollen and discolored; if plastic lymph have been thrown out between its edges; if suppuration, or gangrene, or cicatrization have taken place; we have not only certain proof that the wound was inflicted during life, but also that death could not have been immediate. The question, therefore, as to *post* or *ante-mortem* infliction of the wound, cannot arise when any of the processes referred to have taken place. But when none of these signs are recognized, there may be room for doubt as to the period of its infliction. Many cases occur in which no traces of suggillation or inflammation can be detected, although an injury was received during life. This is especially the case when death results rapidly from hemorrhage from a large artery or vein, so that if a wound is made upon the dead body near to that which occasioned death, it will be impossible to distinguish the one from the other by any characteristic sign.

If death have resulted from a wound, not immediately, but still before the effusion of plastic lymph, its edges will be found swollen and everted, and coagulated blood effused in the track of the wound and in the adjoining cellular tissue. When, however, it has proved immediately fatal, as in some penetrating wounds of the heart, aorta, and spine, the above mentioned characters will not be found. This fact is most probably due to the rapid drain from the capillaries, in consequence of internal hemorrhage, or to the sudden cessation of the action of the heart. Thus, in a case related by Casper, in which a woman was instantly killed by a table-knife which was thrust through the arch of the aorta, entering the chest between the first and second ribs, the wound presented sharp and smooth edges, without a trace of either fluid or dried blood; in fact, it was exactly like a wound made upon the dead body.(*g*) It is therefore of importance to remember, that in wounds which prove immediately fatal, there may be no signs of vital reaction, and no outward effusion of blood. A case is very easily supposable, in which a wound in the region of the heart might be designedly inflicted after death; as, for instance, to divert attention from the real cause of death, which may have been due to poisoning. Although no distinction should be possible, from an inspection of the external wound, the absence of internal hemorrhage would, in such a case, betray the period at which the wound was made.

§ 799. Dr. Taylor endeavored to solve the question of the differences between wounds inflicted before and after death, in an experimental way. In one experiment, an incised wound, about three inches long, was made in the calf of the leg, two minutes after its amputation. The skin retracted considerably, the adipose tissue underneath protruded between its edges, but the

(*g*) Gericht. Leichen-öffnungen, 1s. Hundert. Fall. 9, 1853.

quantity of blood which escaped was small. Examined after the lapse of twenty-four hours, the edges of the wound were found red, bloody, and everted; the skin not in the least tumefied, but merely flaccid. A small quantity of loosely coagulated blood was found at the bottom of the wound, but no clots were found adherent to the muscles. In the second experiment, which was made ten minutes after the limb was amputated, the skin appeared to have already lost its elasticity, the edges of the wound became very slightly everted, and scarcely any blood escaped from it. On examination, twenty-four hours afterwards, the wound presented *none* of the characters of a wound inflicted during life, except that, at the bottom of the wound, a few coagula were found. Other experiments were made at a still later period after the removal of the limbs, but it was found that the wounds then made possessed still fewer points of similarity with wounds inflicted during life. From these experiments, one fact, at least, may be fairly inferred—that the coagulation of the blood is not a safe criterion of the time at which the wound was made, but that, as long as the body retains its warmth after death, this apparently vital process may still take place. If, therefore, a wound be made upon a person just dead, it is not impossible that the blood will coagulate in the wound. Facts, more pertinent than the above experiments, are, however, required to establish the fact beyond a doubt, as the accidental determination of the question upon the entire body would be naturally more conclusive than experiments upon separated limbs. On dissecting the body of a person who died of the low typhus fever which prevailed during the autumn of 1847, in a district inhabited by the lowest class of negroes, the blood was quite fluid, although death had taken place but six or eight hours before; but when allowed to stand in a cup, or in the chest whence the lungs had been removed, it speedily formed a dark and moderately firm coagulum.(*h*) Several cases in which the blood retained its coagulability after death are reported by Casper. In one of these, relative to a man who was suffocated by coal gas, it is stated that four days after death, and during very cold weather in January, the blood flowed freely when the body was opened, but coagulated quite rapidly, and so firmly, that the clots could be raised quite easily with the handle of a scalpel.(*i*) Although the swollen and everted condition of the lips of the wound is a good indication of its having been inflicted upon the living person, this appearance may be removed by causes acting after death. Thus, if the body have lain in the water, this, together with the blood effused in the wound, may have disappeared before the inspection is made, by the maceration to which the body has been thus subjected, and it is also often materially changed by the advance of putrefaction, since, by this process, the skin very soon becomes puffy, and many of the relations of the wound are changed. This is strikingly true of fat bodies, in which wounds, and especially incised ones, often assume, when the body begins to swell, an appearance which it is very difficult to distinguish from the effects of the inflammatory process.

§ 800. The amount of *hemorrhage* is generally a reliable test of the period at which the person was wounded, but is, of course, only applicable in wounds

(*h*) A. Stillé, Gen. Pathology, p. 426.
(*i*) Gericht. Med. i. 29.

involving a solution of continuity. In those made after death, even while the body is yet warm, the amount of blood poured out will, of necessity, be far less than while the active circulation of the blood is going on. This is especially true of wounds of certain parts which prove unavoidably fatal by copious and sudden hemorrhage, such as those of the heart, aorta, or any of the great bloodvessels. In fact, wounds involving the left side of the heart, or the arteries, would probably, if made after death, be attended with no hemorrhage whatever; whereas, in the division of any of the venous trunks, soon after death, the amount of blood lost would be far smaller than would have been poured out during life, and would depend, in a great measure, upon the position of the part injured. In a celebrated case of assassination, tried in Berlin, the head of the murdered person had been severed from the body, but, at the same time, other injuries of a fatal nature had been inflicted. Dr. Casper gave his opinion that the neck had been severed before life was extinct, for the reason, that a very large amount of blood was found to have been effused from the cervical vessels. The chief distinction, therefore, between hemorrhage before and after death, is, that in the latter case the amount lost is comparatively trifling and exclusively of a venous character.

§ 801. While the signs we have referred to are the principal means of discrimination in wounds, involving a loss of blood, there is another large class of wounds to which they do not have so extensive an application. Thus, although in *contused* wounds, the coagulation of the blood under the surface injured sometimes affords, especially in injuries of the head, an indication of the blow having been given during life, yet, on the other hand, the want of coagulation is no proof that it was not inflicted till after death. The blood may, from various causes, remain fluid after death. Its coagulability may be impaired by disease, or by the mode of death. If, for instance, the person murdered has been affected with scurvy, or his death caused partly by any mode of asphyxia, the fluidity of the blood under contused wounds, or indeed in any kind of wound, in such an individual, would not be inconsistent with the opinion that the wound was given while the person was alive.

§ 802. *Ecchymosis, or suggillation.*—The meaning of this term is an effusion of blood under the skin, but in general medical parlance the name is applied to the discoloration of the skin produced by this extravasated blood. In cases where it is necessary to discover whether the person was living at the time his injuries were received, it is customary to rely upon the presumptions afforded by the appearance of the ecchymoses. Their color varies according to the time elapsed since they were produced; at first they are purple, and pass through various shades to black, then through violet, green, and yellow, until their disappearance. In general, the discoloration appears within twelve hours after the injury, and sometimes, immediately after it, the violet color is seen on the third day, the green from the fifth to the sixth day, and the complete disappearance of the spot is, in healthy persons, from the tenth to the twelfth day. The changes are more rapid in the young than in the old, and depend also upon the force and extent of the blow.

If the extravasation be deeply seated, the external discoloration will not immediately occur, but may be delayed even for several days, and in parts

where the cellular tissue is abundant, will not always correspond to the spot on which the injury was received, but will be found over that to which the blood has gravitated. Indeed, the cutaneous discoloration may not appear until after death. Thus, in a person who died in thirty-five hours after having received a violent kick from a horse, rupturing the bladder, there was no ecchymosis in the seat of the blow until after death.(*j*) The amount of blood extravasated, except it lie immediately under the skin, cannot be determined by the degree of the external bruise, since, in many of those cases of violent death, in which a heavily loaded vehicle has passed over the body, or a great weight has fallen upon it, there has been, externally, no discoloration whatever, or in such a slight degree, that the vast amount of internal disorganization and hemorrhage could hardly be suspected. In the case already quoted from Casper, in which a wagoner was crushed to death, and upon opening the body the lungs and liver were found to be ruptured, and the heart completely torn from its attachments, the only external injuries discoverable were two trifling abrasions of the skin upon the temple and the arm.

§ 803. The marks observed in those cases where contusions have been purposely made upon the dead body, resemble, in some cases, those which are made during life. From experiments made by Dr. Christison, it appears that blows inflicted two hours after death will produce a discoloration of the skin, similar to what might be expected during life, except in regard to extent, which does not correspond with the severity of the blow. The experiments of Dr. Christison establish a strong presumption, that when contused wounds have been inflicted *immediately* after death, the external similarity will be still greater, and the correspondence between the amount of violence and the discoloration more exact. While this author was performing his experiments to ascertain whether blows given after death would produce similar appearances to those inflicted during life, he selected as a subject for a series of these experiments, the body of a female who had died in the infirmary. The body being afterwards carried to the dead-house, and there seen by some persons who were not aware of the experiments having been performed, was not allowed to be buried until an inquiry had been made into the circumstances, so persuaded were these persons that the woman must have died in consequence of barbarous treatment received during life.

In this connection, the following remarks of Casper are not without importance: (*k*) "Where death has been caused by violence, it is extremely common, especially where the bones lie immediately under the skin, to find suspicious spots upon the body. They are from one to three-quarters of an inch in diameter, usually rounded, red or reddish-brown, or dirty yellowish-brown, more or less hard to the touch, and tough under the knife, but exhibiting no real suggillation. These spots may perplex the examining physician, and, indeed, when the mode of death is unknown or attended with suspicious circumstances, demand the closest examination and description, because they may possibly indicate and throw light upon a struggle in which life was lost. In the majority of cases, however, these pseudo-suggillations are produced at the

(*j*) Taylor, Med. Jur. p. 177. (*k*) Op. cit. i. 127.

moment of death by the body grazing or falling against some hard substance, and consequently have no relation to the cause of death. They may even be produced after death by the rough handling or carrying of the body, and may be imitated, after the lapse even of several days, by friction with a coarse brush or cloth, and so as not to be distinguishable from similar injuries produced during life." "When," says Engel, "these excoriations are found upon parts of the body in which the blood cannot settle after death, the portion of dried integument acquires a yellowish-brown color, and is translucent at the edges; on the other hand, if they form in situations where the blood tends to accumulate, their color is a very dark-brown, and they cannot be distinguished from excoriations produced during life." Casper insists upon the practical importance of these distinctions, declaring that the cases are numberless in which ignorance of them or inattention to them has led to the most erroneous conclusions and mischievous consequences.

§ 804. The inference from the considerations here presented, is not that there is no distinction possible between ecchymosis produced before and after death, but that great caution is necessary in giving an opinion upon this point. The external bruise must be carefully compared with the effusion into and under the skin and adjacent tissues. If the latter be at all extensive, and especially if the blood be coagulated, we think there need be little hesitation in declaring that the injury must have been inflicted during life. Moreover, there are few cases of vital ecchymosis, without attendant swelling of the skin and other signs of vital reaction. If, while the body is fresh, the ecchymosed spot be found at all swelled, there can be no suspicion of post-mortem violence. Also, if the ecchymosis, though trifling in extent, be accompanied with excoriations or abrasions of the skin, as is often found in cases of strangulation with the hand, the fact of the violence having been done upon a living person will be manifest. The difficulty of discriminating between contusions made before and after death, will be much enhanced by the putrefactive process, the effect of which is to so alter the consistence and color of the skin and subjacent parts as to destroy all characteristic signs.

§ 805. 8th. *Ecchymoses from natural causes.*—It can hardly be necessary to caution the physician against the possibility of mistaking the ecchymoses observed in *certain diseases* for the effects of violence. The morbid states of the system in which they are seen, have so many other striking peculiarities during life and after death, that it would hardly be pardonable for a professional inquirer to overlook or misinterpret them. Thus in scurvy, purpura hemorrhagica, and petechial typhus, the shape, size, and diffusion of the spots in various parts of the body, the absence of swelling or other indications of violence, and the pathological changes in the mucous membrane of the mouth and the intestines, together with the fluidity of the blood, will afford more than sufficient reasons for rejecting all suspicion of violence.

The spots and blotches (suggillations) produced by *cadaveric changes* are more likely to give rise to mistakes. In persons unaccustomed to inspect the bodies of the dead, the stasis or congestion of the blood in the capillary vessels of the skin, which sooner or later invariably occurs, may lead to the suspicion of violence having been inflicted before death. This lividity is most

apparent and extensive in those who have died suddenly in full health, by some asphyxiating cause. It occurs in almost any part of the body, but is usually deeper and more distinct in those which are the most dependent. The time at which it is developed varies from the moment of dissolution up to the occurrence of rigidity, and is, of course, hastened or retarded by various causes, such as the mode of death, the season of the year, and the age of the subject. The blood is merely superficially diffused in the outer surface of the skin, and this mark alone ought to suffice to distinguish these discolorations from those produced by violence, since in the latter the blood is effused in the whole substance of the cutis and generally also in the subcutaneous cellular tissue, muscles, &c.

§ 806. The *forms* assumed by the marks of cadaveric lividity are various: sometimes the skin is mottled, at others large blotches spread over the surface, and at others again the lividity is more uniformly diffused, without necessarily appearing on a dependent part. The marks of the clothing which the deceased wore, if they have remained upon him until rigidity has taken place, give a very singular appearance to the skin. Those portions which have compressed the body tightly will be recognized by the paleness of the surface, while the intervening spaces may be deeply tinged. The folds of a sheet often thus communicate to the body an appearance of flagellation, the back being covered with stripes. These are called *vibices*, and are familiar to every one accustomed to the inspection of persons recently dead. This stage of cadaveric lividity which is due to the congestion of the capillary vessels, runs gradually into another at the approach of putrefaction. This stage is characterized by the uniform purple or dark red discoloration of all the depending portions of the body, and arises from a transudation of the serum and coloring matter of the decomposed blood. Hence, when an incision is made into parts thus affected, as, for instance, over the occiput, the skin and subjacent tissues will be found thickened and infiltrated with bloody serum. But neither of these stages of cadaveric lividity ought to mislead the physician; the diffusion, the superficial character of the infiltration, or, as in the latter case, the peculiar kind of effusion, the want of any external injury to correspond with the internal marks of apparently great violence, and many other considerations, which it is hardly necessary to specify, ought to render the distinction an easy one. We are disposed to think that the possibility of serious error arising from the distant resemblance between cadaveric lividity or the discoloration of the skin caused by certain diseases of the blood, has been in general over-estimated by writers upon legal medicine.

Blisters produced by heat, says Böcker, although when laid open they may disclose a red skin, do not present characters which enable us to determine whether they were raised before or after death. For intense heat produces the same immediate effects in either. Scalding liquids, however, do not blister the dead body, they only cause the epidermis to peel off in shreds. The skull, when subjected to the action of flame, cracks and exfoliates.

II. *Classification of Wounds.*

§ 807. Wounds are classified according to the nature of the means by which they were produced, as, for example, "an incised wound," "a lacerated wound." It will at once be seen that, in legal medicine, the name by which the injury is designated, thus indicating the means by which it was inflicted, may, unless much discrimination be used by the physician, lead to incorrect inferences. It becomes important, therefore, to establish the relation between the injury and its supposed cause. In other words, it being recognized that the wound was produced on a living person by mechanical violence, by what instrumentality was it effected? This is not always evident upon a first inspection. In order that a correct judgment may be had, the earlier the post-mortem examination is made the more likely will it be to yield useful and positive results, for the occurrence of putrefaction, maceration in water, and various disturbing causes may materially alter the aspect of wounds.

In some kinds of wounds the nature of the cause is far more apparent than in others; thus incised and punctured wounds convey the idea of the employment of cutting or pointed weapons, whereas the cause of a contused or lacerated wound is much less easily discovered. Hence the caution is necessary that the means by which the injury was inflicted should be described in general terms only, and especially should the physician avoid giving too positive an opinion as to the particular weapon or other means by which it was produced, since he will often find himself deceived in his opinion. By indicating upon insufficient grounds any particular weapon as the one by which the homicide was effected, the ends of justice may possibly be defeated, or an innocent person wrongfully suspected or accused.

§ 808. 1st. *Incised and punctured wounds.*—Such is the name given to wounds made by weapons with a sharp cutting edge or point. In the former the superficial extent of the wound is usually greater than its depth; in the latter, the reverse is the case. In both these kinds of wounds the edges are cleanly cut, the edges separated and not contused unless the cutting portion of the weapon have been dull or possessed considerable convexity. The regularity and evenness of the incision is, therefore, a mode of distinction between wounds inflicted with weapons, properly so called, and those made by glass, crockery, nails, &c. The shape of the wounds differs somewhat according to the region of the body and the tissues divided, as well as the state of tension or relaxation of the skin, and the direction in which the blow is given. Thus, when the weapon has penetrated in an oblique direction through the tissues, or when the latter are irregularly stretched, the shape of the wound will not correspond to that of the weapon; in such cases an incision is apt to assume a crescentic form, and if inflicted on a limb in a state of tension, its edges will be widely apart, and in the skin more so than in the subjacent parts. If a punctured wound have been made obliquely through the skin, it will present an oval or elliptical shape, and the orifice will usually be smaller than the diameter of the weapon producing it. A wound made in parts where the skin is thrown into wrinkles may present the appearance of several distinct wounds, as in the neck. From the experiments of M. Filhos, in 1833, it appears that

a conical and rounded weapon produces small elongated wounds, with two acute angles; but these trials having been made upon the dead subject, the results are not fairly applicable to wounds on the living, because the vital contractility of the skin will necessarily greatly modify the shape of the wound. Nevertheless, several punctured wounds, made by the same weapon, may differ in shape, and be either triangular or oval, according to the circumstances already indicated as influencing the shape of the wound. Superficial wounds, and especially incised wounds, may, it is well known, give rise to fatal hemorrhage, if they happen to reach a large superficial bloodvessel. In such cases, as Casper has remarked, it is extremely difficult, if not impossible, to determine where was the commencement and where the end of the incision, whether, *e. g.* it was made from left to right or in the opposite direction. And such points become of the greatest importance when we are called upon to determine whether a homicide or a suicide has been committed. Attendant circumstances, as whether blood is found upon the right or the left hand, or on which portion of the clothing a cut exists, will help to remove doubt.

It is often also very difficult, or quite impossible, to determine the precise vessel from which the fatal hemorrhage took place. Nor is it often necessary; for the existence of the wound on the one hand and of the hemorrhage on the other suffices to explain the result.

A punctured or penetrating wound may be single upon the skin, and yet two or more internal wounds have been made by the same weapon. This is effected by the weapon having been only partly withdrawn after the outer wound was given, and then plunged into the body in another direction, as is often the case in a close struggle. Thus, in a case related by M. Bayard, the deceased presented a single gaping wound in the breast, out of proportion to the weapon found at the spot where the murder was committed, but the left ventricle of the heart was perforated entirely through, and its walls were wounded in another part also.(*l*)

§ 809. 2d. *Lacerated and contused wounds.*—These being frequently due to accident, and seldom presenting any peculiarity by which the use of a weapon can be positively inferred, an opinion can rarely be given, merely from an inspection of the wound, of the cause by which the injury was produced. A medical witness may indeed be enabled to state the possibility of the wound having been made with a blunt instrument, similar to that which is perhaps shown at the inquest or trial, or found near the deceased, but can seldom, on the other hand, deny that it may have been of accidental origin, or caused by a fall. Blunt instruments produce their effects partly by pressure, and crush, tear, or only bruise the part struck, according to the force of the blow and the resistance which it meets. A smooth blunt weapon produces ecchymosis and swelling; angular instruments, in addition, give rise to punctures, fissures, and laceration. When an instrument is at once smooth, blunt, and heavy, it may cause internal injuries of which little or no trace is visible upon the surface. In general, all such wounds bleed but little, and tend to heal by suppuration.(*m*) When, however, they are situated upon the skull, they often bear

(*l*) Briand, Méd. Lég. p. 317.

(*m*) Böcker.

the aspect of incised wounds, the edges being apparently cleanly cut, and capable of being adjusted together. The division of the integuments is not, however, straight and regular as in an incised wound, and the angles of the wound are generally less acute. The contusion of the neighboring integuments, the extravasation of blood under portions of the skin, not embraced in the apparent incision, and often the existence of an irregular fracture of the bone, with internal extravasation, will not permit of more than a momentary mistake. But, practically, the chief difficulty in judging of the origin of lacerated and contused wounds, is that injuries of this kind may be received by a fall in a quarrel, or in the retreat of one of the parties, and similar in appearance to those which might have been produced by a direct blow. In such cases, the position of the wound compared with the known relative position of the parties at the time of the receipt of the injury, will be the chief source from which information will be derived.

An effect, and by no means an unusual one, of blows inflicted with blunt weapons, is the rupture of internal organs. Sound organs, says Casper, never rupture spontaneously, and only when subjected to extreme violence. Fissures of the base of the skull, rupture of the liver, lungs, kidneys, &c., are sure evidences of such an agency. The first of these always occur transversely, never longitudinally, and generally are within the anterior third of the skull. Rupture of the brain is extremely rare, and so is that of the trachea and œsophagus, that of the lungs is not common, and laceration of the pericardium or heart is even less so. Rupture of the liver, on the other hand, is both positively and relatively frequent. The direction of the fissures is usually transverse. A case is mentioned by Casper in which the anterior edge was entirely separated from the body of the organ. Rupture of the spleen, and of the gravid uterus also, takes place transversely; this injury of the remaining abdominal organs is extremely rare.

Casper appears to question the occurrence of rupture of the bladder, and states that he never met with an instance of this injury. It is not, however, extremely rare.(*n*)

§ 810. In some cases it may not be unimportant to consider whether the wound may not have had a *spontaneous or accidental* origin. A number of criminal trials have taken place in Scotland in consequence of women, for the most part pregnant, having died of hemorrhage from the pudendum. In most, or all of these cases, it has been averred that the wound was inflicted with criminal intent by the husband or others. A case occurred at Dundee, in which there were no grounds for suspicion that the woman had received a wound. She lived on good terms with her husband and neighbors. She had been straining at the night-stool when the hemorrhage came on. A large quantity of blood was found about her person; it had flowed from the genital organs, but not from the uterus, which was fully expanded in pregnancy. On examining the vagina, Dr. Kyle found a recent aperture in one labium, which he traced into a large vein; one of a plexus which extends some distance into the vagina. A case is related by Dr. Thomson,

(*n*) Vide § 863.

in which the woman, however, recovered after losing a large quantity of blood. In this instance, the woman's husband, a cattle drover, had been long absent from home, and on his return, remained alone with his wife about half an hour. The bleeding commenced immediately after this visit. A wound was discovered large enough to admit the finger to the depth of about half an inch, in the anterior wall of the vagina, at the union of its upper with its middle third. It was probably an accidental laceration, but if death had actually resulted, the existence of the wound might have given rise to suspicions of criminal violence.(*a*) Dr. Menzies relates that a woman three weeks after delivery, on rising from bed, accidentally fell on the top rail of a common stuff-bottomed chair. Profuse hemorrhage ensued, which, on examination, was found to proceed from a wound in the vagina nearly half an inch in length, and which looked exactly as if it had been inflicted with a sharp instrument.(*aa*) In another case reported by Dr. Ellis, and also of a pregnant woman, death by hemorrhage resulted from a lacerated wound of the vagina supposed to have been inflicted by her falling on the post of a crib.(*b*) In a third case, related by Dr. Morland, a woman five months advanced in pregnancy fell upon the roof of a wood-shed, by slipping upon one of the steps by which the roof was ascended. The hemorrhage was very profuse, and but for timely assistance, would probably have been fatal. The wound was an inch and a half long, by half an inch deep, upon the internal surface of the left nympha.(*c*) In these cases there was nothing in the character of the wound to distinguish it from those in which the absence of contusion has been supposed to indicate a homicidal origin. They also appear to show the peculiar danger from hemorrhage to which wounds of the genitals expose pregnant women. Dangerous hemorrhage may also occur from varicose veins in the leg. The orifice from which the blood escapes being very small, and situated immediately over the enlarged vein, can hardly be mistaken for an intentional wound. Casper relates a case in which a woman, raising a broken chamber vessel under her clothes, for the purpose of urinating, wounded herself therewith in the vena saphena. The wound was one inch and three-quarters long and three-quarters of an inch wide, and the vein was opened to the size of a pea.(*g*)

§ 811. 3d. *Gunshot wounds.*—Gunshot wounds present striking differences in their appearance, according to the distance at which the piece was fired, and the number and character of the projectiles. If exploded in immediate contact with the body, the wound is large and circular, the skin denuded, blackened, and burned, and the point at which the ball entered is livid and depressed. The blackened and burned appearance of the skin is due to the imperfect combustion of the grains of powder, and the point of entrance of the ball is larger than that of its exit. The hair, clothes, or other organic substance in the line of the shot, exhibit traces of burning. When, however, the weapon is fired at a greater distance, the appearance due to the imperfectly burned powder and the flame are no longer seen, the ball itself being then the

(*a*) Am. Journ. Med. Sci. April, 1850, p. 535, from Edinb. Monthly Journ. Feb.
(*aa*) Edinb. Med. Journ. iv. 624.
(*b*) Boston Med. and Surg. Journ. Sept. 1857, p. 158.
(*c*) Ibid. Jan. 1859, p. 520. (*g*) Ger. Leichenöff, 2 Hundert. Fall. 43.

only cause of the wound. In the celebrated case of Peytel, tried in 1839, for the murder of his wife, it was found that she had been killed by two balls which entered near the nose. The eyebrows, lashes, and lids were completely burned, and a large number of grains of powder had imbedded themselves in the cheek. Experiments being made in order to determine the distance required to produce these effects, it was found that the weapon must have been held within a foot's distance. As already stated, the point of entrance is here smaller than that of exit. M. Matthysens has shown this by experiments upon the dead body. A pistol fired at twelve paces distance, with a ball fifteen millimetres(*gg*) in diameter, made a wound in the breast of 8.5 millimetres in diameter; and at its point of exit on the back, one of ten millimetres. In two experiments, at the same distance, upon the forearm, the entrance wound was four millimetres less in diameter than that of exit; and when a larger ball, with a diameter of seventeen millimetres, was used, the same relations were preserved, both in the entrance wound being less in size than the ball with which it was made, and also three millimetres less in diameter than the wound of exit.(*h*) Dr. Taylor, speaking of the present class of cases, in which the weapon is fired from a certain distance, says that the orifice of exit is generally three or four times as large as the entrance aperture, which, it will be observed, is a much greater difference than is stated by M. Matthysens. But, strange as it may appear, in regard to a question apparently so simple, the very opposite statement is made by some writers. Of these may be mentioned Ollivier (d'Angers), cited by M. Malle,(*hh*) who himself, after numerous experiments, concludes that in gunshot wounds the orifice of entrance, far from being constantly smaller than the orifice of exit, is, on the contrary, usually larger; and also Casper, who goes further, and declares that the former is *always* larger, adding that "all the more recent original observers very properly unite in this conclusion, which is the opposite of that which was formerly maintained."(*i*)

According to M. Nélaton, when the wound is recent, the orifice which the ball has made on entering the body is depressed and contused, while that made by its exit is lacerated and prominent. In the former there is an actual loss of substance; in the latter merely a solution of continuity, and its edges, if brought together, would almost completely close the wound. Still, the irregularity of its flaps renders it the larger, notwithstanding the loss of substance in the entrance wound. After some days the case, however, is different. The contused margins of the wound of entrance slough away, while those of the other become partly united, and its size is thus diminished, while that of the former is enlarged.(*ii*)

§ 812. It is important, however, to observe that the relative size of the wounds depends not only upon the distance at which the weapon is held, but also upon other causes affecting the velocity of the ball. Thus the quality and amount of powder, the length and calibre of the weapon, the compression

(*gg*) A *millimètre* is equal to 0.03937 inch.
(*h*) Quest. méd. lég. sur les plaies par les armes à feu, Gaz. des Hopitaux, No. 145.
(*hh*) Ann. d'Hygiène, xxiii. 462. (*i*) Op. cit. i. 291.
(*ii*) Observations on Gunshot Wounds, made in Paris during the Summer of 1848, by Edw. Waters, M. D., Month. Jour. Sept. 1848.

of the wadding, and the form of the projectile, all require attention. Hence the relative size of the wounds of entrance and exit varies continually; and unless the velocity of the ball can be approximately ascertained, from a knowledge of the weapon used and its proximity to the wounded person, it would be unsafe to draw a positive conclusion from this circumstance alone as to the position of the body and the direction of the line of shot, both of which are points occasionally of extreme importance. More reliance is to be placed upon the depressed and clean character of the entrance wound, and the bulging and lacerated aspect of that of exit. This fact has been substantiated by the experiments of M. Dévergie. When, however, the ball enters a portion of the body well covered with fat, this often protrudes between the edges of the wound, and will entirely mask its character.

If the ball have traversed the clothing before attaining the body, it carries a portion of this with it; and should it have lost much of its force before reaching the body, the clothing is merely pushed before it into the wound, and upon pulling this out, the ball will often come with it. The hole made by a bullet in the clothing is smaller than it is itself, owing to the elasticity of the material, and also is depressed like that in the skin. The wound is usually circular in shape, but is oval if the ball have entered the body obliquely. If caused by a rifle-ball, it is said that a large and ragged hole is made, which is attributed to the spiral groove of the barrel, and the tightness with which this kind of ball fits the bore of the weapon. The wound made by the Prussian needle gun, which carries a conical ball, differs from that made by an ordinary bullet.(*j*) It is quite insignificant in appearance, small, scarcely marked by suggillations, presents a slight contusion of the surrounding soft parts, is not always circular, and not unfrequently triangular, and in these slight marks gives but little indication of the complete disorganization which exists within. The orifice of exit is in all respects like that of entrance. In a case communicated by Mr. Tufnell to the Surgical Society of Ireland (March 11th, 1854), it was shown that the form of the wound made by the conical bullet of the Minié rifle was "a small semilunar split in the integument," about a quarter of an inch in length. There was no contusion nor inversion of the edges of the wound.

§ 813. It is evident that one ball may produce several wounds upon the body; either, for example, by traversing a limb, and then entering the trunk or head, or, as has been witnessed in some instances, by the splitting of the bullet upon a projecting ridge of bone. At the same time, it should be remembered that the piece may have been charged with more than one bullet, and this circumstance may give rise to some perplexity, since, upon examination of the body, only one may be found, the other either having passed out of the body, or been overlooked in the examination. Casper lays great stress upon the difficulty of finding balls in the body, even when there appears to be a certainty that they could not have traversed it, no aperture of exit being found.(*k*)

A ball, after entering the skin, is deflected from its straight course by very

(*j*) Casper, Ger. Med. i. 293. (*k*) Ger. Leichenöff. 2tes Hundert.

slight causes. Many examples of this fact are given by all authors on military surgery. The following is a singular illustration of it: In a duel with pistols between two students at Strasburg, one fell, apparently mortally wounded in the neck, but almost immediately got up, without feeling any inconvenience from his wound. It was found that the bullet had struck the larynx obliquely, and, glancing from the cartilage, had gone completely around the neck, and stopped on the opposide side of the larynx from where it had entered. It was taken out by making simply an incision over it. Other examples might be cited in which balls have made a circuit around the cavities of the body without entering them. In a wound of the head, thorax, or abdomen, the ball may make a half circuit of the body, and lodge or emerge at a point opposite that at which it entered, thus leading one to suppose that it must have passed directly through. In the battle of Suddozam, a soldier was struck by a bullet just above the right haunch bone. The ball passed around the trunk, entered the abdominal parietes on the *left* side, then passed downward throngh the sciatic notch, and "at length contented itself with remaining in the left nates."(*l*)

§ 814. *Wounds from small shot.*—These are too characteristic to be mistaken for any other injury. It is chiefly important to understand the character of the wound as affected by the *distance* at which the piece was fired. When this has happened sufficiently near to the person for the charge to enter the body in one mass before separating, the wound is of considerable extent and gravity. Its edges are ragged, contused, and blackened; and as the shot diverge after entering the body, great laceration and injury of the parts underneath take place. Dr. Lachèse, of Antwerp, found, upon experiment, that for the opening to be single, the distance should not exceed ten or twelve inches. At distances greater than this, the wound will no longer be perfectly regular, but more or less lacerated; and when the distance is so great that no central wound is made, each grain will make a distinct though trifling wound. Nevertheless, a single grain of shot may occasionally produce death. Thus, in a case related by Ollivier d'Angers, a thief, scaling a wall, received, at the distance of fifteen paces, a charge of shot from a fowling-piece. He fell dead immediately. The charge had struck him in the breast, scattering over an extent of three to four inches, but one grain had penetrated the aorta over the attachment of sigmoid valves, and another had traversed the anterior wall of this vessel. The wounds had the form of linear incisions, two lines in extent, and such as would be made by a fine double-edged and pointed instrument. If the shot have had to penetrate the clothing, especially if this be loose and thick, before entering the body, the usual character of a near wound from this cause will be modified; the shot is spread out of its course by this obstacle to a certain degree, and does not enter the skin in a mass, causing a round tolerably regular opening, but being somewhat scattered, will either produce a large, lacerated wound or a number of small wounds, according to the position in which the weapon is held.

§ 815. 4th. *Wounds from wadding and gunpowder.*—According to some

(*l*) Cole's Military Surgery.

experiments made by Dr. Swift, it was found that a *pistol* loaded with powder and wadding alone, at twelve inches distance, tore the clothes and abraded the skin, without penetrating it; at half this distance, the wadding penetrated to the depth of half an inch; at two inches, a ragged and blackened wound was made, and the wadding was imbedded at the depth of two inches; at one inch and a half from the chest, the wadding passed between the ribs into the thorax, and in a second experiment, carried away a portion of the rib.(*m*) M. Lachèse found in his experiments that the distance at which the wadding of a gun would enter the body in one mass, did not exceed six inches from the muzzle, but that even at this distance it only occurred when a double charge of fine powder was used, and with an army cartridge.(*n*) Hence it is probable that an ordinary wadding, such as loosely wrapped paper, rag, or similar material, used in a fowling-piece, or in a musket by those not accustomed to the military use of the weapon, would not produce a rounded opening which would resemble that made by a bullet. Even if held at a less distance than six inches from the body, it is doubtful whether such a wound could be produced. Yet, although the opening may not be mistaken for that made by a bullet, it is certain that dangerous and fatal wounds are often made with wadding at short distances, by its penetrating the body and lacerating some important bloodvessel.

A curious and interesting case, which led to experiments confirmatory of the above, occurred in Paris in 1858. In the circus a cannon was fired in the direction of the boxes, at a distance of about 150 feet. The cannon was about four feet long, four inches in calibre, and loaded with three ounces of powder, retained by a wad made of old theatre bills torn from the street walls, loosely rolled together and rammed home with moderate force. On one occasion a man was seated in a box opposite the muzzle of the gun, and at the distance already mentioned; he was leaning forward, with his arms crossed upon the handle of his umbrella, and, as the explosion took place, he fell violently backward, and was afterwards found to have his arm broken above the elbow. Several portions of wadding were found upon the ground underneath the place where the man had sat; but no marks existed upon his clothing, and none upon the anterior part of the arm, which, indeed, must have been inaccessible to any projectile that did not first strike the forearm. It was concluded that the fracture had been caused by the sudden and violent starting of the man backwards, which must have brought his arm against the hard edge of a partition; and various experiments tried with the cannon proved that any wadding which could be made of paper was dispersed in pieces, or lost all power of mischief, at a much less distance than one hundred and twenty feet.(*nn*)

Gunpowder alone is capable of producing wounds which may prove fatal. When a pistol or gun charged with gunpowder alone is fired at an uncovered portion of the body at a distance of a few inches, a blackened, burned, and slightly lacerated wound will be produced, or if the grains of powder be large, the skin may present the appearance of having been struck with small shot.

(*m*) Phil. Med. Exam., March, 1846.
(*n*) Orfila, Méd. Lég., 4me edition, 2, p 464.
(*nn*) Annales d'Hyg., Avril, 1859, p. 420.

The burnt appearance of the skin, the singeing of the hair in the neighborhood, or the burning of a portion of the clothing, will all indicate that the charge has been fired close to the body.

III. *Homicidal, Suicidal, and Accidental Wounds.*

§ 816. The mode of obtaining a satisfactory solution of the question, whether a wound found upon a dead body was of accidental, suicidal, or homicidal origin, is by an examination of the wound itself, and of the circumstances under which it was produced. Under the first head, the considerations are purely of a medical nature; under the second they are so to a limited extent only, and will, therefore, be more appropriately examined in connection with the legal remarks upon homicide. We shall allude to them, therefore, in this place only in a cursory manner.

1st. *Situation of the wound.—Suicidal* wounds are inflicted upon those parts of the body most accessible to the hand, such as the head, neck, and anterior part of the trunk. They are usually either made by fire-arms, or by cutting instruments. If by the former, the wound will most frequently be found in the head, or over the heart;(*o*) and if by the latter, the throat is usually selected. If, therefore, a wound is found in some part of the body which it was manifestly impossible for the suicide to reach, this circumstance, in connection with the direction of the wound, will make the intervention of another or the occurrence of accident evident. Yet, as in the greater number of cases, wounds exist upon the front of the body, or at least in such situations that they could have been self-inflicted, the locality of the wound alone affords merely a presumption at most of its mode of origin. Moreover, it must be remembered, that all suicidal wounds are not inflicted always by means of the hand, but sometimes by violently striking the body against some solid substance, by precipitation from a height, and by various other means, especially in persons of deranged intellect, who not unfrequently contrive to mortally wound themselves in such a manner as would hardly be thought of by another.

Orfila relates a case, in which an insane person killed himself with a pistol-shot, fired behind the right mastoid process; the ball was found in the cerebellum.

A woman in this city endeavored to destroy herself by placing her head upon a block and dealing upon the back part of it numerous severe blows with a hatchet. A similar instance is reported by Mr. Tarleton, in which an insane gentleman was found lying insensible in his kitchen with the cleaver by his side. Upwards of thirty wounds were found over the occipital bone; they were horizontal, many of them superficial, but one, however, had removed a portion of the skull from the middle of the lambdoidal suture, so that the brain had escaped. This person, who survived his injuries four days, admitted

(*o*) M. Brierre de Boismont states that in 297 out of 368 cases of suicide by fire-arms, the head was the part injured, and that in 71 only were the chest or the abdomen attacked. In 234 of the first group of cases the weapon was fired into the mouth. Du Suicide, p. 531.

that he had inflicted them himself.(*oo*) Suspicion of criminal violence would very naturally be entertained in such cases as these, provided the body was accidentally discovered in a deserted place.

§ 817. 2d. *Direction.*—The *direction* of the wound will more frequently serve to distinguish a homicidal from an accidental wound than from one which has been self-inflicted. Thus, on the trial of Mrs. Mackin, in Edinburgh, in 1823, for murder, it was stated in the evidence that the deceased died from a stab. The prisoner alleged in her defence that she merely held the knife in her hand sloping upwards, to deter the deceased from attacking her; but that he, being drunk, stumbled forwards upon it. This statement was disproved by the medical testimony, which showed that the *direction* of the stab was backwards, and very much downwards in the lungs, having penetrated the chest over the cartilage of the second rib.(*p*) A similar instance is given by Elvert, in which the downward direction of the wound, and its having been made in the manner of the German butchers, viz., a second internal wound after a partial withdrawal of the instrument, not only disproved the accidental origin of the wound, but indicated also the occupation of the murderer.(*q*) In England, a few years since, a murder was fixed upon a man, from the fact that the wound in the neck of the deceased had been evidently made by a knife cutting from within outwards, as is done in slaughtering sheep.

The direction of suicidal wounds is subject to too much variety to be relied upon as a criterion, for although in many cases we may obtain from it a presumption that the wound was voluntary, yet it is evident that a wound inflicted by a murderer may assume any direction which could possibly be given to a suicidal wound. Besides, the deceased may have been left-handed, or ambidexter, a consideration of some importance in this relation. In short, but little information of value can be obtained from the direction of a wound, unless the circumstances under which it was received are known; hence its chief importance is in corroboration of other evidence.

In any case in which a person is found lying dead or dying from wounds or other bodily injuries, an accurate inspection of the locality, and of the position of the body in respect of surrounding objects is of the highest importance, and should be minutely noted before the body is removed.

§ 818. That part of the *circumstantial evidence* which requires medical knowledge for its elucidation, is often most curious and important, and as it has to deal with conditions incessantly varying, and is founded upon no familiar principles, nor any positive scientific basis, but rather upon loose and badly observed facts, must partake of the same nature, and often appear discordant and improbable. Each medical witness may put together in a different manner the materials with which he is required to reconstruct the scene immediately preceding death; and a successful result will most naturally reward him, who with the most acute perception unites the largest and most familiar acquaintance with similar facts. In estimating the probabilities in reference

(*oo*) Taylor, Med. Jur. p. 191.
(*p*) Christison, Month. Jour. Nov. 1851, p. 401. (*q*) Kopp's Jahrb. i. p. 143.

to the manner of death, the physician has need of all the aid which a general observation of the workings of the human mind can afford him, his psychological knowledge and his medical experience must here go hand in hand, for it is his task and duty to offer an explanation of the mutual dependence of motives and results, and that, in the same disinterested and merely scientific manner, that would be required in the demonstration of any curious fact in physics.

That portion of the indicatory evidence upon which medical testimony may possibly throw some light, we may now cursorily allude to.

§ 819. 3d. *Position of body and of weapon.*—The *position of the body and that of the weapon* (if the latter be found) sometimes throw light upon the mode of death.

These two circumstances serve also generally to explain each other; separately considered they are not of so much importance. In cases of suicide the weapon may be found grasped in the hand or not, according to the manner of death. Thus, if death ensue upon sudden and abundant hemorrhage, as in wounds of the throat, stabs in the heart or great vessels, the person dies by syncope, and hence the hand being relaxed the weapon falls from it. When, however, death is occasioned by a pistol-shot through the head, the weapon will, in most cases of suicide by this means, be found firmly grasped in the hand. In other cases where death has not been immediate, it is purely a matter of accident whether the weapon be still held by the deceased or not. In like manner, the position of the body will be affected by the suddenness and mode of death. Where death is sudden the body will usually be found lying upon the back, but if it have not been immediate, the face and trunk will generally be turned to the ground. The position of the body alone cannot be considered as indicative of the voluntary, accidental, or homicidal character of the injury, but if it be found in a position indicating immediate death from hemorrhage or from the instantaneous loss of muscular power, and the weapon be found at a distance from it, the act may be considered in all probability as homicidal. Where, on the contrary, it is found in this position and the weapon by which death apparently was caused lies close to the body, it is impossible, of course, to determine whether it has been placed there by another after assassination or has fallen from the hands of a suicide. Should the weapon be found firmly grasped in the hand of the deceased, there can be little doubt that the act was suicidal. The only objection which can be made to the supposition is, that it might have been placed in the hands of the person before life was extinct, and instinctively grasped by him. No case, however, is yet reported which would show that this has been done. Where after death by assassination a weapon is placed in the hand of the victim, it cannot be forcibly grasped, but will lie there loosely. Sometimes the fact of the razor being shut (when this has been the weapon used) has been considered as indicative of homicidal interference; but such an inference is not justifiable unless it can be shown from the position of the body and the character of the wounds, that death must have been instantaneous, and even here the question might naturally arise whether the fall of the razor to the ground might not sufficiently account for its being closed. Thus, for example, in a case of suicide related

by Dr. Casper, the man, after having first inflicted with a razor some superficial wounds at the bend of both elbows, stood before a mirror and drawing down his cravat, cut his throat in an oblique direction from left to right, dividing the larynx and both external jugular veins. The razor was found bloody and *closed*, two feet distant from the body.(*r*) The same author reports another case of suicide by a pistol-shot in the breast, traversing the diaphragm and spleen, and subsequent drowning. In this case the pistol was found in the pocket of the deceased, and the fact of its having been fired against the naked chest was shown by the circumstance that his coat and shirt were not perforated, and the former was buttoned up to the chin.

The following case illustrates the nature of the difficulties which sometimes environ the questions treated of in this chapter. At Paris, in 1858, an auctioneer and appraiser, thirty-one years of age, arrived at the Lyons railroad station, about six o'clock in the morning, and having engaged a coupé and placed his luggage upon it, entered the vehicle, carrying a double-barrelled fowling-piece in his hand. At some previous period he had been twice convicted of official misconduct, and his present position was not a prosperous one. But there was nothing to indicate his being humiliated or desperate; on the contrary, his habitual behavior was gay and even frivolous. On the way to its destination an explosion was heard in the carriage; it was stopped, and the body of the occupant was found seated in the left-hand corner, the legs crossed, and in the posture of a person seeking repose. The greater portion of the left side of the skull from the centre of the forehead was carried away; the legs were crossed, and between them lay a cane, and a double-barrelled gun, the left barrel of which was still loaded and cocked. The thumb and index finger of the left hand were bloody, and the fingers clenched. Within the skull were found numerous grains of shot. The deceased had, several months before, insured his life for about $30,000, which sum the insurance company refused to pay to his family, on the ground that his death was suicidal. Hence a lawsuit, in which the facts of the case were investigated. It was evident that at the moment of the explosion the forehead must have been upon or very near the muzzle of the gun, which was also grasped by the left hand. From these facts, M. Tardieu concludes that the death was suicidal,(*s*) and M. Brierre de Boismont draws the same inference, chiefly from the fact that there was *no* evidence of a previous inclination to this crime!(*t*) The court, however, condemned the insurance company to pay the amount of its policy. To us it seems perfectly natural that a sportsman, weary with a night's ride in a railroad car, should, when seated in a hackney-coach, have leaned his head upon the muzzle of his gun, embracing but not covering the end of the barrel with his hand, and that a jolt of the vehicle should have caused the trigger to catch in his pantaloons and explode the charge. Too many accidents of a similar nature have occurred, displaying an almost inconceivable negligence of the simplest precautions in handling firearms, for us not to adopt this conclusion in the present case as not only the most charitable, but also the most logical.

(*r*) Gericht. Leichenöff. 1 tes Hund. p. 17.
(*s*) Ann. d'Hyg. Avril, 1860, p. 443.
(*t*) Ibid. Juill. 1859, p. 138.

The inference to be drawn relative to the suicidal or involuntary cause of death, from the various other circumstances under which the body is found, do not belong to the physician, and require in general no medical knowledge for their explanation. This portion of the indicatory evidence is treated of in the legal part of this subject.

IV. *Blood Stains.*

§ 820. 1st. *General appearance.*—The color of stains of blood is dependent upon their age and the material upon which they are found. Those of a recent origin are of a deep red color, which ultimately becomes brown. The period required to effect this change is not determined; it occurs, however, most rapidly in warm weather. The recent stains of menstrual blood are also of a brown color. The depth of the color depends also upon the porosity of the substance. Thus marks of blood upon white stuffs and upon light wood are paler and duller than those on articles of greater density, as varnished wood, iron, and stone. Where it has coagulated, this will usually be shown by one portion of the spot being thicker and darker than the other.

On colored stuffs, especially on those which are brown, blue, or black, the spot is more easily recognized by candle-light than by day. This important fact was discovered by Ollivier d'Angers. He had been directed to re-examine the room of a person accused of murder; having already visited it in the day time, his second examination was conducted at night, and he now discovered by holding a lighted candle near to the paper hangings, which were of a pale blue color, a number of drops of an obscure dirty red, which by day had the aspect of small black specks, and were lost in the general pattern of the paper. On a further examination, other spots of the same kind were found on the furniture. On the chimney jamb, which was painted blue, there was a large stain of blood, which appeared red by the light of the candle. The next day by day-light Barruel and Lesueur could not find these spots, and were obliged to make use of artificial light to discover them.(*u*) The same remarks will of course apply to spots of blood upon dark woollen cloth, in which they can also be detected by the stiffening of the material. If the stain be upon a weapon, such as the steel blade of a knife or poniard, the color will be of a pale red where the layer is thin, and of a dark brown color where it is of greater thickness.

§ 821. 2d. *Chemical examination of suspected stains.*—If the stain be upon linen or other similar stuff, it should be cut out and suspended by a thread in a small test-tube containing an amount of distilled water sufficient fully to dissolve the stain; the coloring matter of the blood soon begins to detach itself and seek the bottom of the vessel, the supernatant liquid remaining tolerably clear. The coloring matter will be dissolved in the course of a few hours; the fibrin, if any were contained in the spot, remaining attached to the stuff as a soft grayish or rosy white substance. The colored liquid in the test-tube may now be subjected to various tests; but one or two very simple

(*u*) Briand, Méd. Légale, p. 782.

ones are all that is necessary to establish the certainty of the presence of blood. Supposing the liquid to hold in solution the coloring matter of the blood and albumen, the effect of heat carried gradually to the boiling point is to coagulate it and destroy its color. According to the amount of albumen, will be the degree of coagulation, if the liquid contain merely a trace of it, boiling merely renders it opalescent. But the alteration of color is peculiar to blood. It changes from its more or less red color to a grayish green without a trace of red, the upper portion of the liquid acquiring also an indistinct yellow tinge. The grayish coagulated portion may be redissolved with potassa, and acquires thereby a brownish-red color by refracted, and green by reflected light. Another important test for blood is the absence of any change of color by the addition of ammonia, except when very concentrated or added in large quantity.(*v*)

§ 822. These tests will suffice to distinguish the colored serum of the blood from any stains resembling it. Thus the red soluble dyes or stains from the juices of fruits are not coagulated by heat, nor do they lose their color on exposure to it, but the red color is changed either to a crimson or to a green, sometimes passing through a violet shade by the addition of ammonia. M. Raspail's statement, that a stain possessing similar chemical characters with that of blood, could be formed by exposing to heat a mixture of madder and white of egg, has been corrected by Orfila,(*w*) who, in fact, denies its accuracy. He found that a solution of this artificial stain although coagulated by heat preserved its orange-red color, and the coagulum was of a pale red. In its further reactions, also, it was quite dissimilar to blood. Dr. Taylor says, "having for some years performed numerous experiments on this subject, by making artificial mixtures of human serum or animal albumen, with the red coloring matters of cochineal, lac, and madder, and neutralizing the effects of the alkali contained in the serum by the addition of a small quantity of acetic acid, I feel justified in stating that in no respect whatever, except in regard to color, can such mixtures be confounded with blood. The objection is, therefore, more theoretical than practical. These red liquids may easily deceive those who trust to a *red color* alone; and herein we see the necessity for placing the investigation of such subjects in the hands of professional persons only."

§ 823. Other tests have been proposed, but none of them are as distinctive

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(*v*) Rose's method is thus given by Casper (op. cit. i. 160): The dried blood is thoroughly treated with cold distilled water, which is from time to time poured off from the undissolved fibrin until all the coloring matter is removed. The residual fibrin can then be examined with the microscope. If the coloring matter in solution is now treated with chlorine water in excess, it becomes decolorized, and white flakes separate and float upon the liquid. Three parts of nitric acid to one part of the solution give a grayish-white precipitate, and four parts of tincture of galls to one of the solution give a pale violet precipitate. If a portion of the solution is boiled it is coagulated in a greater or less degree. The clot is of a dirty red color, dissolves readily in a heated caustic solution of potassa, to which it gives a greenish tint by transmitted light, and, as before stated, appears brownish red by refracted light. When a very small quantity, as a single spot of blood, is examined, all of these reactions cannot be observed. In this case it is advised to boil the solution and treat it with caustic potassa, afterwards adding an excess of chlorine water or of nitric acid.

(*w*) Méd Lég. ii. 618.

and reliable as those mentioned. Thus nitric acid coagulates the albumen and changes the color to a gray or dirty brown, according to the amount of hematin; the tincture of galls occasions a precipitate without altering the color, and hypochlorous acid changes it to a greenish-brown color.

§ 824. When the spot of blood is upon a hard substance, it may, in most cases, be removed by careful scraping. If upon the point of a weapon, it may be macerated for a short time in a narrow vessel containing water, but if on any other part, if not easily removable by scraping, as when the blood has dried in a film or in streaks, the stained part should be laid upon a clean plate of glass, after having been previously moistened with distilled water. The two surfaces should be in immediate contact with each other, but care should be used that the metal be not left too long exposed to the action of the water. Blood stains upon iron and steel may sometimes be mistaken for *rust* or salts of the oxide of iron made by some of the *organic acids*. In the case of rust the color is different, being more or less yellow, but occasionally this distinction is not sufficiently evident. If, however, the spot be detached and placed in distilled water it does not dissolve, although part of it may remain suspended in the water. By filtration, however, the rust is entirely separated, the filtered liquid remaining colorless. The residue upon the filter will give the proper reactions with the ferrocyanide of potassium or the alkalies, after having been first digested with dilute hydrochloric acid. If, however, the stain be due to lemon-juice or other organic acid, it will be observed in the first instance that the color is darker than that of blood, being often nearly black; it is also very soluble, and although slightly coagulable the solution yields at once to the tests for iron, giving an intense blue color with the ferrocyanide, and a deep red with the sulphocyanide of potassium.(*x*)

§ 825. There is a number of insoluble stains which present a certain similarity to those of blood. Such are, madder and logwood dyes, iron moulds and red paint. The insolubility of these stains ought to be a sufficient indication of their being due to some other cause than the presence of blood. The coloring principle in madder is, however, rendered yellow by acids and violet by alkalies, a change which of course will not be produced in a spot of blood.

§ 826. Still, the spot may be *soluble*, and yet not be due to blood. In some

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(*x*) Dr. Carl Schmidt, Diagnostik der verdächtigen Flecke in criminal Fällen. Leipzig. 1849.

The detection of blood-stains upon iron is difficult, but important. Vauquelin was the first to remark that iron rust upon domestic utensils and instruments contains ammonia, hence, if on being heated it yields ammonia, this is no proof of the presence of blood. If this experiment is performed with a gentle heat upon iron rust in a glass tube, and if after the ammonia is driven off, the heat is increased, a peculiar odor, such as always attends the carbonization of albuminous substances, is exhaled, and a brown, offensive, empyreumatic oil is deposited on the less heated portions of the tube. Still stronger evidence is afforded by the following test: Melt a small quantity of the slightly heated rust with an equal volume of potassium or sodium in a very small glass tube closed at one end; when cool, mix with water, filter, and decompose the liquid with a very small quantity of a solution which contains both the protoxide and the peroxide of iron, and saturate the whole with an excess of hydrochloric acid. If blood be present, a greater or less quantity of Prussian blue will be developed, but if the ferruginous solution is in too great quantity, the color will be green. (Casper, loc. cit.)

cases stains, somewhat similar to blood-stains, are made by the juices of fruits, or by soluble coloring matters. Dr. Albert found on the clothes of a young man accused of attempted assassination, a large number of red spots which had the appearance of blood. On examination, however, he found that a portion of them only were caused by blood, and the rest by red chalk, the prisoner's trade being that of a wall-colorer. All the stains were soluble, but those which were really due to blood were distinguished from the others by their more shining appearance, the appearance of fibrin in the solution, which sank to the bottom, the want of change upon the addition of caustic ammonia, and their appropriate reaction with nitric acid and with tincture of galls. The spots made by the red chalk disappeared in a fine powder on being rubbed, communicated their color uniformly to the water, and the solution was changed to a violet-brown color by caustic ammonia, dark brown by nitric acid, and remained unchanged upon the addition of tincture of galls.(*y*)

§ 827. If the suspected stain on the clothing be caused by *iron rust*, it will be readily dissolved out by hydrochloric acid, and then may be subjected to the appropriate tests. Dévergie reports an instance in which iron mould awakened considerable suspicion of violent means having been used. The body of a young man, bearing the marks of many injuries upon it, was taken out of the Seine, where it was supposed to have lain for three weeks. Red stains were found on the shirt, which were supposed to be of blood, but, upon examination, they were satisfactorily proved to have been due to the rusting of a steel guard-chain and a bunch of keys on the person of the deceased. Dr. Taylor gives an instance in which spots of *red paint* upon the dress of an individual, were the occasion of his being arrested on suspicion of being concerned in a murder which had been perpetrated shortly before. The color in this instance was due to the peroxide of iron, which was readily detected.

§ 828. The distinction of *arterial* from *venous blood*, except when recently effused, is manifestly impracticable. Their chemical reactions are very nearly alike, and the only ground of distinction is in the more florid color of the former when recently poured out, and occasionally also in the form of the spots; those made by arterial blood being generally of an oval or elongated shape, in consequence of the blood having been thrown in a jet from the divided vessel. Moreover, in practice the two kinds of blood will almost always be mingled together, as it is difficult to conceive a wound being made which shall not involve both sets of vessels. Dr. Taylor makes some interesting observations on the form and direction of spots of blood, suggested by the case of Reg. *v.* Spicer:(*z*) "At the top of the stair, and at the height of four or five feet above the level, several spots of blood were observed upon the brick wall, which was whitewashed. The spots took an oblique direction from above downwards, were of a pale-red color at the upper part, but dark-red below, terminating in a point consisting of the fibrin, and the greater part of the red coloring matter. Their form and regularity proved that they had proceeded from a small artery, and that the wounded individual could not have been very

(*y*) Henke's Zeitschrift, 1855. H. ii. p. 392.
(*z*) Berks' Lent. Assizes, 1846.

distant from the wall, while their shining lustre rendered it probable that they were of recent origin, and their well-defined termination in a firm coagulum showed that they had proceeded from a living bloodvessel. The deceased had died from fracture of the skull and vertebral column, by a fall from the top stair; one branch of the right temporal artery was found divided, and this wound could not have been produced by the fall. It was therefore evident that a murderous assault had been made upon her at the top of the stairs; this had led to the spirting of the arterial blood on the brick. The height at which the spots existed, and their appearance, proved that the jet of blood had been from above downwards; thereby rendering it probable that the deceased was standing up, or that her head was raised at the time the wound was inflicted. Further, as the brick with the spots was on the left hand in the descent, and the wounded artery was on the right side, it is probable that the deceased was face to face with her assailant in the act of ascending the stairs, and that she was killed by being precipitated to the bottom."(*a*) It has been supposed that *menstrual* blood could be distinguished from other kinds by the absence of fibrin; but, although this discharge does not usually coagulate, it nevertheless contains fibrin, and sometimes in very appreciable quantity. Dr. Franz Simon says: "There can be little doubt that there is fibrin in the menstrual secretion; its determination is, however, usually rendered impossible by the presence of a large amount of mucus, which seems to deprive the blood of its power of coagulating."(*b*) M. Robin has given as characteristic qualities of menstrual blood, that it contains, besides blood-disks, epithelial cells and globules of mucus (leucocytes);(*c*) but the latter elements are wanting whenever the menstrual flow is excessive, and in such cases, therefore, the liquid presents no distinctive characters.

§ 829. The presence of fibrin in a blood-stain is merely corroborative proof of the origin of the spot, but does not indicate with any certainty that the stain was derived from the blood of a living person; nor, on the other hand, does its absence give any support to the opinion that it was derived from a body already dead, since, if the stain be superficial, it may yield no traces of fibrin, even though it came from a living vessel, and coagulation in a dead body is not complete immediately upon the extinction of life. Hence, if the physician be able clearly to discover the traces of blood by the reactions of the colored serum before indicated, it is superfluous to inquire for the presence of fibrin; and, on the other hand, this element of the blood could hardly be detected without ample proof of the nature of the fluid having been already obtained from other sources, since the quantity required would be considerable.

§ 830. The discrimination of the *blood of animals* from that of *man* by chemical means, is too uncertain to be used as evidence. M. Barruel has stated that, if one-third or one-half its volume of pure sulphuric acid be added to blood and agitated, that a peculiar odorous principle is evolved, resembling that of the animal from which the blood was derived. Thus, human

(*a*) Med. Jur. p. 203. See also case of *Drory*, by the same author. Guy's Hospital Rep. vol. vii. 1851.
(*b*) Animal Chemistry. Syd. Soc. ed. p. 338.
(*c*) Ann. d'Hyg. 2ème sér. x. 421.

blood is said to give off an odor of perspiration; that of the cow, horse, sheep, pig, &c., a smell, recognized as peculiar to the animal. M. Barruel claims to have discovered this property even in blood which had been dried. According to Schmidt, the experiment succeeds only with the blood of the ram, sheep, and cat. But more recently, an experiment was made by MM. Tardieu, Barruel, and Chevalier, which shows how little confidence can be placed in this test. These experts were charged with the duty of determining whether some blood found in the cellar of a woman accused of murder was human, or, as she alleged, that of a sheep. Being undecided in opinion, they procured the blood of sheep, oxen, and of the living and dead human subject, and these, with the blood from the cellar, and that upon the clothes of the accused, were placed in separate test-tubes by an assistant, and numbered. Sulphuric acid was then added to each, and the mixture stirred. Each expert was required to write secretly his opinion as to the source of the blood in each glass. The result was the greatest confusion, the human blood being constantly mistaken for that of the animal, and a correct opinion seemed only to be obtained by chance.(*d*)

§ 831. 3d. *Microscopical evidence.*—An additional and valuable means of detecting the presence of blood in suspected stains, is by the microscope. If the spots are recent (a week old, for example), three to six hours are sufficient to disaggregate the mass of globules, but a solution of the sulphate of soda penetrates very slowly those which are old, and several days may be required for this purpose. When the tissue has been well soaked, the stains may be carefully detached with a scalpel, and the liquid thus removed should be placed upon a glass slide, and immediately covered with another one. Upon examining a blood-stain thus prepared, many other objects will be seen besides the blood-globules, such as filaments of tissue, &c., but the observer should abstract his attention from these, unless there is reason to suppose that they may indicate the locality from which the blood came, as in the case of mucus, &c., in attempts at rape. A portion of the globules will be found free, while others will be attached to the fibres of the stuff, but they will preserve their natural color, volume, and, more or less, their shape also, to such an extent, however, as to be readily recognized.(*e*) The microscopical characters of spots upon woollen cloth are less easily recognized than those on linen, hemp, or cotton. The investigation should, of course, be conducted only by one familiar with the use of the microscope. If this be done, there can be no hesitation in saying that the results will be fully as valuable as, and open to fewer objections, than the chemical tests.

The stain to be examined should be treated either with a solution of sulphate of soda or of white sugar, in order to preserve the natural shape of the blood-corpuscles. If the stain have been previously washed, it is very possible that the microscope will afford only negative results; but whenever it is possible to recognize distinctly even a single blood-disk in the liquid examined, this

(*d*) Casper's Vierteljahrschrift, 1854. H. i. p. 120. See also, Henke's Zeitschrift, 1855.—H. ii. p. 392, for a number of experiments made with a similar result, by Dr. Albert, of Euerdorf.

(*e*) Robin. Briand, Méd. Lég. p. 790.

is quite sufficient to attest the presence of blood. Dr. Taylor says he has obtained "clear evidence of their existence in, and separation from, a minute fragment of dried blood, which had been kept in a dried state for a period of three years." M. Robin detected them in spots from eight to twelve years old. But such certainty cannot be expected if the spots have been washed, or if, while fresh, they have undergone putrefaction. Sometimes, when the red corpuscles cannot be detected, it may be possible to distinguish the *lymph-globules*, which are larger than these, but few in number, and colorless. Professor Wyman says that when blood is allowed to dry in masses, he has failed to detect the presence of the blood-disks. "The lymph-globules, on the contrary," he says, "may be softened out after they have been dried for months, and their characteristic marks readily obtained." He found it easy to detect them in blood which had been dried six months.(*a*) Virchow also states that they resist being dried and moistened anew better than any other constituent of the blood.(*b*) Still, they are much fewer in number than the red corpuscles, and, according to the best authorities, not in greater proportion than 1:400.(*c*) Virchow lays great stress upon their presence in blood subjected to medico-legal examination, on account of their power of resisting the influence of desiccation and subsequent moistening, and, further, because their presence may confirm a doubtful opinion regarding the existence of red corpuscles in the spot examined. Much will depend, however, upon their number, for if it should equal that of the red corpuscles, or nearly so, they must be regarded as belonging to pus rather than to blood. The possibility of their number being explicable by leukæmia, or leucocythemia, a disease in which they may become one-third as numerous as the red corpuscles, is also to be borne in mind.

The red corpuscles of man have an average diameter of $\frac{1}{3500}$ of an inch, and this size is not affected by age, being the same in the young and the old. They have a flattened shape, depressed centre, and circular outline. These characters suffice to distinguish them from those of birds, fish, and reptiles, in which creatures they are of an oval or elliptical form, and have a distinct central nucleus. They have the same shape also in the camel tribe. But the globules in all the mammalia (with this exception of the *camelidæ*) are so nearly alike in size and other characters to those of man, that, practically, no distinction can be made. Thus, the blood of an ox or of a sheep cannot by the microscope be, for medico-legal application, distinguished from that of a human being, for although the globules are somewhat smaller than those of human blood, yet the size of the globule of human blood varies according to whether it is fresh or dried, and the difference between its size in man and animals is too slight to be made a point of evidence in cases where such momentous consequences may depend upon the decision.(*d*)

(*a*) Statement by Prof. Wyman in Bemis' Webster case, p. 90.
(*b*) Archiv, xii. 335.
(*c*) See Kölliker, Mikroskopische Anatomie, Bd. ii. p. 576.
(*d*) For the comparative size of the blood-globules in man and animals, the reader may consult with advantage Kölliker's Mikroskopische Anatomie, Bd. ii. p. 580; Briand, Manuel Pratique de Méd. Lég. 781; Todd and Bowman's Physiological Anatomy, part iv. p. 299; C. Gulliver on the size of the red corpuscles of the blood in the vertebrata, in the Proceedings of the Zoolog. Soc. ciii. 1842; R. Wagner, Beiträge zur vergl. Phy-

An additional and still more certain proof of the presence of blood is derived from certain microscopical crystals which this liquid contains. They were discovered in 1853 by Teichmann, and the method of detecting them has subsequently been perfected by Brücke, Virchow, Büchner and Simon, and Bryk. Blood-crystals most frequently are seen as rhomboidal plates, but sometimes as rhomboidal columns, and, when less perfectly developed, have the form of a shuttle, or that of a §. Like other microscopical crystals, they tend to intersect one another, and often form a St. Andrew's cross, a stellate figure, or a rounded body studded with points like a stramonium apple. Their prevalent color is a dull brownish red, but it may vary from a dirty yellow to deep black, according to the amount of coloring matter of the blood which is present in the solution. Their number is likewise subject to great variations. They are wholly insoluble in water, alcohol, ether, and chloroform, and in acetic, phosphoric, and muriatic acids; slightly soluble in ammonia, and in dilute sulphuric or nitric acids; but entirely so in solution of potassa, to which they give a dark-green color, also in English sulphuric acid, and in fuming nitric acid. To the last-named liquid they impart a brownish-red color. In chlorine-water they become disintegrated and corroded, and lose their color.(*dd*)

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siologie des Blutes, i. 1833, ii. 1838; Partium Elementarum Mensiones Micrometricæ, 1834. Carl Schmidt has also conducted such measurements with great industry (see an excellent paper upon blood-stains, by Dr. Fleming, Am. Journ. Med. Sci. Jan. 1859, p. 110), but his results, while they show a considerable average difference between the size of the human blood-globule and that of various domestic animals, are still insufficient to be brought in evidence in the decision of medico-legal questions. This also is the emphatically expressed opinion of Virchow and of Brücke. (Virchow's Archiv, xii. 336.)

In the following case of presumed infanticide, in which a medical expert was required to determine the nature of some spots found upon a towel (described as having served to envelop the child) which was found concealed under a threshing-floor, the reader will perceive the nature of the investigation sometimes required:—

(1.) The towel was of coarse huckaback, quite rotten, as a year had elapsed since it was concealed in the locality in which it was discovered, and the letters J. E. A., 20, were marked in red cotton upon one corner. It was very much torn, and full of holes.

(2.) In one corner *three spots* of a dark-red color, resembling blood, were found.

(3.) On another portion of the towel numerous large spots of a *dark-green* color were seen, resembling dried meconium. The texture of the cloth was so penetrated with this matter that even upon the opposite side it was slightly tinged with green.

(4.) Spots of various sizes, of a *grayish-yellow* color, were found on other parts of the towel. These spots were dry, and could be detached in scales.

(*a.*) The red spots were cut out and softened in some fresh liquor amnii, and revealed, upon examination by the microscope, all the characteristics of globules of human blood.

(*b.*) The portions discolored by the green material were also cut out and placed in distilled water, others in alcohol. These solutions, when treated with concentrated sulphuric acid, and a few drops of a solution of sugar (according to Pettenkofer), gave traces of a *violet* color, which was considered to indicate the presence of bile.

(*c.*) Some of the same spots, dissolved in liq. amnii, and examined by the microscope, were found to consist of biliary cells, cylindrical epithelium, and fatty crystals.

(*d.*) The *grayish-yellow* stains being prepared in a similar manner, exhibited epidermic cells, and cells from the sebaceous follicles. Hence it was inferred that the various discolorations upon the towel arose—1. From blood; 2. From the secretions of the liver and intestines; and 3. From the cutaneous secretion; and that they could all be explained on the supposition of a new-born child having been wrapped in it. It was further supposed, from the ragged condition in which the cloth was found, that it had been torn by some animal which had carried away and devoured the body of the child.—*Wistrand, Hygiea*, Bd. xiv. p. 220.

(*dd*) Büchner and Simon, Virchow's Archiv, xv. 52.

These characteristic crystals have been obtained from all kinds of blood—from that of man, quadruped, fowl, and fish; from fresh and putrid blood; from newly-drawn blood and from spots several years old; from arterial, venous, and menstrual blood; from pure blood and from that which was mingled with all sorts of impurities. It is to be observed that various coloring matters, mostly from the vegetable kingdom, form crystals which bear some analogy to those peculiar to the blood—as indigo, alkanet, logwood, madder, &c. But the blue color of the first of these, and the want of color in the rest, with the rhombic forms of their crystals, are sufficiently distinctive, to which, however, may be added their ready solubility in many liquids, and, for the most part, even in water. Purpurate of ammonia presents some difficulties. It forms, both with and without the addition of acetic acid, crystals very closely resembling those of hæmatin, in form and in color. Its acetic solution gives a residue, after evaporation, of a clear brick-red color, but blood similarly treated is a dull brownish red. The same residue becomes purplish red on the addition of water; muriatic acid destroys its color, and solution of potassa gives it a blue tint; whereas blood-crystals are insoluble in the first liquid, and form a dark-green solution with the other.

In making this examination, the suspected spots on soft substances—as clothing, &c.—should be cut out, and those on hard substances carefully removed by scraping, and liquids thought to contain blood should be concentrated by evaporation. Spots a few weeks or months old yield their coloring matter readily to water, but older and faded stains require maceration or boiling in acetic acid until the latter is reddened. Indeed, this is the speediest and most certain process for all blood-stains, except when they are upon a substance the coloring matter of which is extracted by the acid. The acetic solution thus obtained should be gradually evaporated in a watch-glass at a temperature of 100° to 140° F. If blood is present, a thin, reddish, transparent crust is left behind, in which the crystals of hæmatin lie firmly imbedded, and ready for examination by the microscope. It is not necessary, as was at one time supposed, to add common salt to the acetic solution. On the contrary, this addition tends to confuse the result where the blood-crystals are abundant. Still, it must be admitted, as Büchner and Simon insist, that if a first trial without salt gives a negative result, the experiment should be repeated with this addition; and if enough only of the suspected material is preserved for a single experiment, the use of salt should not be omitted. It is essential that a very minute grain of salt should be added to the solution *before* it is heated.

The following important details respecting the application of the above method to the examination of blood-stains under different circumstances are furnished by Prof. Bryk.(*e*) Spots of blood left by fleas or bugs yield no crystals. Blood-stains on wood differ with the character of the wood. If smooth, dry, and hard, it does not interfere with the formation of crystals; but if it imbibes the blood, it will still, during the first six or eight days, yield by maceration a solution of the hæmatin which will furnish crystals. At the end of six or eight weeks this is no longer the case with soft wood, the tannin

(*e*) Prager Vierteljahr. lxii. anal. p. 106.

of which apparently renders the coloring matter insoluble. On clean iron the susceptibility to crystallization remains so long as rust does not form. On clay and chalk blood also remains indefinitely, unless it is in a very thin layer, or is exposed to the action of the weather.

§ 832. For the modes of detecting *hair*, and also *dried cerebral matter*, under the microscope, we would refer the reader to the suggestions of Orfila and Robin, in Briand's Manual de Méd. Lég. pp. 810–816. For cases in which evidence from these sources was considered of importance, see the same work; also Med. Gaz. vol. xlviii. p. 729, where it was necessary to distinguish between the hair of a human being and an animal; also Taylor's Med. Jur. p. 249, where some cotton-fibres detected by the microscope on the edge of a razor showed that the weapon had cut through the strings of a cotton night-cap in giving a fatal wound upon the neck; and, finally, one in Henke's Zeitschrift, 1853, p. 334, in which an assassin was detected and convicted partly upon the indicatory evidence furnished by a lock of hair remaining firmly grasped in the hand of the murdered man. The hair resembled, in all its physical character, that of the prisoner; the individual hairs were found to be some of them broken, others torn out by the root, and others cut, and a bare place was found on the prisoner's head to which they corresponded.

The value of microscopical evidence of the character of stains and of hair is well illustrated by the following case,(*ee*) which occurred in Norwich, England. A female child, nine years old, was found lying on the ground, in a small plantation, quite dead, with a large and deep gash in the throat. Suspicion fell upon the mother of the murdered girl, who, upon being taken into custody, behaved with the utmost coolness, and admitted having taken her child to the plantation where the body was found, whence the child was lost by getting separated while in quest of flowers. Upon being searched, there was found in the woman's possession a large and sharp knife, which was at once subjected to minute and careful examination. Nothing, however, was found upon it, with the exception of a few pieces of hair adhering to the handle, so exceedingly small as scarcely to be visible. The examination being conducted in the presence of the prisoner, and the officer remarking: "Here is a bit of fur or hair upon the handle of your knife," the woman immediately replied: "Yes, I dare say there is, and very likely some stains of blood, for, as I came home, I found a rabbit caught in a snare, and cut its throat with the knife." The knife was sent to London, and, with the particles of hair, subjected to a microscopic examination. No trace of blood could at first be detected upon the weapon, which appeared to have been washed; but upon separating the horn handle from its iron lining, it was found that between the two a fluid had penetrated, which turned out to be blood—certainly not the blood of a rabbit, but bearing every resemblance to that of the human body. The hair was then submitted to examination. Without knowing anything of the facts of the case, the microscopist immediately declared the hair to be that of a *squirrel*. Now, around the neck of the child, at the time of the murder, there

(*ee*) Quoted by Dr. Fleming, loc. cit., from Chambers' Journal, part xxxv. Dec. 1856.

was a tippet or "victorine," over which the knife, by whomever held, must have glided; and this victorine was of squirrel's fur. The woman was convicted, and, while awaiting execution, fully confessed her crime.

V. *Cause of Death in Wounds.*

§ 833. Wounds become the cause of death either by direct or indirect influence. In the first case the tendency to death is necessary and immediate, or nearly so. In the second, the injury is the remote cause of death, other causes intervening by which the fatal result is accelerated or rendered inevitable. The mode in which a wound proves directly fatal is either by hemorrhage, shock, or great mechanical injury.

§ 834. 1st. *Hemorrhage.*—The rapidity of dissolution, when this is brought on by loss of blood, is proportionate to the amount and suddenness of the hemorrhage. These, in their turn, depend upon the size and nature of the vessel wounded. Thus a person may sustain the loss of an enormous quantity of blood, provided it ooze but slowly from the body; while a far smaller amount would produce fatal syncope, if rapidly poured out from some large vessel. Blood escapes also from a wounded vein more slowly than from a divided artery, and venous hemorrhage is therefore less likely to prove fatal than arterial, as well as because the blood which is lost is not so essential to life. A third form of hemorrhage becomes, in some special cases, of serious importance. This is *capillary* hemorrhage, in which the blood effused upon the surface of the wound is extremely serous in its character, less dark than venous blood, and appears in the form of drops, which quickly run together and cover the wound. It occurs in persons of a hemorrhagic disposition upon the most trifling wound, and is exceedingly difficult and often impossible to control. In these persons a common epistaxis becomes a matter of grave importance, a scratch with a knife, the bite of a leech, or the extraction of a tooth, is followed by an oozing of blood which no hemostatics will arrest. This hemorrhagic disposition sometimes is hereditary, and, according to the large number of observations now on record, is generally confined to the males in a family. Most of these cases have been collected by Dr. Beck.(*f*)

Age and disease have also their influence upon the fatality of hemorrhage. Children readily succumb from a trifling loss of blood, and those whose constitution has been impaired by chronic disease, have, as might be expected, little power of recovering from hemorrhage. A number of small wounds may occasionally lead to as grave results as a single large one. A singular case is related in which a dealer in leeches was set upon by highwaymen, who, after having plundered him of his money, thrust his head into the sack containing the leeches and bound him fast. The unfortunate man, a short time afterwards was discovered still alive, but notwithstanding medical aid was given him'

(*f*) Med. Jur. vol. ii. p. 595 et seq. Vid. also Schneider—Die Blüter, erbliche Blutung oder so genannte Bluterkrankheit, &c. Henke's Zeitschrift, 1847, H. i. The following additional cases may also be consulted: Dunlap, N. York Jour. (N. S.) iv. 314; Strong, Am. Jour. of Med. Sci., July, 1854, p. 80; Miller, Edinb. Jour., Jan. 1856, p. 638; Townsend, Boston Med. & Surg. Jour., Jan. 1857, p. 447; Huss, Archives Gen., Aug. 1857, p. 165; and Heymann, Virchow's Archiv. xvi. 183.

he perished in consequence of the loss of blood from the multitude of leech-bites.(*ff*)

Where the hemorrhage is *internal*, besides the exhaustion attending it, death is accelerated by the mechanical action of the blood. Thus, if an intercostal artery have been wounded, the blood being effused into the cavity of the chest, will compress the lungs and seriously embarrass respiration. In wounds of the pericardium the blood effused into this sac is most probably the immediate cause of death, owing to its interference with the functions of the heart. If the throat has been cut the blood may flow into the trachea and lungs, and thus cause death by asphyxia. But the mechanical effects of hemorrhage are best seen in those injuries of the head in which any of the cerebral vessels have been wounded. Here the fatal result of compression from a clot is evident in the apoplectic state induced by it, when perhaps the actual loss of blood has been trifling.

All of the above-mentioned circumstances must be taken into careful consideration, in the post-mortem inspection of persons who have died soon after receiving one or more wounds. Where death has resulted from hemorrhage alone, the fact is usually indicated by the pallor and waxy appearance of the skin, the absence of cadaveric blotches, and the paleness of the internal organs. Putrefaction occurs also later than usual. These appearances will be found more marked in those cases in which the hemorrhage has not been very rapid.

§ 835. 2d. *Shock.*—The possibility of a person dying from the shock attendant upon an injury, which by itself appears to be unimportant, is attested by experience. Many theoretical explanations have been offered to account for this fact, a consideration of which would here be out of place. The shock from an injury may prove fatal in two cases. 1st. When the blow leaves no trace behind it; and, 2d. Where great violence has been done to some important organ without occasioning a sufficient amount of hemorrhage to produce death. If a person receive, for instance, a violent blow in the pit of the stomach, or behind the ear, he may be almost instantaneously deprived of life. On post-mortem examination, there may be found externally but slight marks of contusion, and internally neither laceration, fracture, nor hemorrhage by which the cause can be brought into any visible relation with the fatal result. "Mr. Lambert, a respectable individual in New York, received a blow on the stomach from some rioters, immediately after coming from a supper party. He died almost immediately. On dissection no mark of injury could be discovered, except some small red spots on the internal surface of the stomach, and there was no mark of external contusion. The brain was healthy. Dr. Post and other witnesses concurred in believing that the blow was the cause of death, and not sudden fright. The prisoners were convicted of manslaughter."(*g*) A similar case is related by Sir Astley Cooper, and another by Mr. Wood.(*h*)

§ 836. 3d. *Mechanical injury.*—If, again, some part of the body, espe-

(*ff*) De Neufville. Henke's Zeitschrift. Erg. H. 1851, p. 40.
(*g*) Beck, Med. Jur. vol. ii. p. 337. (*h*) Med. Gaz. vol. xliv. p. 213.

cially any of the internal organs, have suffered any great mechanical injury, as from being crushed by a heavy weight or projectile, or by a fall from a height, there will very frequently be no external mark of violence and no internal hemorrhage sufficient to account for death. But the fatal result is no less evidently due to the powerful impression made upon the nervous system by the violent disruption or laceration thus produced. The following may serve as an example: An American Philhellene was struck by a cannon ball, in the batteries of Napoli di Romani, which carried off the right hand that had been resting on the haunch, a portion of the right half of the pelvis, and part of the thigh. The abdominal viscera were laid bare but not torn, and there was trifling hemorrhage from the wounds. He conversed calmly about the Greek wars, in which he had taken an active part, asked if a man could live who had lost the half of his body, and died suddenly three hours after being injured.(*i*)

Under this head might perhaps be properly introduced instances of death from ill-treatment or from a large number of trifling wounds, unattended with any serious hemorrhage. Death in such cases takes place rather from the exhaustion and terror of the sufferer than from the momentary shock of the injury, but it may also be due to inflammation of internal organs following upon extensive injury to the skin. Examples of this mode of death have been known to ensue from severe flogging ordered by military authorities.(*j*) Such also is probably the immediate cause of death in many cases of extensive burns or scalds, where the function of a large portion of the skin is at once destroyed.(*jj*)

(*i*) Navy Medical Reports, by Sir John Liddell, M. D., &c. Med. Times, April, 1854.

(*j*) Vid. Lancet, 1846, for an account of the case at Hounslow. A case of epilepsy and one of congestion of the brain produced by this brutal punishment are recorded by Dr. Davidson, Med. Times and Gaz., Dec. 1853, p. 623. Quite recently, April, 1860, a boy of fifteen died at Eastbourne, Eng., from the effects of blows upon his back and legs, inflicted by his tutor with a skipping-rope with wooden handles, and with a thick walking-stick. This punishment was resorted to as a means of conquering the boy's obstinate and perverse disposition and obliging him to learn. Ibid. May, 1860. It is evident that the boy was insane.

(*jj*) A painfully interesting chapter on the cruelties and injuries inflicted upon children has been written by M. Tardieu. (Ann. d'Hyg. Avr. 1860, p. 361.) These are various in their character as the instruments which are employed; cuffs, blows, kicks, stripes, and bruises from rods, cords, thongs, whips, clubs, forks, shovels, tongs, and every variety of instruments. Sometimes children are dragged, pinched, or have their flesh torn; they are deprived of all means of cleanliness, coarsely fed or starved, hid away in dungeons, closets, or boxes; exposed to icy cold or tortured with hot coals, or iron, or corrosive liquids; their limbs are mutilated, the ears and nose lacerated, or the hair torn out; or they are suffocated with food, or obliged to swallow the most disgusting and loathsome substances.

The victims of these cruelties are generally very young. In seventeen out of thirty-two cases, they were under the age of five years, and in seven cases, from five to ten years old. In nearly all the instances the cruelties were inflicted by the parents; eleven times by both together, eight times by the mother and five times by the father only, four times by a stepmother, four times by a school-teacher, and once by a woman to whom the child was apprenticed.

Their aspect is generally peculiar; they are pale and thin, and sometimes wasted almost to the bones, with a dull, downcast, saddened look, and a timid manner. The marks of their cruel treatment generally consist of bruises, wheals, and excoriations. The bruises are usually upon the face, limbs, and back, and are peculiar in not generally occupying prominent parts, as they would do if produced by a fall. Their shape is often distinctive, and resembles that of the hand, nails, stick, shoe, &c., which inflicted them; or they are red, oval, and ecchymosed from pinching; present double

The causes now enumerated which render wounds directly fatal without the intervention of secondary causes, may be variously combined. Practically there are few fatal wounds in which they are not united. This fact should not be lost sight of by the medical witness in giving his opinion as to the immediate cause of death.

§ 837. 4th. *Diseased condition of body.* — Sometimes a wound which, under ordinary circumstances, would not be immediately fatal, becomes so, in consequence of the existence of some *abnormal* or *diseased condition* of the body. The cases which fall under this remark are exceedingly numerous. An undue thinness of the skull, a displacement of the viscera, an abnormal distribution of the arterial trunks, an aneurism, a hernia, and many other similar defects may prove the occasion of a wound being rapidly fatal, which otherwise would not necessarily have been so. Thus, if a person have an aneurism of the aorta in the chest or abdomen, and be struck with a certain degree of violence over these cavities, he may suddenly die from a rupture of the aneurismal sac caused by the blow. Or if he have at any time been subjected to the operation of trepanning, by which a portion of the skull is removed, which is not again reproduced, a blow or wound on this part will necessarily prove eminently dangerous.(*k*) A constitutional disposition to hemorrhage upon slight causes has often brought on a fatal termination in trifling wounds.(*l*) It is hardly necessary to state that old age, infirmity of any kind, or that even

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parallel and bruised lines when produced by blows with a ruler, or the stripes occasioned by a whip-lash, &c. The wounds are contused, lacerated, accompanied with fracture of bones, or are produced by fire or by corrosive agents; or certain marks, such as deep furrows in the skin, or a permanent stiffness of the limbs, or a deformity of the bones, indicate the use of cords, or the confinement of the body in a constrained position.

In 18 of the 32 cases collected by M. Tardieu death was caused, either directly or indirectly by blows or prolonged ill usage, and it is to be observed that the former may be fatal by their direct shock to the nervous system.

As illustrations of this painful subject, a brief notice of two cases contained in the paper above referred to may here be presented.

A father and mother were condemned to hard labor for life upon conviction for having cruelly maltreated their daughter from the age of eight to that of seventeen years. She was incessantly whipped, knocked down, beaten with all manner of instruments, and lashed upon the back with a cat-o'-nine-tails while hung up by the wrists. One night, while she was naked and firmly bound down, her father applied red-hot coals to her back and limbs, renewing them as fast as they ceased to burn; and on the following night, after she had been flogged with the cat, her mother applied a sponge soaked with nitric acid to the wounds. These abominable and unparalleled atrocities were several times repeated, with variations of intenser cruelty. The unhappy victim slept in a chest about six feet long by twenty inches high and twenty-four inches wide, upon a litter of stinking straw, with which, after her back had been made raw, they mingled nettles and brambles. In this she was confined by a lid secured by means of a padlock, and only raised enough to permit her to breathe. If it was possible to add anything to these cruelties, it was done by the father of the victim, who addressed her in filthy language, and attempted indecently to touch her person, and finally, after binding her firmly with her limbs asunder, he thrust a wooden plug into her genitals. It is remarkable that the girl attempted to explain all of the injuries found upon her person in such a manner as not to accuse her parents.

The remaining case is, briefly, the following. The stepmother of a fine, robust boy, four years of age, suffocated him by forcing food into his throat. The mouth and throat were distended by a compact mass of doughy bread, large quantities of which were also found in the stomach and œsophagus, and some portions of it even in the trachea.

(*k*) Vid. Hinze, Hufeland's Journal, 1819, p. 79. (*l*) Vid. Beck, ii. 295.

a highly excitable condition of the nervous system, may rapidly accelerate the approach of death.

It is also of importance to remember that owing to internal disease death may occur during a quarrel although no blow shall have been given. Two women were engaged in a violent altercation, when one was seen suddenly to fall down dead. On examination she was found to have died of congestion of the brain; yet, but for the witnesses of her mode of death, her adversary might have been suspected of dealing her a fatal blow.(*ll*)

§ 838. 5th. *Wounds inflicted on pregnant women.*—Pregnancy obviously renders the prognosis of a wound more grave. The mere shock of the injury may bring on premature birth of the child, and hence endanger the life of the mother. But wounds which involve the abdomen, and especially those in which violence is done to the uterus, are necessarily of extreme gravity for the woman and her child. The injury may result in the death of either or both. The amount of external violence necessary to produce this result it is of course impossible to determine, since many instances are on record in which very severe injury has been inflicted under these circumstances without being followed by fatal results. On the other hand, contusion of the abdomen from kicks or similar violence, may produce death by shock or peritoneal inflammation, and wounds of the impregnated womb are always attended with severe bleeding and the danger of a premature delivery.

§ 839. 6th. *Indirect complications.*—A wound may prove *indirectly fatal* in a vast number of ways. We shall only enumerate the more common and important of these, as it is, we conceive, of more consequence that the principle of the remote dependence of death upon a wound, perhaps not necessarily mortal, should be understood, than that all the circumstances which may possibly intervene between the period at which the wound was given and that of the fatal result, should be enumerated.

Should the person not die from the immediate effect of the wound, he may nevertheless succumb from some one of the chain of disturbing causes to which it has given rise, or from the wound itself, rendered fatal after a length of time, by extraneous causes. In many instances the fatal result can be traced to its origin in the wound, partly from the evidence derived from a post-mortem inspection, and partly from the history of the patient's condition from the time he received his injury. The length of time that may elapse after the infliction of violence, before death follows it, is of course indeterminate.

Without the supervention of any of the complications to be presently enumerated, the wound may have interested parts not essential to life, and yet may render its protraction for any considerable period impossible, since the changes produced by it in the organism may go on gradually increasing in their gravity till death result. Thus injuries to the spine, producing paralysis of the lower limbs and of the sphincter muscles of the bladder and rectum, or blows on the head, giving rise to chronic disease of the brain, will gradually undermine the powers of life, and bring it to a deplorable end, after long confine-

(*ll*) Prager, Vierteljahrs. lxvi. 26.

ment, suffering, and distress. Such is often, also, the result of gunshot wounds, where the ball remains in the body, and the patient is wasted away by suppuration and hectic.

The old division of wounds into those which are necessarily, and those which are conditionally mortal, gave rise to so many errors of prognostication, that it has now much less authority than formerly. It will, of course, always be necessary to discriminate concerning the gravity of wounds, but it will never be possible to draw a line of distinction, which will be universally recognized, between the absolutely and the conditionally mortal. The truth of this statement will, we think, be fully borne out, when the multitude of circumstances is considered which may influence the result favorably or the reverse.

§ 840. (3.) *Tetanus.*—Among the most frequent and serious complications of wounds, is *tetanus*, or lockjaw. This disorder occurs most frequently after punctured or lacerated wounds, especially such as interest the nerves or tendons. It is said to be occasionally epidemic, and to be of more frequent occurrence in warm than in temperate climates. In fact, it may occur idiopathically; that is, without any wound having been received. The wound giving rise to it is often exceedingly unimportant. Thus, it has been caused by the sting of a bee, the stroke of a whip, or the irritation of a small splinter of bone. But it is "mostly connected with wounds of fibrous and ligamentous structures, accompanied with tearing, bruising, partial injury, and exposure of the nerves; with wounds of the joints, of the face, neck, fingers, toes, and of the spermatic cord: it usually begins during the suppurative period, and even during or after the scarring of the wound. Foreign bodies in the wound, especially splinters of bone, ligatures of arteries, if a nerve be included in the ligature, are all to be considered as not unfrequent causes of tetanus. Likewise, hot seasons of the year, cold, frequent change of the temperature, especially in low districts and in the neighborhood of rivers, and the influence of a moist, cold, foul air upon nerves after their exposure by the separation of sloughs."(*m*) The time at which it may supervene after the injury, is not precisely known. Occasionally, it ensues upon recent wounds immediately, and in other cases does not occur for several days. Not unfrequently the wound is entirely healed before the attack. Brodie mentions the seventeenth day as the latest period after the accident in which he had known tetanus to come on.(*n*) Sir James McGrigor notices a case twenty-two days after,(*o*) and Blane speaks of it as happening within a month.(*p*) It is a very serious complication of a wound, proving fatal in the majority of cases. Dr. O'Beirne states, that of two hundred cases which he saw, not a single one recovered.(*q*) Hennen says: "I have never been fortunate to cure a case of acute symptomatic tetanus: in some instances of the chronic species I have effected or witnessed a cure."(*r*)

§ 841. (4.) *Erysipelas.*—This affection, which increases greatly the gravity

(*m*) Chelius' Surgery, by South, Am. ed. vol. i. p. 417.
(*n*) Lond. Med. Gaz. vol. ii. p. 344. (*o*) Med.-Chir. Trans. vol. vi. p. 453.
(*p*) Diseases of Seamen. (*q*) Dub. Hosp. Rep. vol. iii.
(*r*) South's Chelius' Surgery, vol. i. p. 419.

of wounds, is a frequent accompaniment of those which are lacerated and contused, and especially if seated upon the scalp. It spreads rapidly in the wards of hospitals under certain conditions of the atmosphere, which are not well understood; and an important question will therefore arise as to the degree of responsibility of the person who inflicts the wound, when the injured man dies from an attack of erysipelas. This disease is, however, far less frequently fatal than traumatic tetanus.

§ 842. (5.) *Hospital gangrene.*—Such is the name given to an ulcerative and gangrenous disorder which seizes upon the wounds of persons placed in close and crowded apartments. It is rarely seen except in military hospitals in time of war, or in other situations where fresh air and cleanliness are wanting.

§ 843. (6.) *Nervous delirium, secondary hemorrhage,* and *purulent resorption,* may be mentioned as other causes rendering wounds fatal. All of these accidents may ensue upon surgical operations undertaken for the relief of the injured person, as well as be induced by the wound alone. Thus gangrene or erysipelas may attack the stump of an amputated limb, or the patient may die from secondary hemorrhage, or from any of the foregoing diseases notwithstanding the best care and foresight and most judicious treatment.

§ 844. 7th. *Surgical operations.*—Death, indeed, sometimes takes place during or immediately after surgical operations undertaken for the relief of the wounded person. The question of responsibility in this case, belongs to the legal portion of the subject. It may not, however, be out of place to remark that the surgeon can seldom foresee, with confidence, the issue of capital operations, for there are many individual peculiarities and causes beyond his control, which may make it unfavorable. The same may be said of any plan of treatment, whether it involves a serious operation or not. The question may arise, whether the surgical treatment employed was the best that could be devised, and whether, had some other course been pursued, a favorable result might not have been obtained. Or, it may be alleged that the treatment was so unskilful, or the patient so much neglected, as to be the occasion of the fatal termination of the injury. That these facts should be established beyond dispute, it ought to be shown that the treatment was marked by the omission of something universally recognized as of primary importance. But as every surgeon has some peculiarities in his practice, and as the mode of treatment of bodily injuries, from the progressive nature of the medical art, is various, this omission should be looked for only in those points which betray an ignorance of the fundamental principles of surgery. However much the opinions of competent persons may differ respecting the choice of remedial means, they will generally, we think, be found united upon the principles which should govern their application. Still, occasionally, the plan of treatment may be so singular, although apparently founded upon correct notions of the curative process, as to call for reprobation. Thus, in a case which occurred in Saxony, a surgeon was deprived of the liberty of practising his profession in that country for having attempted to promote bony union between the fragments of a fractured patella, by the novel expedient of firing a pistol between them. Although no permanent injury was done to the patient,

who, indeed, a few months after the operation, declared that his leg was nearly as good as the other one, and that he was even able to dance and to walk long distances, yet the medical commission charged with the case very properly considered the operation as likely to prove a dangerous precedent if it were not condemned.(*s*)

§ 845. The difficulty is not so great where the original wound has been trifling, chiefly because its comparatively innocuous character can be clearly shown. Thus, for instance, if the hand have been wounded and one of the arteries divided, compression may be necessary to arrest the hemorrhage. But if a surgeon, with this view, should apply a bandage so firmly, or on the other hand, leave it on so long as to cause mortification of the part, and death ensue in consequence, it is evident that the treatment has not only been unskilful, but that it has really been the cause of death, since the wound of the hand was neither, in itself, mortal, nor would it have produced death in the manner described. But, in severe injuries, in which various complications arise and require the exercise of the greatest skill that learning and experience can give, it cannot be expected that some will not terminate fatally, which, perhaps, under more favorable circumstances, or a better plan of treatment, might have had a fortunate issue. The most humble surgeon may chance to receive the charge of an injury which calls for the enlightened tact and experience of a highly educated man; if his treatment should not prove successful, he should be prepared to show, if required, that his patient had the best care which he was able to afford him, and, if possible, that he consulted with one or more colleagues respecting the treatment. In the language of Judge Woodward, "The implied contract of a physician or surgeon is not to cure—to restore (*e. g.*) a fractured limb to its natural perfectness, but to treat the case with diligence and skill. * * * He deals not with insensate matter, like the stonemason or bricklayer, who can choose their materials and adjust them according to mathematical lines, but he has a suffering human being to treat, a nervous system to tranquillize, and a will to regulate and control."(*t*)

§ 846. The voluntary and persevering *refusal* of surgical assistance, when this holds out the only probable means of safety, may be enumerated among the causes which indirectly increase the fatality of wounds. Thus, if the amputation of a limb, the tying of an artery, or the observance of a prescribed medical course, be resisted and refused by a patient, he may very often pay the penalty of his obstinacy or timidity with his life. Such instances are by no means rare among the ignorant, with whom often the most assiduous medical attention has to contend against every obstacle to success.

VI. *Wounds of Various Parts of the Body.*

1st. *Injuries of the head*, from their frequency and gravity, as well as from the various medico-legal questions they often give rise to, are deserving of particular attention.

(*s*) Casper's Vierteljahrschrift, 1852, Bd. 1, H. 1.

(*t*) McCandless *v.* McWha, Error to Common Pleas of Beaver County. Am. Journ. Med. Sci. Jan. 1854, p. 273.

§ 847. (1.) *Concussion of the brain.*—This term is applied to those cases in which, either from direct or indirect violence to the head, the brain receives a shock which may prove fatal, without being revealed after death by any physical alteration. Thus, a blow upon the head, or a fall from a height upon the feet, knees or buttocks, may, without producing any serious external lesion, be the cause of death by a commotion or concussion of the brain. Cases are also related, in which a blow, familiarly designated as a "box on the ear," has resulted fatally in this manner. In Hennen's Military Surgery, a curious example of concussion of the brain is quoted from an old German author, in which a cannon ball took away the queue from the nape of a soldier's neck, without injuring the integuments in any sensible degree. He continued in a complete state of stupor for many days, during which he was bled at least twenty times.(*u*) Sometimes, indeed, the immediate cause of death is found in a laceration of the brain, a rupture of a bloodvessel in the brain, causing a compression of this organ by extravasation of blood, or, again, inflammation is set up with a like fatal result. Such accidents are thus conjoined occasionally with concussion.

The question has sometimes arisen as to the distinction between the symptoms presented by a person laboring under concussion of the brain, and one in a state of *intoxication.* Very often they are coincident in the same individual. Symptoms of slight concussion are, however, so similar to those produced by intoxication, that it is sometimes difficult to know which cause they should be attributed to. There are indeed few peculiarities by which a physician could, better than an unprofessional person, recognize the difference, and, practically, the history of the case and the odor of liquor upon the breath will be the only sources upon which a judgment can be founded. Mr. South says, "It is often very difficult to distinguish between drunkenness and either concussion or compression; especial care should therefore always be taken to ascertain, as far as possible, the condition of the patient previous to the accident, lest he should be lost by too slight consideration of his symptoms."(*v*)

Injuries of the head may prove fatal, whether they involve immediately the contents of the skull or not. Among the most serious of the external wounds are those affecting the tendinous aponeurosis of the occipito-frontalis muscle and the pericranium. Erysipelas is very apt to follow these injuries. Inflammation of these parts is, moreover, readily propagated to the membranes of the brain, and especially after contused wounds. The prognosis must therefore be always reserved, since wounds of these parts, in appearance trifling, may result fatally.

§ 848. (2.) *Fractures of the skull* vary in their danger according to their situation, their extent and the amount of depression. Fractures of the base of the skull are the most dangerous, both from the fact that they are not within the reach of surgical interference, and also because the effusion of blood resulting often from the laceration of the lateral sinuses, exercises a compression upon that portion of the encephalon, most intimately connected with the functions of both organic and animal life. These fractures are often not

(*u*) Hennen's Surgery, p. 318.
(*v*) Chelius' System of Surgery, vol. i. p. 451.

recognized during life, in consequence of their position; and it should not be forgotten that the portion of the skull which is broken does not always correspond in situation with the part where the blow was received, but may indeed be produced by *counter-stroke*, at a point directly opposite to it. The cranium is composed of two tables of bone, between which is a vasculo-cellular substance, called the diplöe. The external table alone may be fractured, and although no compression be thereby exercised upon the brain, yet from the intimate vascular connection between the diplöe and the dura mater, the inflammation resulting may be communicated from it to the latter. Or necrosis may follow the contusion, resulting fatally at a later period. The inner table, which from its great brittleness is called *vitreous*, may be fractured without fracture of the outer one, and by compression of the brain by fragments of bone, effused blood, or by subsequent disorganization from necrosis, a fatal result ensue. M. Bayard relates several cases of this kind. In one, a man received a blow from the fist upon the forehead; no mark was left, but he became dizzy and fell to the ground. He suffered afterwards from headache, nausea, and vomiting, and on the twenty-sixth day, became paralyzed and died in convulsions. The inner table of the skull, under the right eyebrow, was found to be necrosed. Both hemispheres of the brain were covered with a purulent exudation, and the ventricles were filled with the same.(*w*) When, however, as it is generally the case, the whole thickness of the bone is broken, the danger is proportionably increased, and although the injury is, by no means, necessarily fatal, yet if the bone press upon the brain, and there be an extravasation of blood over the membranes or into its substance, death is the common result, unless the bone be elevated by surgical aid, and the compression removed. The cases in which it is proper to trepan, and the appropriate place for the application of the instrument, are fully discussed in surgical works. Questions arising out of the neglect of trepanning or its alleged unnecessary employment, have a bearing not unfrequently in charges of mal-practice, as well as in homicide.(*x*) Any abstract of surgical opinion on this subject must necessarily be extremely

(*w*) Ann. d'Hyg. vol. xxxv.

(*x*) Such questions are often difficult of decision, as may be learned from the following case, which is discussed at length in Henke's Zeitschrift, 1860, Bd. 79, s. 177. In Dresden, on the 21st June, 1856, a jealous husband inflicted repeated blows upon his wife's head with a hatchet, and left her for dead. The scalp was badly lacerated and the parietal bone was fractured and depressed. The woman's consciousness was, however, only momentarily suspended, and she was soon able to arise from the ground and enter the litter in which she was carried to the hospital. Here she improved rapidly, and on the 2d and 3d of July was able to make a full and clear deposition of all the circumstances of the assault. On the 4th of the month, however, she suddenly became worse, and died on the 5th. On examination, one of the fractures seated in the parietal bone was found to be depressed and to project a quarter of an inch upon the inner surface of the skull. The membranes of the brain were uninjured, but underneath them the brain itself was softened, and pus was found covering the whole hemisphere. The medical gentlemen commissioned as experts to examine the case reported that the original violence was really the cause of death, but not necessarily so, because a timely use of the trephine might have prevented the disorganization which proved fatal. It was objected to this criticism that it was a mere matter of opinion extraneous to the proper functions of medical experts, and so the court held, declaring that the only question for decision was whether the blows inflicted by the prisoner were or were not the cause of death. He was convicted, and sentenced to death, and the sentence was confirmed by the court of appeal, but it was afterwards commuted by the king to imprisonment for life.

imperfect. The standard surgical authorities should be consulted in every case. Simple fissures of the skull, or separation of the natural sutures, are not without their gravity, for though seldom rapidly fatal, they often give rise to a slow effusion of blood, which having no external issue, extends over the surface of the brain and sinks between its lobes, thus causing a fatal compression of the organ.

§ 849. (3.) *Wounds of the substance of the brain* are not in themselves necessarily fatal. Many instances are recorded in which a portion of the brain has been lost, others in which it has been traversed by a bullet,(*y*) and others, again, in which a foreign body has remained in it for a considerable time, and the person has yet escaped with his life.

A man fired a gun, which burst and inflicted a large wound with fracture of the skull in the middle of the forehead. Consciousness and the senses were unimpaired, and no pain was felt. After the discharge of several fragments of bone and a small piece of iron, the wound healed. A month or six weeks later the man was sent to jail and put to hard labor, at which he continued for three weeks, when he complained of headache, and died rather suddenly at the end of a week. There was an abscess of the right anterior lobe of the brain, and between the dura mater and the right orbitar plate of the frontal bone was a piece of iron which weighed an ounce and a half.(*z*) In another case, a man had a knife-blade penetrating the brain to the depth of two inches without pain or characteristic symptoms, for twenty-four hours after he received the wound. He then became comatose, and so died.(*a*)

The following extraordinary case of recovery from the passage of an iron bar through the head, reported by Dr. Bigelow, Professor of Surgery in Harvard University, will illustrate the violence which the brain is capable of enduring. Phineas P. Gage was occupied in charging with powder a hole drilled in the rock, for the purpose of blasting. His assistant having neglected to cover the powder, as is usual, with sand, Mr. Gage, who was not aware of the omission, dropped the head of the iron upon the charge, to consolidate or "tamp it in." The iron struck fire upon the rock, and the charge exploded. The bar of iron was projected directly upwards in the line of its axis, passing directly through his head and high into the air. It was picked up at some distance, smeared with brains and blood. "From this extraordinary lesion, the patient has quite recovered in his faculties of body and mind, with the loss only of the sight of the injured eye." The weight of the iron bar was thirteen and a quarter pounds, its length three feet seven inches, and its diameter one and a quarter inches. The end which entered first was pointed, the taper being seven inches long, and the diameter of the point one quarter of an inch. The track taken by the bar was the following, as ascertained by an experiment upon an ordinary skull—the entering hole was under the zygomatic arch, encroaching equally upon its walls. "In the orbit, the sphenoid bone, part of the superior maxillary below, and a large part of the frontal above, are cut away, and, with these fragments, much of the spheno-maxillary fissure; leaving, however, the optic foramen intact about a quarter of an inch to the

(*y*) Med. Facts and Obs. vi. 91.
(*a*) Charleston Med. Journ. xv. 256.
(*z*) Lancet, Sept. 1858, p. 307.

inside of the track of the bar." The base of the skull upon the inside of the cranium presents a cylindrical hole of an inch and a quarter in diameter, and the calvarium is traversed by a hole, two-thirds of which is upon the left, and one-third upon the right of the median line, its posterior border being quite near the coronal suture. "It is obvious that a considerable portion of the brain must have been carried away; that, while a portion of its lateral substance may have remained intact, the whole central part of the left anterior lobe of the front of the sphenoidal or middle lobe must have been lacerated and destroyed. This loss of substance would also lay open the anterior extremity of the left lateral ventricle, and the iron, in emerging from above, must have largely impinged upon the right cerebral lobe, lacerating the falx and the longitudinal sinus."

Immediately after the injury the patient was slightly convulsed, but spoke in a few minutes. He was carried to an ox-cart which stood at a short distance, and rode in it, sitting erect full three-quarters of a mile. He got out of the cart himself, and, with a little assistance, walked up a long flight of stairs, into the hall, where he was dressed. He retained his senses and memory perfectly, and gave an intelligent and connected account of the accident.(*b*) Many other instances of surprising recoveries after wounds of the brain might be related, but the preceding case gives, we think, ample proof that, even in very extensive injuries of the cerebrum, with fracture, hemorrhage, and loss of substance, death is not the necessary termination.

§ 850. Wounds of the central portion and of the base of the brain are more uniformly and speedily fatal than those of the hemispheres. Wounds of the cerebellum are said to be constantly mortal. In whatever portion of the brain, however, the injury may be seated, or whether the organ be merely compressed by effused blood, the important fact is still applicable, that the individual may recover, apparently, from the immediate shock or consequence of the injury, and die unexpectedly from it afterwards. Thus a person has received a blow upon the head, causing extravasation of blood, and has been able to continue on his way apparently not much injured; he dies, nevertheless, a few hours afterwards, with symptoms of compression of the brain. The Prince of N—— was thrown from his horse, but felt himself quite well, and mounted his horse again a few hours afterwards. Before, however, he had proceeded far, he dismounted, complained of nausea, was seized with convulsions, and died comatose. No fracture was discovered, but under the dura mater, on the great falx and in the base of the cranium, there was found a considerable extravasation of blood.(*c*) In the Lancet for October, 1843, is related the case of a man who walked nearly a quarter of a mile after having been kicked on the head by a horse. Two or three fractures were found at the base of the skull. Months or even years occasionally elapse before the injury terminates fatally. A sailor received a blow upon the head, from which he soon recovered, and suffered no ill consequences, with the exception of a discharge from the ear. After a time, however, he suffered violent pain in the head, and had fever and convulsions. He was trepanned, and issue given to a large quantity of pus,

(*b*) Am. Jour. of Med. Sci. July, 1850. (*c*) Langenbeck.

with temporary relief. He died one year after the injury. The dura mater was covered with a purulent exudation, which extended also into the spinal canal.(*d*) The great orator and statesman, Daniel Webster, was thrown from his wagon May 6, 1852, and for a few minutes was insensible. On the 24th of the same month he delivered a speech to the people, nor then nor subsequently, up to the time of his death, was any mental disorder to be observed. He died on the 24th of October following, and on examination his brain was found covered with a thick layer of fibrin extending over both hemispheres, and which must have been the remains of an effusion of blood occurring at the time of the fall.(*e*) Where bullets have penetrated and remained in the brain, they often give rise gradually to fatal disorganization. Morand relates the case of a soldier who was wounded at the battle of Parma, in 1784. He returned on foot to Paris, and died nine and a half months after his wound. The ball was found between the bone and the dura mater. One-half of the cerebrum was destroyed by suppuration. Reich found in a soldier who had received a gunshot wound at the battle of Leipzic, and died eleven months afterwards, a portion of the brain in a gangrenous condition, and the ball adherent to the tentorium. He had suffered only from headaches and occasional epileptiform attacks.(*f*)

§ 851 The physician may be required to determine whether an extravasation of blood in or upon the brain is the effect of violence or disease, and if being due to the former, it has not been favored by the excitement of passion. Extravasation of blood, ensuing upon violence to the head, is perhaps most generally found over the dura mater, or upon the surface of the brain; that which arises from disease, in the substance of the brain or in the ventricles. Apoplexy is comparatively rare in the young and healthy, and it is hardly probable that in such persons a diseased condition of the vessels would be found occasioning the effusion. If, however, the blow has been inflicted upon an old person, and the extravasation is found in the cerebral hemispheres, there may perhaps remain a doubt whether a predisposition to the effusion did not already exist, and was awakened by the violence inflicted. If, however, it can be shown that the blow was sufficiently violent to produce this result, there can be no doubt, medically speaking, that it was the cause of it. Passion has, moreover, by the excitement of the circulation, a direct influence in causing an already weakened vessel to give way, and when a blow comes opportunely in, it would certainly perplex the most learned casuist to say which of the three causes of death was the effective one. The legal responsibility will be elsewhere set forth.

§ 852. (4.) *Wounds of the face* cannot in general be considered as dangerous to life. They are often followed by serious deformity and tedious sickness. The parts about the eye and this organ itself form the seat of more dangerous wounds. Blindness, without any apparent external alteration in the eye, has been produced by blows dividing or injuring the supra or infra-orbitar

(*d*) Denmark, Medico-Chir. Trans. vol. v. 1814.
(*e*) Jeffries, Am. Journ. of Med. Sci. Jan. 1853, p. 110.
(*f*) Henke's Lehrbuch, 19te. Auff. p. 246.

nerve.(*b*) Severe neuralgia may be produced by the same cause. Penetrating wounds of the orbit, it is evident, may reach the brain and cause fatal injury, and many instances of this form of injury are on record. Even where the orbitar plate of the frontal bone has not been broken, serious consequences may ensue from the spreading of inflammation from the eye and its appendages to the membranes of the brain. In comminuted fractures of the *nose* from external violence, the blow may have been so severe as to injure the ethmoid bone, in which case, the brain may readily become involved.

§ 853. 2d. *Wounds of the neck.*—In this region there are numerous structures and organs, the wounding of some of which is generally attended with fatal results. The neck being traversed by important bloodvessels and nerves, by the œsophagus, larynx, and spinal marrow, injuries which involve any of these parts, must be looked upon, in general, as serious. Hemorrhage resulting from the division of any of the large arterial trunks, as the carotid, lingual, or vertebral, is most rapidly fatal, and life is usually extinct before the requisite surgical aid can be rendered. The loss of blood from the internal jugular veins is equally fatal with that from the arteries, and in addition, the entrance of air into these vessels is considered to be frequently the cause of instantaneous death. A division of the principal nerves of this region or of the œsophagus, is usually accompanied with a destruction of other parts more essential to life, hence it is but seldom, as, for example, in punctured wounds of the throat, that the dangers from such injuries need be separately estimated.

Incised wounds of the larynx and trachea are not in themselves directly fatal, and more or less perfect recoveries are often made from them. But they may become fatal through the effusion of blood into the air-passages, or by subsequent inflammation. While in wounds of the carotids and jugulars death is often immediate, the fatal result in those wounds of the neck which do not implicate the bloodvessels is seldom so rapid. There are also many cases of wounds of the neck which may terminate fatally, although none of the above-named parts are wounded. Such are those in which the cellular tissue becomes inflamed, in consequence of which abundant and exhausting suppuration takes place.

A case is related by Dr. Simeons, in which an old woman was struck on the neck with a pewter soup-ladle; she died in a few hours afterwards, asphyxiated. Upon examination after death, blood was found extravasated under the muscles of the neck, and into the anterior mediastinum from a rupture of the external jugular vein. The cricoid cartilage, and some of the rings of the trachea were broken, by which injury the size of the respiratory tube was necessarily much diminished.(*c*) The skin was not broken.

A division of the *œsophagus* is not only in itself almost always fatal, if complete, but because also, being situated behind the trachea, it can hardly be

(*b*) Hippocrates was aware of this fact. He says: "Visus obscuratur in vulneribus supercilii et paulo altius, prout autem vulnus recentius est, plus vident, cicatrice vero diutius persistente plus excæcantur." Anfangsgr. der Wundarzneik ii. § 320. In a case where the amaurosis resulted both from concussion and from laceration of the eyebrow with a cricket-ball, the loss of sight was temporary, vision being gradually restored under the use of mercury. Med. Times & Gaz. Sept. 4, 1852.

(*c*) Henke's Zeitschrift, 1848, H. i.

incised without the important bloodvessels of the neck being injured. A case of recovery from a wound dividing the larynx and œsophagus to the posterior wall of the latter is given by Dieffenbach, and an example of complete restoration to health after an *entire* division of both of these passages with a pruning-knife is related by Boey.(*d*)

Dr. Ryan related to the Medical Society of London a case of suicide, in which, after several ineffectual attempts to divide the thyroid cartilage, a man had succeeded in inflicting upon himself a wound five inches in length, between this cartilage and the os hyoides, dividing completely the pharynx to the vertebræ. The fourth vertebra was roughened by a cut, and there was another cut in the intervertebral cartilage. Some branches of the carotid arteries were divided, but neither these vessels, the jugular veins, nor the sterno-mastoid muscles were injured.(*e*)

As Dr. Ryan properly remarks, "a person wonders at the possibility of a wound of this sort without cutting the larger vessels; and had the occurrence taken place in a lonely dwelling, where no third party was present, it might become a serious question, particularly under unhappy domestic discussions, whether the wound was self-inflicted, as its extent, the two incisions on the thyroid cartilage, the two on the vertebra, and that on the intervertebral cartilage would argue a determination of purpose and strength of wrist which fall to the lot of few."

§ 854. 3d. *Wounds and injuries of the spine.*—The danger to life in wounds that interest the spinal marrow is exceedingly great; indeed, they are almost uniformly fatal, either immediately or indirectly. These injuries are, however, more rare than those of other parts of the body, and are often the result of casualty, such as a fall from a height, or being crushed under a heavy weight. In many cases of death from falls upon the seat, the spinal marrow will not exhibit any material lesion. In such cases it is supposed to have suffered concussion, by which some elementary change in its structure has been produced inconsistent with the maintenance of life. In concussion of the spine, death may be almost immediate, but usually it approaches gradually.

Any substance compressing the spinal marrow will interfere with or arrest its functions below the point of pressure. Hence the height at which the injury has been inflicted has an important bearing upon its gravity. If the compression be above the origin of the pneumo-gastric nerves, death is immediate, owing to the sudden suspension of respiration. Below this point a wound or injury is not inconsistent with the maintenance of life for a considerable period. A division of the spinal marrow at any part interrupts, of course, if complete, the functions of the part below it more effectually than compression. Dr. Staub gives an instance of immediate death from a wound of the spine by a knife, between the atlas and epistropheus; the spinal marrow was divided almost completely in the middle, between the corpora olivaria.(*f*)

Another rare instance of injury of the spine by criminal violence is related by Dr. Simeons, of Mayence. A robust young man, twenty-six years

(*d*) Reference to both of these cases may be found in Henke's Lehrbuch, p. 254.
(*e*) Lancet, Am. ed. 1852, p. 218. (*f*) Henke, Zeitsch. Bd. xxxv. S. 406.

of age, quarrelled with three others, who fell upon him, threw him on the ground, and after having kicked and dragged him for some time, finally left him helpless. He was soon found, and carried into a neighboring house. He survived two days, completely paralyzed, but retaining his consciousness. The fifth cervical vertebra was found to be completely separated from the sixth, all the ligaments being torn; the whole of the spinal canal was filled with partly coagulated blood, and the muscles in the vicinity of the injury much infiltrated. No other injury of importance was detected.(*g*)

"A bone-setter, named Richard, famous in the neighborhood of Napoléon Vendée, but still more famous by having been fined five francs, which made him a martyr, and increased his practice fivefold, was consulted on June 4th, 1853, by a farmer of the commune of St. Denis, named Lachavasse, who complained, after a heavy fall, of violent pain in the neck. The bone-setter, meeting him, made him enter a neighboring cottage, and said that he would soon put his neck right. With both hands he seized the patient's head, and by a rapid motion from left to right he three times turned the head over the shoulder. At the third time a crack was heard, and the bone-setter exultingly exclaimed, 'It is done; the neck is reduced.' But at this very instant the patient was seized with paralysis of the arms and legs; his speech became very difficult; he complained of violent pain, and died the next day, firmly convinced of the skill of the operator, and asserting to the last that his neck was properly set. Examination of the body showed an effusion of blood at the level of the second and third vertebræ, the ligaments between which were stretched and torn; there was another effusion between the cerebellum and the base of the skull, evidently arising from lesion of the cord and its membranes."(*h*)

In cases where the *vertebræ are fractured*, the injury done to the spinal marrow may be due to the constriction it undergoes from pressure, its irritation by a spicula of bone, or to the effusion of blood upon it. To whichever cause it may be attributed, the ultimate effect is, in the majority of cases, fatal. It is not unimportant to observe that sudden death may take place from the spontaneous luxation of the second cervical vertebra; the odontoid process, which maintains it in its place, being liable to caries and consequent sudden fracture. This circumstance, as well as the existence of caries of the spine in any other and more usual position, may, in some cases of death after ill usage, explain the facility with which death has come on. Hence it is of great moment that, in case of death from supposed injury to the spine, the absence of this disease should be carefully ascertained. Sir Astley Cooper mentions the case of a woman in the venereal wards of St. Thomas's Hospital, who, while sitting in bed, eating her dinner, was observed to fall suddenly forward. The patients, on hastening to her assistance, found that she was dead. At the autopsy it was ascertained that the dentiform process was broken off, and the head, in falling forwards, had forced the root of the process back upon the spinal marrow, which occasioned her instant death.(*i*)

(*g*) Ibid. Bd. lvi. H. 3, p. 131. (*h*) Rév. Thérap. du Midi.
(*i*) Dislocations and Fractures of the Joints, p. 463.

Another case of extensive disease of the cervical vertebræ, with death from fracture of the odontoid process, is admirably reported by Dr. Buckminster Brown, of Boston.(*j*)

§ 855. 4th. *Wounds of the chest.*—Wounds which do not penetrate the cavity of the chest, or which are not accompanied with very great violence, offer but little gravity. In the latter case, however, one or more of the ribs or the sternum may be fractured, a complication which at once enhances the importance of the injury. The same force which has produced the fracture may also cause serious disturbance of the subjacent organs and their rupture. The broken ends of the bones frequently also cause hemorrhage, a disorganization of the lungs, or wound of the heart. The danger of penetrating wounds of this cavity cannot, of course, be too highly estimated, although it is, perhaps, less than in similar wounds in the abdomen. From the great vascularity of the organs contained in the chest, and from the fact of their functions being the aëration and the propulsion of the blood, the immediate danger of any injury to them lies in the sudden and abundant arterial hemorrhage, by which the heart and the system generally are deprived of their necessary vital stimulus, and the natural play of the apparatus of respiration and circulation is mechanically obstructed. The hemorrhage in wounds of the chest is almost entirely internal.

§ 856. 5th. *Wounds of the lungs* cannot receive any detailed consideration. The chief point of interest in this connection is the fact that they may not prove fatal until a considerable period after their infliction. This is especially the case with gunshot wounds of these organs, in which, if the larger vessels have escaped laceration, the foreign substances introduced into the wound may continue for many months and years to be a constant source of distress, and be the source of an ultimately fatal disease.

A question may sometimes arise as to the ability for motion after severe wounds of the chest. No general rules can be laid down upon this point, but in illustration of the possibility of locomotion after severe injuries to the chest, and the fortunate issue of some which are of apparently the most formidable character, we adduce the following case, reported by Mr. Gallway, Surgeon in the Royal Artillery.(*k*)

"A gunner and driver of the royal artillery had made a murderous attack upon his sergeant with a bayonet, whereby he inflicted two wounds, happily superficial only, upon one leg and arm. Foiled in his efforts of greater success by the seasonable arrival of some other soldiers, the culprit rushed through the barrack-square to escape his pursuers, when the sentry on duty at the gate interposed himself with his carbine, in the attitude of 'charge bayonets' to obstruct him. The consequences of this movement to the other were that as he was rushing through a narrow passage with an impetus which he could not at the time control, he threw himself (not premeditately, it will be understood), with great force upon the bayonet of the sentry, which entered his body an inch to the left of the ensiform cartilage, and passing through the abdomen, emerged by its point on the left of, and close to the spinal column, some inches

(*j*) Am. Journ. of Med. Sci. Jan. 1853.
(*k*) Med. Times and Gaz. May 6, 1854.

lower down. When I reached the scene of action, within two minutes after, I found the subject of this wound sitting upon a form in the guard-room, as insensible to any effects from the injury as he was unconcerned at his crime. I could not, therefore, at first believe the statement of his comrades, who told me what had happened, although the bayonet was handed to me *bent* by the violence to which it had been exposed; but on stripping the wounded man, I discovered the two openings of entrance and exit of the bayonet, corresponding, in form and diameter to those which the different parts of the weapon would have occasioned. Added to this, the bayonet was withdrawn from his body by a non-commissioned officer, upon whose testimony I could rely; and what is more, this withdrawal was witnessed by a crowd of other soldiers around. Now this desperate character marched, in a quarter of an hour afterwards, to the hospital, *three-quarters of a mile* distant; and at the end of a fortnight was discharged from the same, to be placed upon trial for his life. The day after his admission his urine was a little bloody; and subsequently there was a general anæsthesia of the walls of the thorax and abdomen, which lasted but for awhile. With these exceptions, the injury was not followed by a symptom, nor did the subject of it require a dose of medicine for his recovery. To the circumstances of this affray having been enacted *before* dinner, I am disposed to attribute much of the immunity from evil which this ruffian enjoyed. Had the stomach been full, it is not easy to conceive that a bayonet could have travelled through such a track of vital organs, without endangering one or more. The reader may be interested to know that the life of this soldier was spared, transportation for the rest of his days being the sentence of his court-martial."

One of the most extraordinary instances of recovery from a wound traversing the whole thorax, is related in the Abeille Médicale, 15 Jan. 1855, from the Journ. de Méd. de Bordeaux. A young soldier fell from a cherry-tree upon an upright stake, such as is used in the vineyards. It entered the left side between the seventh and eighth ribs, and the pointed extremity projected on the other side between the fourth and fifth ribs, at the posterior part of the axilla, and to the length of a foot and a half. The young man retained his consciousness and intelligence, did not appear to suffer much, and after one end of the stick had been sawn off, was conveyed to the hospital. There the stake was extracted without difficulty, and it was found that it had carried part of the shirt with it. A few bleedings, and an antiphlogistic treatment sufficed to remove some inflammatory symptoms which arose, and in three weeks the patient was entirely convalescent.

In 1831, a sailor named John Toylor, aged twenty, was guiding the iron pivot of the trysail mast into the main boom, when the tackle broke, and the mast, which was thirty-nine feet long, and weighed 600 lbs. descended upon him, tearing off half his scalp, knocking him down, piercing his chest obliquely, and fixing him to the deck. While thus transfixed he felt no pain. He recovered entirely, returned to his duties as a sailor, and for twenty-seven years enjoyed, without interruption, the most excellent health.(*kk*)

(*kk*) Lancet, Jan. 1859, p. 45.

§ 857. 6th. *Wounds of the heart.*—When the cavities of the heart have been opened death is generally the immediate, as it always is, sooner or later, the certain result. When the cavities of the heart have not been penetrated but their walls alone injured, the danger is still very great, not so much from the loss of blood as from its compression of the organ and the subsequent inflammation. This is particularly to be dreaded when the coronary arteries have been wounded. No case has yet been recorded in which a person has recovered from a wound penetrating the cavities of the heart. One of the most singular instances of apparent recovery from a gunshot wound of the heart (if it can be properly so called), is contained in the "Notes of Observations at the Field Hospital of Rangoon." Here a soldier survived his wound two and a half months, emaciating, however, rapidly, although he was able to walk about. On dissection, the course taken by the ball was traced through the pleura and lung, by a cartilaginous canal of condensed tissue, to the root of the lung, where all trace of it was lost. On opening the pericardium, however, a hard body was felt in the apex of the heart, which, when the cavity was laid open, proved to be a *musket ball* lying at the apex of the left ventricle, partly covered by a thin coating of white lymph. There was no injury to the heart nor evidence of diseased action. The heart was preserved in spirits and sent to Calcutta. The only manner in which the ball could have found its way to the situation in which it was found, must have been through one of the pulmonary veins, as there was no trace of its passage through the substance of the heart. A case which would seem to confirm this idea is mentioned in Schmidt's Jahrbuch, vol. lxxii. p. 328. A man was struck in the back by a bullet which entered his thorax, and caused his death in twenty minutes. On dissection it was found that the ball had entered over the sixth rib behind, grazed the lung, and wounded the pulmonary artery. But it could not at first be discovered. It was soon found, however, in the right ventricle of the heart, where it had fallen by its own weight after penetrating the pulmonary artery.(*l*)

The period at which wounds of the heart prove fatal, varies in different cases. The reason of this variation is found not only in the extent and locality of the wound, but in the fact that the point of the weapon or the bullet may have remained in the walls of the heart, and thus the sudden loss of blood

(*l*) An instance of long survivance after an injury of the heart of an extraordinary character may be found in the Transactions of the Provincial Med. and Surg. Association, vol. ii. p. 357: A boy ten years old, in discharging a wooden gun, was wounded in the thorax by a plug of wood about three inches long, which he had used to form the breech of this apparatus. It could not be found. He walked about for a fortnight and said he was well, but finally wasted away and died in five weeks and two days after the accident. On dissection the stick was found in the right ventricle, forcing itself between the columnæ carnei and the internal surface of the heart, and incrusted with a thick coagulum. No wound could be discovered in the heart or pericardium. Hence it is supposed that the stick first entered the lung, and afterwards passed into the vena cava and thence was carried by the stream of blood first into the right auricle, and then into the right ventricle.

A man, whose case is related by Prof. Malle, received a gunshot wound near the left nipple, he fell instantly in syncope, but afterwards revived, and lived 42 days, when he died of erysipelas of the leg. A piece of wood, "as large as a full-sized writing quill, was found transfixing the left ventricle and the septum, and projecting into the cavity of the right ventricle."—*Brit. and For. Med. Chir. Rev.* vol. x. p. 46.

have been mechanically prevented. A coagulum of blood may, in some cases where the wound is not extensive, cause the prolongation of life for a similar reason. Should the patient escape the fatal results of inflammation ensuing upon such a wound, he is nevertheless exposed to sudden death by the removal of this mechanical obstacle to hemorrhage. Ollivier d'Angers found, out of twenty-nine cases collected by himself, that only two proved fatal within forty-eight hours, and the others in from four to twenty-eight days.

Dr. Trugien, of Portsmouth, Va., observed a case in which a young negro man was stabbed in the chest on Monday night and continued to do well until Saturday morning, at which time, contrary to orders, he went out, and used other improper exertion, in consequence of which he died. The wound, which had healed externally, perforated the cartilage of the fourth rib, passed through a part of the anterior wall of the right ventricle, without opening it, and thence into the left ventricle. About a pint and a half of blood, partly fluid and partly coagulated, was found in the pericardium. The wound in this membrane had completely cicatrized, and *two-thirds* of that in the heart.(*m*)

In a case reported by Dr. Bowen, the right ventricle was perforated a half an inch to the right of the septum, and through the septum the wound extended into the left ventricle, at the orifice of the aortic valves; the wound was lined with coagulable lymph. The patient had survived his injuries eleven days and walked about; he died suddenly from hemorrhage into the pericardial and pleural sacs.(*n*) Muschner reports a case of penetrating wound of the heart which proved fatal on the fourteenth day.(*o*)

Stadelmayer gives a case in which not only the heart was penetrated, but the stomach also, and an intercostal artery wounded, when death ensued on the 5th day.(*p*) These cases might readily be multiplied, but enough has been said to show that wounds of the heart, even when the left ventricle has been penetrated, are not of necessity immediately fatal.(*q*)

(*m*) Am. Jour. Med. Sci. July, 1850. See also Am. Jour. Med. Sci. for May, 1829, p. 263, in which there is a notice of a case of gunshot wound of the chest, in which the patient, a negro boy aged 15, lived 67 days after the accident, and on *post-mortem* examination, three shot were found lying loose in the cavity of the right ventricle, and two in the right auricle.

For the case of Wm. Poole (pugilist), see N. York Med. Times, April, 1855. In the same Journal for May, 1855, will be found "Statistical Observations on Wounds of the Heart and on their relations to Forensic Medicine, with a Table of Forty-two Recorded Cases." By Samuel S. Purple, M. D.

(*n*) Am. Jour. Med. Sci. Oct. 1849. (*o*) Ver. Deutsche Zeitschrift. III. 1. 1848.

(*p*) Med. Correspond. Bl. Bayer. Aertze. No. 318.

(*q*) A case of some interest in reference to the power of surviving a severe wound of the cavities of the heart occurred at Guy's Hospital in February, 1854. An Italian, æt. 38, discharged a brace of pistols into his chest on the left side. The man was brought to the hospital, was able to converse on his condition, and lived one hour and fifteen minutes after the infliction of the wound. After death it was found that one bullet had perforated the pericardium, entered the right ventricle, and after traversing the septum of the ventricles, made its exit from the heart at the junction of the left auricle with the ventricle. It traversed the upper lobe of the left lung, and was found fixed in one of the dorsal vertebræ. The second bullet perforated the left ventricle, and then traversed the left lung. The wound was of such a nature, that at every contraction of the ventricle, the opening must have been closed so as to arrest the flow of blood. This man, owing to severe suffering, rolled about the floor and was with difficulty kept quiet. It will be seen that in this case there were bullet wounds traversing completely the cavities of the heart, yet the man could talk and exert himself, and he actually survived their infliction one hour and a quarter."—*Taylor's Med. Jur.* 5th ed. p. 308.

§ 858. Death is usually sudden, but does not always follow immediately upon the receipt of the wound, although the first effects are exceedingly alarming. In nearly all the cases, where the wound seriously implicates the heart, the individual staggers a few paces, or falls instantly in a state of syncope. Exceptional cases have, however, been reported in which, even where the wound has been found subsequently to have penetrated the cavity of the heart, the person has nevertheless retained his consciousness and power of locomotion for a short period after receiving it. Thus in the case of Mrs. Hamilton, murdered by Clough in 1833, at Bordentown, by repeated stabs with a dirk, three entered the left ventricle, and seven the lung. She walked some distance down stairs after this, and held some conversation, but soon fell, and died in fifteen minutes.(*r*) In a case related by M. Boyer, a young man who received a knife wound in the left ventricle, walked about for ten minutes and did not die until six days afterwards.(*s*) In another, where the *right* ventricle was wounded, the man ran up stairs, but died in half an hour.(*t*) Mr. Baird relates a case in which a man continued fighting and ran 150 yards after receiving two penetrating wounds of the chest, and one of them penetrating the left ventricle.(*u*) In an instance given by Dr. Babington, a man walked twenty-five feet after a bayonet-wound which pierced the peritoneum, colon, stomach, left lobe of liver, diaphragm, pericardium, right ventricle in two places, and the lungs.(*v*)

§ 859. *Rupture of the heart.*—This occasionally results from external violence, generally of an accidental nature, as from the falling of a heavy body upon the chest. The cause of the occurrence is usually too obvious to require any explanation here. The only case in which rupture of the heart may become the subject of medico-legal investigation, is when a person engaged in a quarrel dies suddenly after receiving a blow upon the chest, and this lesion is found after death. The case is one which evidently admits of discussion, belonging to that category of cases in which death already impending is apparently anticipated by external violence. The fact of the heart being in a diseased condition favoring its rupture, such as fatty degeneration, ulceration, aneurismal dilatation, must be ascertained, as well as the force of the blow inflicted. It must be remembered, however, that the rupture may occur spontaneously in these morbid conditions, even when the person is in a tranquil state, but that a fit of anger greatly increases the probability of its occurrence. Hence a blow upon the chest may really have had nothing to do with causing the rupture, this having been due entirely to the strong excitation of a weakened heart. Rupture of the heart from disease usually takes place in the left ventricle, except where the disease is ulceration, when of course it may take place at any portion. The heart is also ruptured sometimes by great physical exertion, in which case the left auricle is apt to give way. Violent emotions of any kind are enumerated among the causes of this accident, but it is

(*r*) Beck's Med. Jur. vol. ii. p. 331.
(*s*) Bost. Med. and Surg. Jour. vol. ii. p. 209.
(*t*) Am. Journ. Med. Sci., N. S. vol. xxvi. p. 85.
(*u*) Edinb. Month. Jour. vol. iii. 1843.
(*v*) Med. Records and Researches. Lond. 1798.

probable that they are only effective when the heart is already weakened by disease. The same may be said of rupture of the *aorta*. Wounds of this and the other great vessels of the chest are inevitably mortal, if the opening is not very slight.

§ 860. 7th. *Wounds of the abdomen.* (1.) *Superficial wounds.*—A severe blow in the epigastric region has in several instances sufficed to produce immediate death, and this may result without any external or internal mark of violence. Death in these cases has been generally attributed to the violent impression made upon the solar plexus of nerves. Blows upon other parts of the abdomen not accompanied by any solution of continuity in the integuments may prove serious or fatal by causing peritoneal inflammation or the rupture of some organ in this cavity;(*vv*) but contused and lacerated wounds which are not attended with these effects may still give rise to serious consequences from the formation of fistulous communications. Incised wounds also which do not penetrate the cavity, may nevertheless prove fatal from a wound of the epigastric artery.

§ 861. (2.) *Penetrating wounds of the abdomen* usually prove fatal by causing inflammation of the peritoneum, either as a direct effect of its division or indirectly from the effusion of blood and the entrance of air. When the omentum or mesentery is wounded, death usually takes place by hemorrhage but sometimes from inflammation and gangrene. Wounds of the *stomach* and *intestines* prove fatal by hemorrhage, or by inflammation resulting from the effusion of the contents of these organs into the peritoneal cavity. The natural tendency of these injuries is to death, although by timely and skilful surgical treatment many cures may be accomplished.(*w*) A most remarkable case is reported by Dr. Nicholls, of a man sixty-nine years old, who attempted suicide by thrusting a red-hot poker into his abdomen about an inch and a half above the navel. There was no hemorrhage, and a partial protrusion only of omentum, which sloughed off. In three weeks the wound had nearly healed, when the patient tore away the dressings, enlarged the wound, and cut or tore away a portion of the omentum, and a piece of the colon thirty-two inches long. He survived these horrible injuries eight days.(*ww*)

8th. *Wounds of the liver* vary in importance according to their extent and situation. Superficial wounds of this organ have much less gravity than those which penetrate its substance deeply, and interest the large arterial and venous trunks which traverse its lower surface. If the gall-bladder is wounded, violent peritonitis usually results from the effusion of bile into the peritoneum. Incised and punctured wounds of the *spleen* may produce death by hemorrhage,

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(*vv*) Numerous examples exist of fatal rupture of the spleen from comparatively slight causes. The reader is referred to the following recent cases: Archives Gén. July, 1854, p. 85; Barth, ibid. Feb. 1855, p. 235; Lancet, March, 1859, p. 329; ibid. July, 1859, p. 8; Lopez, N. Amer. Med.-Chir. Rev. iv. 286; Adams, ibid. p. 756; and Charcot, Gaz. des Hôpitaux, 1858, reports that a rupture of the spleen was found in a new-born child produced by a fall of the mother some weeks before.

(*w*) Vid. South's Chelius' Surgery, vol. i. p. 522, for several cases. For a case of speedy recovery after a penetrating wound of the stomach made by a bowie-knife, see The Stethoscope, June, 1855. (Richmond.) From Charleston Med. Journ. and Review.

(*ww*) Dublin Med. Press, Oct. 4, 1854.

and this is the more likely to be the case when this organ is abnormally enlarged. Wounds of the *kidneys* usually prove fatal by the effusion of urine and consecutive inflammation. It is hardly necessary to mention that wounds of the great abdominal vessels are unavoidably fatal.

§ 862. 9th. *Wounds of the diaphragm.*—Mr. Guthrie says that wounds of the diaphragm rarely if ever close, but remain open during the rest of the life of the sufferer, ready at all times to give rise to a hernia, which may become strangulated, and thus destroy life. Among other cases given by him, the following is interesting. On the day preceding the battle of Fuentes d'Onor, in 1811, Sergeant Barry was wounded in the chest. The ball entered close to the nipple of the left breast, and passed out at the back, between the eighth and ninth ribs. The anterior opening of the wound soon healed, but the posterior did not for a considerable period, when he became affected with such a severe cough, with expectoration, that his medical attendant deemed it proper to reopen it. The symptoms were relieved, and portions of his shirt and jacket were discharged. After this his health improved so rapidly as to enable him soon to rejoin his corps; the wound in the back repeatedly opened and healed again, generally at intervals of twelve or fourteen months, but for five or six years it ceased to do so. He died of another disease, twenty-two years after the receipt of this wound. On examination, the whole of the stomach and the greater part of the transverse arch of the colon were found in the left cavity of the chest, having passed through an opening in the diaphragm about three inches long in a transverse direction near the centre. The wound in this instance was through the muscular and not through the tendinous part.(*x*) Slight penetrating wounds of the diaphragm, Dr. Taylor says, will heal, instances of the fact being upon record.

§ 863. 10th. *Wounds and ruptures of the bladder.*—The consideration of these has considerable practical importance, from the fact that the bladder is occasionally ruptured spontaneously from over-distension. If a person have received a violent blow or kick upon the lower part of the abdomen, and the bladder after death is found ruptured, the defence may deny that this was caused by the blow. To the medical mind this line of defence cannot but appear very precarious. Spontaneous rupture of the bladder is extremely rare. A case is reported of this accident to a man, which could only be attributed to his suddenly jumping from a table on which he had been sitting.(*xx*) In another case the same accident resulted from a violent fall upon the buttocks while the bladder was distended.(*y*) The well-marked symptoms of distension can hardly be concealed,(*yy*) and the cause of it would certainly be found after death; hence, if rupture has followed a blow, the dependence of one upon the other is, in the absence of undoubted evidence of the pre-existence of over-

(*x*) Lancet, April 16, 1853. Vid. also Lancet, April, 1852.

(*xx*) Edinb. Med. Journ. ii. 847. (*y*) Ibid. iv. 811, 844.

(*yy*) Nevertheless, Mr. Hird related an interesting case at the Medical Society of London, which is quoted by Mr. Coulson, to show that the patient may walk several miles after complete rupture, and for a time exhibit no symptoms which attract more than ordinary attention. (Brit. and For. Med.-Chir. Rev. July, 1852.) An analysis of seventy-eight cases of rupture of the bladder is published by Dr. S. Smith in the New York Journal of Medicine, new series, vi. 336.

distension from natural causes, as satisfactory and conclusive as possible. In the words of Dr. Taylor, "If a man were in good health prior to being struck —if he suddenly felt intense pain, could not pass his urine afterwards, and died from an attack of peritonitis in five or six days—if after death the bladder was found lacerated, but this organ and the urethra were otherwise in a healthy condition, there can be no doubt that the blow was the sole cause of rupture and death. In such a case, to attribute the rupture to spontaneous causes would be equal to denying all kind of causation." Rupture of the bladder is usually a fatal injury, producing death by peritonitis; but if it occur in the anterior portion, which is not wholly covered by the peritoneum, recovery will sometimes occur. Thus, in a case reported by Mr. Syme,(*z*) a boy ruptured the bladder by falling upon two upright stakes of wood, in jumping over a fence. Under an appropriate and skilful treatment he finally got well.

There is rarely any external injury to correspond with the violent internal disorganization. In a case where the urethra was completely torn across by external violence, there was no external wound—not even an abrasion of the skin.(*a*)

§ 864. The occasional immunity from serious effects in wounds of the abdomen of apparently the most dangerous character, is well illustrated by two cases, very similar to one another, which have occurred in this country. Dr. Sargent, of Worcester, Mass., reported to the Boston Society for Medical Improvement, a case which occurred in his practice. A woman, about 37 years of age, in sliding down from a hayloft, impaled herself upon the handle of a pitchfork, which passed in at her vagina to the length of *twenty-two* inches, when her feet struck the ground. The handle was immediately withdrawn. Dr. S. saw the handle of the fork, which was rounded a little larger at the end than elsewhere, perfectly smooth, two inches in diameter, and showed distinctly the stain of blood up to an abrupt line, twenty-two inches from the end. It was supposed that the instrument perforated the upper end of the vagina on the left side, passed between the uterus and rectum, in front of the kidney, behind the spleen, and between the diaphragm and false ribs, peeling up the costal pleura till it reached the scaleni muscles. The subsequent history of the case, which showed a fracture of the first rib, proved this diagnosis correct. The woman recovered in a few weeks entirely.(*b*) Another case is reported by Dr. Bryant, of Mississippi, of a negro woman who leaped from the height of ten feet and alighted upon a tobacco stick, which had been driven firmly in the ground, and was concealed by some loose fodder. The stick was four and a half feet long and one inch square. It entered the vagina, penetrated its upper part, and traversed the abdomen to the eleventh or twelfth rib. The stick was smeared with bloody mucus to the extent of twelve and a half inches, and its termination was abrupt and distinct. "It was quite clear that the stick was not stained by the fluid running down upon it." This woman also recovered, after losing a considerable quantity of blood.(*c*)

(*z*) Edinb. Month. Journ. p. 332.
(*a*) Neill, Hospital Cases. Med. Examiner, Aug. 1854.
(*b*) Am. Journ. Med. Sci., Oct. 1853, p. 355.
(*c*) Ibid. p. 399. The sequel of Dr. Sargent's case is given in the Boston Med. and Surg. Journ., Dec. 1856, p. 387, and several analogous ones are there referred to by

§ 865. 11th. *Wounds of the genitals.*—In the male these are usually self-inflicted, and instances of the kind most usually occur among the insane. The danger to life is great if the injury have been inflicted with a sharp instrument and is of considerable extent; the hemorrhage being profuse, and not easily controlled. Impotence may be the result of an imperfect mutilation.

Upon the female, on the contrary, wounds of the genitals are generally due to the violence of others. This appears to have been a favorite mode of committing murder in Scotland, probably from the facility with which it would be overlooked. Several cases of the kind have been recorded, in which criminal trials took place. The latest are the trials of Andrew Paterson and Wm. Hetherton, charged with the murder of their wives by wounding them in the genital organs. In one case, the woman had been recently confined. A wound an inch and a half long was found in the vagina, supposed to have been inflicted with the iron hold-fast of a sign-board. In the other, the woman was in the eighth month of her pregnancy. There was found a lacerated wound of the genitals immediately on the left side of the urethral orifice. There were numerous contusions on both thighs and in the neighborhood of the vulva; the injuries were attributed to kicks.(*d*)

Occasionally, as has before been mentioned, there may occur spontaneous hemorrhage from a ruptured vein at the root of the labia; hence the necessity of establishing the presence of marks of violence, such as contusions, abrasions, &c. In a case, however, related in the Lancet, a woman received a kick in the private parts from her husband, while she was stooping, and died within an hour, from hemorrhage. The left root of the clitoris was crushed, and there was a wound on the edge of the vulva about an inch long, but otherwise *no* contusion or marks of violence.(*e*) Examples of accidental wounds of this description have already been given (Chap. II. § 810). Lacerated wounds of the uterus, produced by the throes of parturition, are not necessarily fatal; and there are even cases of recovery after the complete avulsion of this organ and its appendages by an ignorant or brutal accoucheur.

CHAPTER II.

BURNS AND SCALDS.

I. How classified, § 866.
II. Appearance of burns upon dead body, § 867.
III. Wounds upon the burned, § 870.
IV. Effects upon the system, § 872.
V. Post-mortem appearances, § 873.

§ 866. I. *How classified.*—The effect produced upon the *living* person by a heated body, varies, according to the nature of the vehicle by which the heat

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Dr. Coale. Dr. Maynard has reported a fatal case in a woman who, in sliding down a hay-mow, fell upon a hay-hook. (Ibid. Aug. 1857, p. 29.)

(*d*) Ed. Month. Jour. June and Sept. 1848. For other cases, see Watson on Homicide, p. 104, and Lond. Med. Gaz. xliv. p. 813.

(*e*) Lancet, Oct. 1846.

is applied. Thus, boiling liquids produce scalds, which are serious in proportion to the density of the liquid; solids in a state of ignition, burns which are deep and extensive in proportion to the elevation of temperature and the duration of contact; while gases, in a state of combustion or flame, consume and destroy the living structure more completely than either of these other agents. The injuries produced by certain chemical substances of a caustic nature also receive the name of burns, in ordinary language, although an elevated temperature is not required for their effects. The ordinary division of burns, according to their gravity, is that made by Dupuytren :—

1st degree. Superficial inflammation of the skin, without the formation of blisters.

2d. Vesication. The serum contained in the blisters is sometimes clear, sometimes opaque and of a yellowish white color, or again, sanguinolent. If the cuticle have been removed, the true skin is found granulated, of a vivid red, or secreting pus.

3d. Destruction of the external surface of the true skin. That portion which has lost its vitality is seen in the form of eschars, which are soft and yellow if made by a liquid, but hard and brown, or black, if made by a heated solid or burnt with flame. The skin surrounding them presents the character of burns of the first or second degree, being red and blistered. This form of burns leaves scars, which are on a level with the skin, or nearly so, and are white and shining.

4th. Disorganization of the whole thickness of the skin. These burns differ from the preceding only in the greater thickness of the sloughs. The scar which is left is characteristic, being sunk below the level of the skin, and irregular, radiated, and puckered.

5th. Not only the skin, but the subcutaneous cellular tissue, and a portion of the muscles underneath are destroyed. The injury is graver in its character than the last, although the external appearances are not strikingly different.

6th. Complete carbonization of the burned part.

§ 867. II. *Appearances of burns made upon the dead body.*—Orfila says that *vesication* manifestly denotes that the burn was made during life. According to Devergie, if boiling water or a red-hot iron be applied to the skin of a person, ten minutes after death, neither *redness* nor vesication will be produced, and it is not possible to mistake a burn made after death for one which was made before it. Dr. Christison made six experiments, with a view of satisfying himself as to the distinction. He says that it is evident from these that the application of heat, even a few minutes after death, causes no effects which can be mistaken for those induced by the vital reaction. In one case, in which a young man lay in a hopeless state of coma from poisoning with laudanum, a hot iron was held on the outside of the hip-joint, and half an hour after death, a red-hot poker was applied to three places on the inside of the arm. It is stated that vesications were formed in both instances, those made during life contained serum, and those formed after death *air*. Dr. Taylor says that he has performed many experiments on the bodies of infants, eighteen and twenty hours after death, both with boiling water and

heated solids; but that, in no case, did he observe any kind of vesication to follow at that period. The skin became shrivelled, and was partly destroyed by the heat, but no blisters were produced. Dr. Casper made four experiments with the same result. It is stated, however, by MM. Leuret and Champouillon, and also by Dr. Wright, of Birmingham, that serous blisters may be produced after death in anasarcous subjects. In M. Leuret's experiment, the blister contained an abundance of reddish-colored serum. In those of the other two observers, the serum was not tinged with blood. In one of Casper's experiments, however, a flame was held close to the dropsical scrotum of a dead body; the skin nearest the flame shrivelled up and acquired a shining silver-gray surface, but no blister was raised. We think, however, it may be fairly objected to this and the preceding experiments of Casper, alluded to, that the degree of heat employed was much beyond that necessary to produce vesication. In two of the other three experiments, cotton wadding soaked in turpentine was placed in contact with the skin and lighted. In one case it was allowed to burn *four* minutes, in the other *three and a half*. In the third experiment, the flame of an oil lamp was held *three* minutes in contact with the back of the foot. In each case the skin was superficially roasted. The result might, perhaps, have been different had a less intense heat been employed. Casper also alludes to a fact of some importance in this connection. He says that it is a common practice to drop burning sealing-wax upon the pit of the stomach immediately after death, with the hope of reviving the defunct, but that in the large number of bodies he has seen, in which this unintentional experiment had been performed, not one presented a trace of vesication in consequence. It may therefore, we think, be fairly inferred that, with perhaps the exception of anasarcous bodies, the presence of vesications upon the skin may be looked upon as a sure indication of the burn having been made during life, or immediately after, while the body is still possessed of a certain degree of organic vitality. Their absence, however, will be no evidence that the burns were not made upon the living person, since it is very possible that only the more serious results of burning may be found. There is, however, another sign of burning during life which cannot be simulated upon the dead body, viz: the congested and inflamed state of the skin around the blister or the burn, which is indicated by a red line which gradually merges into the color of the surrounding skin. This red border remains after death, and experiments made by Drs. Christison and Taylor prove that it cannot be produced by the application of heat to the dead body. The same may be said also of the red and granulated appearance of the true skin under the blisters.

§ 868. The only experiments which appear to throw doubt upon the correctness of these conclusions are those of Drs. Maschka(*f*) and Gräff.(*g*) The first of these gentlemen found, in his experiments upon the dead body, that when the flame was brought in contact with the skin, blisters were formed of various sizes from that of a pea to that of an apple, within the space of *one*

(*f*) Canstatt's Jahresbericht, für 1852. Bd. vii. p. 46.
(*g*) Prager Vierteljahrschrift, 1850, 4 Band. p. 123.

minute. These burst with a noise and discharged serum. No redness, however, was observed under or around these vesications, until the denuded surface had been some time in contact with the air. The application of boiling water produced the same result. When the heat was maintained, the further changes could not be distinguished from such as would have been caused upon a living person. Dr. Gräff, whose object in his experiments was to ascertain the length of time required to consume a head to a degree similar to that in which this portion of the body of the murdered Countess of Görlitz was found, laid the emaciated body of a person aged about fifty years upon a table in such a manner that the head hung over one end of it. A vessel containing alcohol was placed between five and six inches below it, and the spirit set on fire. The integuments of the head were consumed in about half an hour, and at the distance of from ten to fifteen inches from the burning parts, white vesications were formed, some of which had a moist and red base, and a pale-red areola around them. Accident furnished Dr. Taylor with evidence of the same nature. "A man was accidentally drowned; his body was immediately taken from the water, and soon afterwards placed in a warm bath"—within ten minutes after apparent death.—The water was so hot that portions of the cuticle came off when his body was removed, for it was found impossible to resuscitate him. On an inspection of the body, over a considerable portion of the skin, especially of the extremities, there were several vesicles *filled with bloody serum*. There was no anasarca here to account for their production; and the fact of their occurrence appears to bear out the view of Dr. Wright that the production of a serous blister on the dead body, depends upon the amount of organic life remaining in the body. The man was pulseless and to all appearance dead when placed in the hot bath; hence the effects of hot liquids on the living and the recently dead body are proved by this case to be very similar.(*h*)

§ 869. These experiments are directly in conflict with those before enumerated, and although the weight of authority and of facts is opposed to the possibility of the production of vesications after death, which can be mistaken for those which result from the application of heat during life; yet as these experiments seem to prove the contrary, the question still remains open, except perhaps when the comparison lies between the effects of burns upon the living body and upon one in which life has been extinct for a considerable length of time. In such a case we do not think it would be difficult to show important means of distinction depending upon the absence of vital reaction.

§ 870. III. *Wounds upon the burned.*—From the frequency with which a criminal, after having robbed a dwelling and murdered one or more of the inmates, sets fire to it with a view of destroying the traces of his crime, it is often the province of the physician to seek for *wounds* upon the dead bodies there discovered, and determine their mode of origin. There are certain mechanical effects produced by fire upon the skin which should not be mistaken for wounds. Thus, in a case given by Casper, of an old man whose clothes caught fire as he was seated before his stove, the body was burned

(*h*) Med. Jur. 5th ed. 1855.

black, and on the right side, over the liver, was a gaping wound, through which the viscera could be seen. It was nothing more than a fissure caused by the intense heat.(*i*) In another case, however, in which two old people were found burned in their house, the fact of their having been previously stunned, if not killed, by blows upon the head, was ascertained by the existence of fractures of the skull, under which coagulated blood was found effused upon the *dura mater*. The criminal was not discovered for a long time, but the circumstances of the murder were betrayed by an associate. A singular circumstance was observed in this case, viz., that although the bodies were both almost destroyed by fire, the element had spared that portion of the head by which the murder was revealed.(*j*) Dr. Wyman, in his evidence in the Webster case, stated that "some of the fragments of the bones of the skull (of Dr. Parkman) had the appearance of having been broken previous to calcination, or being burned with fire. Calcination," he remarked, "removes the animal matter which gives to bone its tenacity; before this is removed, it breaks with sharp angles, and is more likely to splinter. Common surgical experience shows this. After calcination, the bone is more likely to crumble."(*k*)

In a highly interesting case of assassination related by Casper, the presence of contused wounds and extravasated blood upon the forehead and face of an aged woman, and vesications from burning, upon some portions of the body, gave indubitable evidence of violence and burning during life. Here the criminal confessed that he had struck his victim in the face with his fist and a paving stone, by which she was rendered senseless; but with a strange refinement would not acknowledge that he had designedly set fire to the apartment in which the half consumed body was found.(*l*)

§ 871. A conflagration having taken place in Paris, which caused the death of numerous persons, M. Tardieu, to whom the examination of the human remains was officially intrusted, took the opportunity of minutely observing and recording the effects produced upon the human frame by fatal burning. The soft parts on the bodies examined were in various conditions; completely charred to cinder, partly carbonized, or reduced to fibrinous shreds. The bones were dried and brittle, and in the long bones, fractures with obliquely splintered and charred ends were observed, differing distinctly from the character of ordinary fractures. In the flat bones, which were thinned by the heat, the fractures caused by the heat assumed the form of fissures *confined to one surface, and not penetrating the substance of the bone.* The intervertebral disks were contracted in their diameters. Teeth and cartilage seemed to resist the action of fire more than other hard parts. The soft parts exhibited great diminution of volume; this was more especially observed upon the viscera, which had been more or less protected from the immediate action of the fire. Some of these were mummified. The blood in the heart, aorta, and other large vessels presented an extraordinary appearance, resembling wax or fatty matter,

(*i*) Gericht. Leichenöff. ii. Hundert. Fall. 99.
(*j*) Henke's Zeitschrift, 1844, p. 284.
(*k*) Bemis' Report of the Webster case, Boston, 1850.
(*l*) Gericht. Leichenöff. sup. 1stes Hundert. Fall. 96. On this subject see a paper by M. Tardieu, Ann. d'Hygiène, Jan. 1860, p. 124.

of a most beautiful carmine color. The cerebral substance was contracted to half its bulk, and in consistence resembled a half-dressed sweetbread. To the preceding details, M. Tardieu has added the appearances discovered on the body of an infant that had been lain several years behind a stove, and had become completely mummified. The effects of slow, long-continued heat were much the same as the above-described, with the absence of the destructive agency of fire seen in the carbonization of the external soft parts.(*m*)

§ 872. IV. *Effects on the system.*—Burns and scalds are well known to be excessively dangerous, especially in children. The greater the superficial extent of the burn, the more apt is it to prove fatal with rapidity, especially when upon the chest or abdomen. When the burn is extensive, or the subject impressionable, the general irritation produced by the excessive pain, is sufficient alone to cause death. This generally ensues upon a kind of stupor, characterized by inertness, somnolence, paleness of the face, slow and stertorous respiration, and small pulse.

§ 873. V. *Post-mortem appearances.*—These are often by no means well marked; the most constant being a capillary injection of the mucous membrane of the bronchia and alimentary canal and serous effusion into the ventricles of the brain. In a child 13 days old, which was scalded to death by being placed in a bath of boiling water, the official examination disclosed the fact that the mouth, throat, and œsophagus almost as far as the stomach, were denuded of their epithelium, which lay upon the surface as a white and greasy substance. The only appearances that could be considered at all abnormal, were a slight injection of the meningeal vessels, rosy and apparently inflamed patches in the small intestine, and an unusual amount of thick dark blood in the lungs and liver.(*n*)

Nearly the same appearances were found in two children who perished in a room which was set on fire. In them, however, the trachea was filled with a dark, frothy mucus, in which particles of soot could be easily recognized. It is probable, therefore, that the immediate cause of their death was suffocation.(*o*)

CHAPTER III.

SPONTANEOUS COMBUSTION.

§ 874. In approaching the examination of the question, whether such a phenomenon as the spontaneous combustion of the human body is really possible, we encounter the usual obstacle to discovery of truth, viz., a doubt of the authenticity of the facts upon which the belief reposes. From a very early period in the history of medical curiosities, instances of apparently spontaneous human combustion may be found on record; but the credulous superstition and love of the marvellous, which, at the period when some of

(*m*) Brit. and For. Med. Rev. from Ann. d'Hyg. April, 1854.
(*n*) Schmidtmüller. Henke's Zeitsch. 1848, p. 175.
(*o*) Casper, ger. Leich. 2 Hund. 97 and 99 Fälle.

these observations were made, science rather encouraged than restrained, weaken our reliance upon their authenticity. Not having adopted a theory with a desire to find those facts only which might be adjusted to it, but desirous of discovering the real extent of our knowledge relative to the phenomena of what is called spontaneous combustion, we have examined the subject not without some care and earnestness. The result of this investigation has shown us that if there is not such a phenomenon as the actual spontaneous combustion of the human body, there is sufficient evidence to prove, that in some cases it may acquire a preternatural inflammability, and that this peculiarity can be recognized by the trifling source of combustion compared with the rapidity and extent of its progress. We do not hesitate also to affirm that a belief in the actual occurrence of the phenomena referred to may be entertained, without a satisfactory scientific explanation.

§ 875. We propose to refer only to such cases of spontaneous combustion as have been reported at a comparatively recent date, and by men of standing and authority. The first which we quote is reported by M. Devergie.(*p*) A washerwoman named Marie Jeanne Antoinette Bally, fifty years of age, and of intemperate habits, returned to her lodging one evening in December in a state of drunkenness. Her room was not more than ten feet long by six to seven feet wide, and was lighted by two little windows from a corridor. The only furniture consisted of a chair, a chest in the corner, and *muslin window curtains.* There was no bed. The next morning at eight o'clock, the neighbors, perceiving a strong smell of smoke, entered her room, and there found the unfortunate woman upon the floor almost completely burned, with her feet turned toward the chimney-place, in which, however, there was no fire. Under one of her arms there was still a portion of the chair upon which she had been seated, and underneath her an earthen pot such as is used by the poor to hold a few coals to warm their feet. The chair was almost entirely burned, the floor was covered with a black soot, and an exposed beam in the wall of the room was charred upon the surface. The chest was, however, untouched, as were *also the muslin curtains*, which were only three feet distant from the body. The body was sent to the Morgue, and examined by direction of the judicial authorities. The body was lean; the face and hair, the anterior portion of the neck and upper part of the shoulders were not injured. The skin and muscles of the back were, however, thoroughly burnt, as were also the sides and anterior portion of the trunk. The anus and vulva escaped. Nothing was left of the upper extremities but the bones; there was, however, a portion of the chemise in each armpit still intact. The upper portion of the lower limbs was also burnt. *The stockings were entire.*

The following is abridged from a case reported by Dr. John Grigor:—

The body of John Anderson, a man aged fifty, and of spare habit, a carter of wood from the forest of Darnaway to the pier of Nairn, was found dead by the road-side, and so much blackened and charred by the action of fire that it was identified only from the fact of his horses and cart being known. A post-mortem examination was imperfectly made, the result of which was that the

(*p*) Ann. d'Hyg. t. xlvi. pp. 383–431.

eyes, ears, and nose were burned away, as well as the hair and skin of the head; the skin and cellular tissue of the trunk were much charred, the thighs not to the same extent, and the burning had ceased about midway between the knees and feet, where there was a reddish and slightly blistered line. The back was not so much destroyed. This man was a notorious dram-drinker, consuming daily at least a bottleful of ardent spirits, besides porter, beer, &c. He left Nairn on the day of his death intoxicated, and parted company with a brother carter within half a mile of the place where his body was found. "Before this, however, he wished his pipe to be lit and handed to him; but his friend, thinking he had no need of a smoke, merely put a little fire on the old tobacco ash, when he drew, and immediately said, 'She is not in.' The conversation went on for ten minutes, when the poor man turned his horses' heads homewards. All this time the pipe was in his hand. His dress was a woollen shirt, a canvas frock, corduroy trowsers, and a 'wide-awake.' The weather was very warm and dry. When a little further on his way homewards, smoke was seen rising up from the cart in which the man was, and which contained a good deal of hay, by a herd-boy on a neighboring rising ground, about one-fourth of a mile distant. The man was next seen to descend from the cart, to stand, then to stagger and fall. The horses stood still. In a few minutes smoke again appeared, from the ground, when the boy ran down and found the body lifeless, black, disfigured, and burning." With the aid of another person water was procured and the fire extinguished. The clothes were all consumed, except the lower part of the legs of the trowsers, and a small portion of the shirt, frock, and hat. The pipe was found lying below the body, *with the cap on*, apparently as it had been put into his hands. *None of the hay was burned.*(q)

The following case was communicated to Dr. Beck by Wm. Dunlap, Esq., of New York:—

"Hannah Bradshaw, aged about thirty years, had lived about a dozen years in the city. She was a healthy, hearty-looking woman, remarkably industrious, and neat in her person and manner of living, but bore a bad character with respect to chastity and sobriety. On account of her robust appearance and bold behavior she had obtained the name of *Man-of-War Nance*. She resided in an upper room, which had no connection with the rooms below, occupied by a family. On the evening of the 31st of December (1771) she desired a young woman who worked for her, and was going home, to come again early the next morning; and about seven o'clock the same evening another acquaintance parted from her, at which time she seemed to have drank a little too freely. She was neither heard of nor seen again until the next morning, when the young woman returned to her work. After knocking and calling, and having waited until past eleven o'clock, this person, by the aid of a man who lived below, got in through a back window and opened the door. On looking within a screen, which went quite across the room, and was fitted to reach the ceiling, she discovered the mutilated remains of Hannah. The body, or rather the bones, were lying near the middle of the floor, wherein a hole of about

(q) Edinb. Monthly Journ. of Med. Sci. Dec. 1852, p. 555.

four feet in diameter was burned away, and the bones were on its bottom, about a foot beneath that part of the floor. The flesh was entirely burnt off the bones of the whole body, except a small part on the skull, a little on one of the shoulders, the lower part of the right leg and foot, which was burnt off at the small, almost as even as if cut off, and left lying on the floor. The stocking was burnt off as far as the leg, and no further. The bones, some of which were black and others white, were so thoroughly burnt as to crumble to dust between the fingers. The bowels remained unconsumed. One of the sleepers, which lay under the shoulders, was burnt almost through. Part of the head lay on the planks at the edge of the hole, and near it was a candlestick, with part of a candle in it, thrown down, but it did not appear to have touched any part of the body, or to have set anything on fire. The tallow was melted off the wick, which remained unscorched by the fire, as also the screen, which almost touched the hole. The leg of a rush-bottomed chair, and about half the bottom, were burnt so far as they were within the compass of the hole in the floor, and no further. The ceiling of the room, which was whitewashed plaster, was as black as if covered with lampblack, as also part of the walls and windows; and the heat had been so great as to extract the turpentine from the boards and the wainscot. After all these operations the fire went entirely out, so that when the body was found not a spark remained."(*r*)

A well-known and privileged beggar, of 60 years of age, and quite corpulent, accustomed to hard drinking, came on a Christmas evening into a tavern, already intoxicated. There, for a wager, he drank four bottles of brandy, and being entirely overcome by it, was carefully deposited on the floor behind the German stove, but some distance from the latter, with his head resting on his sack containing bread, in order that he might sleep away his debauch. The remaining guests soon retired. Early in the morning, the landlord was awakened by a penetrating, insupportable smell; he arose and approaching the public room found the smell still more powerful. The room was cold, and the fire had long before died out. The unfortunate beggar was found nearly reduced to ashes, a portion of the face and occiput remained, and the legs below the knee were not burnt, the shoes and stockings being also untouched. His pouch of bread was not consumed, but was covered with a fetid soot. The whole room was filled with the same, and no cleansing afterwards availed to destroy the odor.

An old lady of corpulent habit, and 70 years of age, was accustomed to have herself bathed with cologne water and alcohol, and every night before retiring took a so-called sleeping potion of spirituous liquor. Early one morning, as in the preceding case, the neighbors and servants were awakened by a fearful smell, proceeding from the old lady's room. On entering it, her body completely carbonized, was found upon the floor by the bed; only the hands and feet remained. The floor was not burnt nor the furniture, but everything was covered with a fetid, black, and fatty soot.(*s*)

A case of *partial* self-combustion is reported, in which it would appear that

(*r*) Beck's Med. Jur. vol. ii. p. 99.

(*s*) Beiträge zur gericht. Medicin (with two original observations), by Dr. Schneider, of Fulda. Henke's Zeitsch. E. H. 32.

the burns produced upon the face were made by the vomited contents of the stomach. The man was an incorrigible drunkard, and was left by his companions upon the floor of his room, stupid from drink. It is positively stated, that there was no light in the room nor means for procuring it.(*t*)

Other cases might be cited of equal authenticity with the foregoing, but these, we think, depict with sufficient clearness the phenomena attending this peculiar mode of combustion.

§ 876. In striking contrast with them is the process of *ordinary combustion*, by the prolonged application of fire to the human body. The phenomena attending it are familiar to every one, and have been already described in the foregoing chapter. The effects are purely local, being confined in extent to that portion of the body exposed to the heat, and they cease with the withdrawal or extinction of the burning material, finding no self-sustaining combustible principle in the body itself. The cause is always evident, and the extent of injury is in proportion to the amount of the fire.

§ 877. If again this have been designedly kept up, the quantity of fuel required for such a destruction of the body as is related in the foregoing instances, is enormous. The history of the death-scene of those who have perished at the stake, and the widow-burning in India, sufficiently attest this fact. We might add here the evidence given in the Webster case upon this point. Dr. Strong said: "In the pursuit of my anatomical studies, I have had considerable experience in burning up or getting rid of human remains by fire. Where I had my office, at an early day, in Cornhill, I had poor accommodations for dissecting, and it was frequently necessary to burn up the remains of a subject. Once in particular, I had a pirate given me by the United States Marshal, for dissection; and it being warm weather, I wanted to get rid of the flesh, and only preserve the bones. He was a muscular stout man, and I began upon it one night, with a wood fire, in a large old-fashioned fireplace. I built a rousing fire and sat up all night, piling on the wood and the flesh, and had not got it consumed by morning. I was afraid of a visit from the police; and by eleven o'clock they gave me a call, to know what made such a smell in the street. I finished it up, somehow, that forenoon; but I look upon it as no small operation to burn up a body."(*u*)

Recently the case of Stauff, tried for the murder of the Countess of Goerlitz, gave rise to a discussion of the question of spontaneous combustion, in the course of which certain experiments were conducted by Dr. Gräff, for the purpose of ascertaining the amount of fuel necessary to effect an equal destruction with that observed in that case. The result of these trials was, that as much as one hundred pounds of wood was required to produce even a partial combustion of a human body. In the case of the Countess of Goerlitz, whose body was found in her apartment partly consumed by fire, the heat must have been intense. The secretary near which the body lay was half burned; several chairs further removed from it than was the body, took fire, and the floor underneath it was burned. A mirror on the opposite side of the room, nearly

(*t*) Schmidtmüller, Henke's Zeitsch. 1842, p. 225.
(*u*) Bemis' Report of the Webster case, p. 69.

twenty feet distant, was cracked by the heat, and was still so hot when the room was broken open that the hand could not be borne upon it. The heat developed by the burning of the secretary was so great, that articles of gold and silver, and also of iron, had been melted by it. Yet with such a degree of heat as this, and the body only two feet distant from the burning secretary, the traces of fire did not extend below the breast; the head, neck and upper extremities being the parts which were chiefly destroyed.(*v*)

(*v*) The following abstract of the trial of John Stauff, for the murder of the Countess of Goerlitz, we have condensed from an admirable report in the Prague Quarterly Journal of Practical Medicine (vol. xxviii. p. 108), from several accounts in Henke's Zeitschrift, and from a translation of Dr. Gräff's Memoir, in the London Medical Gazette (1850, vol. ii.).

On the 13th of June, 1847, the partially burned body of the Countess of Goerlitz was found at 11½ o'clock at night in her chamber. She was known as a person of active, industrious, and somewhat parsimonious habits, and enjoyed good health. She was frequently known to retire to her own apartments and shut herself up there for half a day at a time. She lived on good terms with the Count, but their apartments were on different floors. On the day of her death she was last seen by her servants at 4 o'clock in the afternoon, in good health. Between 4 and 5 o'clock there was no one in the house but herself and the valet Stauff. On his return in the evening, the Count knocked at the door of the ante-room, but received no answer, when he went out again. This was about 7 o'clock; at 9 P. M. he returned. During his second absence a bright light, which speedily disappeared, had been noticed at the closet window of her apartment, which looked to the south, and also a thick smoke from a chimney, which corresponded with the stove in the parlor. (These rooms adjoined each other.) At 9 P. M. the servants who had returned were sent in search of their mistress by the Count, and Stauff himself was sent after the locksmith to open the door of her apartment. He returned and said that the locksmith was sick and could not come until morning. In the mean time smoke was seen issuing from the rooms, and finally doors and windows were broken open. On this being done flames burst out simultaneously from the hangings, and a writing-desk and the floor underneath it. The dead body of the Countess was found a foot distant from the writing-desk, with the feet towards the middle of the room, and the head towards the window.

After the fire had been extinguished, which was done without much difficulty, it was found that the writing-desk had burned from below upwards, the lower drawer being entirely burned, the two upper ones not so much, and the floor under it was burned through to the joists. Its contents of a combustible character were mostly destroyed, and in the ashes underneath were found keys, melted gold ornaments, pearls and diamonds, much injured by the fire, and papers partly burned lay scattered about the room. A mirror on the opposite wall, fifteen feet distant from the desk, was cracked and covered with a brownish yellow ammoniacal soot. The bell-rope on the left side of the door was broken. A divan in the adjoining closet or cabinet was burned in a large oval hole in the centre, and one of the slippers of the Countess was found on the floor near it. The remaining slipper was found on one of the feet of the corpse.

The dress on the upper part of the body was almost wholly consumed. The head exhibited the form of a nearly shapeless black mass, in which the mouth was imperfectly distinguishable, with the charred tongue protruding from it. The body lay on its left side, the head and chest retracted, the neck everywhere blackened and charred, as were the skin and muscles on the fore and upper parts of the chest, the former thus being affected to within an inch of the pit of the stomach. The marks of the action of fire did not extend quite so far along the back part of the trunk. The joints of both upper extremities were flexed and their surfaces charred, except at the hands. The left shoulder and the right elbow-joints were laid open. From the former of these the blackened humerus, and from the latter the heads of the radius and ulna, protruded. The skin in the vicinity of the left knee was slightly acted on. The body exhaled an empyreumatic odor. The further examination of it was objected to, and was not carried out at that time. After carefully cleansing the head, a fissure about half an inch long was found in the temporal bone.

The key of the apartment could nowhere be found. It was not, until the subsequent proceedings, remarked that Stauff was not present at the above examination of the body, while every one else gave all the assistance in their power. He was observed to be in an exceedingly tremulous and frightened condition until the body was buried, and his subsequent conduct was very suspicious. He was not, however,

§878. Such cases as these are entirely unlike those well-authenticated cases of combustion, where the body has been found destroyed in a greater or less degree by the action of fire, without any apparent external cause, or, at most, with one which has been entirely disproportioned to the effect produced. Could the phenomena in the two sets of cases be properly designated by the same name, it is difficult to conceive how in one, the ashes of a pipe, a few smouldering coals, or the flame of a lamp, could cause a greater destruction of the human body, with an immunity of surrounding objects from the action of fire, than in the other the hottest fire was able to produce. Evidently there must be in one case some self-sustaining principle of combustion, a preternatural inflammability of the body, which does not exist in the other. When this has been said, we believe that all has been said which the present state of our knowledge permits.

879. Some authors have fallen into the error of attempting to explain by chemical theories the phenomena of spontaneous combustion, but they have hereby given their opponents the opportunity, not only of easily refuting these speculations, but furnished them with a plausible pretext for denying the correctness of the facts. MM. Liebig and Bischoff have, perhaps, disproved the accuracy of the doctrines which attribute the origin of spontaneous combustion to a saturation of the body with alcohol, unusual corpulence, and the development of inflammable gases. They allege that as the watery element of the body constitutes seventy-five per cent. of its bulk, it must first be dissipated before the latter can burn, that alcohol cannot be present in the tissues without coagulating their albumen, and that it may burn without communicating its flame to the flesh; and, finally, that the evolution of inflammable gases in the living body is either not a fact, or if it were so, could not explain the alleged process of spontaneous combustion.(*w*)

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taken into custody until some months afterwards, when he was detected in an attempt to poison the Count.

The proceedings in this case unfortunately were complicated, by the suggestion that this lady had possibly met her death by spontaneous combustion. Naturally enough the facts of the case did not support this idea, and in consequence unmerited discredit, we think, was thrown by the eminent examiners, Liebig, Bischoff, and others, upon the possibility of this phenomenon under any circumstances. Nevertheless this suggestion gave rise to protracted debates and experiments by burning dead bodies, which do not appear to have resulted in the development of any important facts not before known. The conclusion, however, to which the medical commission to whom the case was referred, came at last, was, that the Countess had been assaulted in her room, that in her effort to call for help she had broken the bell-cord, and that the murderer had then dragged her into the cabinet, and there killed her by a blow upon the head, and by strangulation; and to conceal his crime set fire to the combustible materials in the room. At the diet of the assize, on the 11th of April, 1850, John Stauff was found guilty of the murder of the Countess of Goerlitz, and of the subsequent arson, and attempt to poison, and sentenced to imprisonment for life. He afterwards confessed his crime. He declared that he had entered the room of the Countess, to announce to her that he was going out, when, finding no one in the room, he was tempted by the articles of value he saw there to commit a robbery. When doing so the Countess came in, a struggle took place, and he seized her by the throat and strangled her. He afterwards placed the body on a chair, and putting round it a quantity of combustible articles set fire to them.

(*w*) Henke's Zeitschrift. Bd. 60, p. 162. Ann. d'Hygiène. t. xvi. p. 383. See also an "Essay on the use of Alcoholic Liquors," by John Chadwick, M. D., London, 1849, where proof is given of the presence of alcohol in the brain of drunkards after death.

Yet, admitting that the phenomena of spontaneous combustion, so called, are incongruous with the laws of combustion so far as they are known, it does not follow that we should, with these chemists, reject as unworthy of belief the many curious and authentic facts on record. These may be true, although incorrectly accounted for. Indeed, there are many examples of the spontaneous combustion of organic and inorganic matter, which chemistry is yet unable satisfactorily to explain. But the number of cases now known, amounting to between forty and fifty (some of them, perhaps, indeed fictitious), the uniformity in the description of the phenomena, and of the age and habits of the persons attacked, require us to regard them as scientific facts yet unexplained. The following characters are those generally described:—

1st. The extent and gravity of the burns is altogether out of proportion to the apparent external cause.

2d. The persons have been inordinately addicted to the use of spirituous liquors.

3d. Women are more frequently attacked than men.

4th. The great majority were aged and corpulent.

5th. The combustion of the body has been nearly total, while the adjacent objects have been only slightly or not at all injured.

6th. The flame has been difficult to extinguish.

The deposit of a fat and fetid soot upon surrounding objects cannot be considered as peculiar to this form of animal combustion.

CHAPTER IV.

HEAT AND SUNSTROKE.

I. Symptoms, § 880.
II. Post-mortem appearances, § 882.

§ 880. I. *Symptoms.*—The frequency with which, in this country, fatal results are observed from exposure to heat or the direct rays of the sun, renders necessary some notice of the prominent symptoms and post-mortem appearances characterizing sudden illness or death from these causes. The report of the City Inspector of the city of New York, alone, shows two hundred and sixty deaths from *coup de soleil* during the summer of 1853, without including many cases designated as "congestion of the brain," and the "effects of cold water." In the city of Philadelphia, during the months of June, July, and August, of the same year, the number of deaths reported under this head amounted to fifty-seven; a number which is also certainly much below the true mortality.

Rapid or sudden insensibility, after exposure to the intense heat of the sun in summer, usually occurs in those who are engaged in some laborious outdoor occupation, but the same condition may result after exposure to artificial as well as solar heat. Dr. Swift, of New York, in his "Observations on Ex-

haustion from the Effects of Heat,"(*x*) states that eleven patients were admitted into his hospital from the laundry of one of the principal hotels in that city, and that several were brought from a sugar refinery, where, after working several hours in a close and overheated apartment, they fell down suddenly in a state of insensibility. Upon a comparison of the symptoms and lesions of these with those of the patients who had become exhausted after laboring in the sun, no distinction could be perceived.

§ 881. The immediate cause of the symptoms or of the death of those who are said to be "struck" by the sun is not always the same. In the majority of cases the affection is one depending upon exhaustion from heat with, most probably, some molecular change in the blood, the character of which is not now understood, but which is ascribable to intense heat and prostration from fatigue. In other cases, however, which are comparatively few, inflammation of the brain or its membranes is the result of exposure to the sun's heat, and, occasionally, apoplexy is produced. The symptoms vary, therefore, but a neglected case of the first variety may pass into the second. For interesting details relative to the mode of distinction between exhaustion from heat and *insolation*, we would refer the reader to the paper already quoted, and to a discussion on the subject in the Philadelphia College of Physicians.(*y*)

§ 882. II. *Post-mortem appearances.*—In four cases (those of exhaustion) examined by Dr. Pepper, "the brain exhibited no indications of congestion, and nothing, in fact, of an unusual appearance." Dr. P. was, however, struck with the appearance of the heart. In all of the four subjects it was pallid, flaccid, and softened, while the other muscles of the body were florid and firm. The lining membrane of the heart and of the large bloodvessels was of a very dark, almost purple color. The cavities of the heart contained but little blood, and no coagulum. The examinations were made from six to eight hours after death.

The following may serve as an example of death from the direct cerebral disturbance. Two women were washing clothes in the sun. One fell down in a state of insensibility, and remained so for twenty-four hours, but finally recovered under free depletion. On recovering, she described her sensation, when attacked, as though she had been suddenly struck upon the head. In the other case the attack was precisely similar. The patient died in twelve hours. Upon examination after death, blood was found effused beneath the membranes of the brain.

(*x*) N. Y. Jour. of Med. July, 1854.

(*y*) Transactions Coll. Phys. vol. iii. p. 99 et seq.; also, Trans. of Med. Soc. of Pennsylvania, vol. iv. p. 112. For the most recent accounts of this affection, see Times & Gaz., Dec. 1858, p. 638; Levick, Am. Jour. of Med. Sci., Oct. 1858, p. 404; ib. Jan. 1859, p. 40; Martin, Lancet, Jan. 1859, pp. 2, 28, 52; ib. Mar., p. 315; Pirrie, Lancet, May, 1859, pp. 505 and 533; Merrill, Am. Jour. of Med. Sci., July, 1859, p. 118; Gordon, Edinb. Jour. v. 985; Longhurst, Lancet, Jan. 1860, p. 7.

CHAPTER V.

LIGHTNING.

I. Symptoms, § 883.
II. Post-mortem appearances, § 884.

§ 883. I. *Symptoms.*—Cases of sudden death from this cause are quite common, and there can rarely, if ever, be any doubt of the agency by which the person is killed. This is usually sufficiently attested by the circumstances. The person may be found dead either in an open place or in a building. The fact of a thunderstorm having occurred will, of course, be generally known, and the traces left by the electric fluid upon the body and surrounding objects can hardly be misunderstood.(z) It is remarkable that in death from this cause, as in other kinds of instantaneous death, the body retains the position in which it was performing the last act of life. M. Boudin has collected numerous examples of this fact. According to Carden, quoted by Rivière, eight reapers, taking their food under an oak, were struck by lightning, and died, preserving their attitude—one of a man eating, another drinking. In Lorraine a woman and one of her children were killed, and remained in a sitting posture. At Dover a man killed with four horses was found sitting under a bush. A man of law at Troyes was struck dead by lightning when on horseback. On January 22, 1849, a goat was killed near Clermont, and found sitting upon his haunches, with a bunch of green leaves in its mouth.

(z) It is not impossible that the stroke of lightning should have been neither preceded nor followed by rain and wind, as is usual in thunderstorms. On Sunday, the 2d of July, 1843, about 3 o'clock P. M., five negroes were simultaneously prostrated by a single stroke of lightning, on a plantation in Georgia. "The sun was shining brilliantly at the time, and a greater portion of the visible hemisphere presented the usual serenity of the summer sky. A singular and rather angry-looking cloud had for a short time previously been observed near the verge of the southeastern horizon, from which occasionally proceeded the low rumblings of very distant thunder. But nothing in the appearance of the heavens betokened the immediate proximity of a thunderstorm, or prepared them for the terrible electrical explosion which followed. Not a drop of rain had yet fallen, and the earth was quite dry. Such was the condition of things when suddenly the whole atmosphere in the neighborhood was momentarily illuminated by what appeared to be a universal flash, which was accompanied, or rather succeeded, by a single astounding report. No dust was observed to rise from the ground, nor any other evidence of mechanical violence. No thunder was heard after this explosion; the cloud quickly dispersed, precipitating only a little rain a few minutes after the accident; and in the course of an hour the atmosphere resumed its usual tranquillity. The five negroes were taken up in a state of insensibility amounting to apparent death." Three of them had been instantaneously killed. In two no marks of injury were discovered; in the third there was a burnt spot of the size of a dollar under the right axilla. The other two recovered. One of these was a woman aged seventy years, and the singular fact is stated that in her the catamenial discharge, which had, in the ordinary course of nature, ceased for more than twenty years, was completely, and thus far (about a year afterwards) permanently, re-established. For this and many curious cases and ingenious speculations we beg leave to refer the reader to Le Conte on the effects of lightning, New York Journ. of Med. vol. iii. p. 295; also Hist. Méd. de la Foudre et de ses Effets sur l'Homme, &c., par M. Boudin, Ann. d'Hygiène, 1852.

A woman was struck while plucking a flower, and her body was found standing nearly erect, with the flower in her hand. A priest was killed while on horseback; the animal reached home, a distance of two leagues, his dead master still sitting erect in the saddle. The clothes are torn and burnt; metallic articles upon the person, if in the track of the fluid, are fused; and there will be found upon some part of the person, usually about the head or shoulders, a reddened spot, a lacerated puncture, or a discolored streak, indicating the point at which the electric fluid has entered the body. A great many cases have been reported in which images of trees and other objects have been found imprinted upon the skin of persons struck by lightning or exposed to its vivid glare.(*zz*) The amount of visible injury is generally trifling, and it is said that occasionally no marks whatever are perceived. In the latter case the person is probably killed by the agency of the *returning stroke* or electric shock, his body being the conductor by which the positive electricity of the earth is transmitted to a cloud which has come in near proximity to it. The absence of any external mark of injury may indeed leave us in doubt of the mode by which death has been produced, but it at the same time equally negatives the suspicion of homicidal violence. In such cases death can therefore be attributed only to natural causes, or to those poisons which act rapidly. A post-mortem examination can hardly fail to show to which of these it is due, and, if required, a chemical analysis may be made of the contents of the stomach. These suggestions are, however, of but little practical importance, since attendant circumstances will, as we have already intimated, enable us to dispense with any examination of the body.

§ 884. II. *Post-mortem appearances.*—In the examination of the bodies of two women, one 32 years of age and the other 17, who were struck instantly dead by a flash of lightning as they were seated spinning near the fireplace, the following observations of the *external* appearances were made by Dr. Martin twenty hours after death. In both bodies putrefaction had begun, the abdomen was already distended and of a bluish color, and dissolved blood flowed from the mouth and nose. On one of them the whole surface of the neck and breast was covered with reddish-brown spots, under which, however, the arborescent tracks of the electric fire could be traced, until uniting into three larger branches, they ended in the left lumbar region, in an oblong burn, of a dark-red color, six inches long and three broad, and penetrating into the substance of the true skin, under which, however, there was no lesions discoverable. The skin was here and there, in the course of the marks, of a parchment-like consistence. On the other body, which was that of the young girl, the electric fluid appeared to have entered over the left temple, as here a tolerably deep scorched spot was to be seen; the eyebrows and lashes on this side were burnt. The skin was striped and spotted, exactly as in the preceding case. The neckerchiefs worn by both these females were torn to rags, but did not exhibit the slightest trace of combustion, nor was any other part of their clothing, or of the furniture of the house, burnt in the least degree.(*a*) Some-

(*zz*) Poey, Med. Times and Gazette, March, 1857, p. 317; and Boudin, loc. cit.
(*a*) Henke's Zeitschrift, 1844, p. 193.

times, however, there is considerable external injury, the skin being contused and lacerated, but it does not appear that there is ever any actual burning of the skin, unless the clothes have been set on fire by the electric current. The idea that the blood remains fluid in persons struck by lightning, and that putrefaction occurs at a very early period, is not sustained by the observation of all authors upon the subject, but it is probable that such is the general rule in the human subject. It is also generally supposed that rigidity is very slight or is absent after death from this cause. But it is not uniformly so. A case is reported by Maerklin in which cadaveric rigidity began within three or four hours after death, and in the course of twenty-four hours reached a very high degree.(*aa*)

CHAPTER VI.

COLD.

I. Symptoms, § 885.
II. Post-mortem appearances, § 886.

§ 885. I. *Symptoms.*—Where the body of a person is found who is supposed to have perished from exposure to cold, the chief inquiries which require attention are, whether the cold was the sole cause of death, and if not, what were the additional causes, or whether the disease or injury, if any, was not in itself suddenly fatal; the cold having had nothing to do with the result.

The effect of intense cold upon the human body is too familiar to need illustration. After prolonged exposure to its influence, the whole body becomes benumbed, the respiration oppressed, and the head heavy. Perception and sensation are obtunded, the mind wanders, an invincible lethargy steals over the senses, the limbs become paralyzed, and the unfortunate person, overcome with drowsiness and exhaustion, sinks down into apparent death. Unless speedy relief is afforded, this condition soon merges into real death. According to Larrey, death is preceded by a general pallor, stupor, difficulty of speech, dimness of sight, and sometimes a total loss of these functions. In the retreat from Moscow, some men, he says, led by their comrades, were able to march for a considerable time in this condition. But their limbs soon refused to support them, they reeled like drunken men, and fell benumbed and lethargic, and soon expired. Almost all the men who perished in this manner were found lying with their faces to the ground.

§ 886. II. *Post-mortem appearances.*—The *post-mortem* examinations which have been made of persons dying from cold, have shown that the most constant appearance, is an extreme congestion of the venous system in the principal organs of the body, but especially in the brain. Serous effusion into the ventricles, or under the arachnoid, is also met with. Dr. Kellie observed it in two cases, and Professor Blosfeld mentions it in three of six cases of death by cold.(*b*)

(*aa*) Casper's Vierteljarhs. xvi. 332.
(*b*) Beck's Med. Jour. vol. ii. 68; Henke's Zeitschrift, 1845, p. 245. One hundred legal autopsies made in the Institute for instruction in Forensic Medicine in the Russian University at Kasan.

Such are the only positive results of *post-mortem* investigations. Unless the examiner knew the circumstances in which the body was found, which favored the supposition of death from cold, he could not possibly assert from these signs, that death had resulted from this cause. Practically, therefore, they are of little importance except in those cases in which, from the absence of other injuries, and of serious disease, and from a knowledge of the circumstances under which the body was found, the cause of death is already rendered probable. Adults, who perish in this manner, are generally either intoxicated or else helpless and infirm. The intemperate, the aged, or those whose nervous energy is exhausted by long watching, fatigue, hunger, or depressing emotions, succumb to this form of death much more speedily than the temperate and vigorous. Children, and above all, infants, can sustain only a moderate degree of cold. Hence intoxication, old age, and privation, as well as actual disease, must be enumerated as predisposing causes of death from cold.

§ 887. If marks of violence be found upon the body, they must be judged according to the rules already laid down in the chapter on wounds. If necessarily mortal, the influence of cold need not be considered, but in all other cases, it is obvious that cold must have greatly accelerated the fatal result. The same remarks are applicable when the subject is very young. It must be remembered, however, that cold itself may here be more readily employed as a homicidal agent, and that possibly the other marks of ill-treatment may be few or none. An atrocious case of murder by cold has been frequently quoted, on account of the rarity of examples of the kind. A man and his wife, at Lyons, were tried for the murder of their daughter, a girl aged eleven, under the following circumstances. On the 28th of December, at a time when there was a severe degree of cold, the female prisoner compelled the deceased to get out of her bed, and place herself in a vessel of ice-cold water. The deceased complained of exhaustion and dimness of sight; the prisoner then threw a pail of iced-water upon her head, soon after which the child expired.(*c*)

CHAPTER VII.

STARVATION.

I. Mode, § 888.
II. Period, § 889.
III. Symptoms, § 890.
IV. Post-mortem appearances, § 891.

§ 888. I. *Mode.*—A person may starve himself to death; he may perish from the want of food, being unable to procure, to swallow, or to digest it, or he may purposely be deprived of it. Medical evidence can only attempt to establish the fact of death by starvation, and can, in many cases, indicate the physical cause of it, but cannot, of course, determine whether the act was voluntary or homicidal. In the case of young children, however, homicidal intentions may be inferred, while in adults, on the contrary, starvation is

(*c*) Ann. d'Hyg. 1831, p. 207.

mostly a suicidal act.(*cc*) The *mode* of starvation is not always the same. In some cases the privation of suitable nourishment is gradual, and death ensues only after a considerable period; in others, although no solid food is swallowed, life is prolonged by the use of a little water, and in others, again, after a variable period of total abstinence from food or drink, the imperative demands of nature are gratified, perhaps too freely and too late to save life.

§ 889. II. *Period.*—The *period* at which *death* ensues after starvation, is therefore dependent not only upon the age and constitutional powers of the individual, but also upon the foregoing varieties in the manner in which it is effected. It cannot be determined with precision. Wonderful examples of prolonged abstinence may be found in abundance in the older works, and are not wanting in our own day. But the numerous instances in which trickery has been detected, should make us wholly incredulous of their genuineness. Instances of abstinence for months, and even years, are gravely related; but it is probable that there is no well-authenticated case of entire abstinence from food and drink for more than thirty days, while on the other hand it is highly probable, that in the majority of cases, death takes place within a week or ten days. Dr. Gadermann reports a case, however, in which for twenty-three days all liquid or solid nourishment was refused, the person being bent upon self-destruction. At the end of this time he ate and drank greedily, which did not however avail him; he died shortly afterwards. The body was almost a skeleton. In this case the author says, there could not be the slightest suspicion of deception.(*d*) Professor M'Naughten has published a case where a man lived fifty-four days on water alone.(*e*) In another case, of a prisoner at Toulouse, who resorted to starvation to avoid punishment, life was prolonged to the fifty-eighth day. He drank water occasionally. Valentin refers to the case of a woman who lived seventy-eight days on water and lemon-juice.(*f*) In another case a man lived sixty days on a little water and syrup of orgeat.(*g*) A man aged 65 years was accidentally shut up in a coal mine. He remained there *twenty-three* days before he was discovered, almost completely exhausted. He had been able to procure a small quantity of dirty water during the first ten days of his confinement. Notwithstanding every effort was made to save him, he died three days after he was found.(*h*)

Two very interesting cases of prolonged abstinence in persons afflicted with slight mental derangement, or melancholy, are related by Dr. Taylor, of Ohio. In one, after two periods of fasting, of ten and fourteen days respectively, during the last of which he took neither food nor water, this gentleman, on the fifteenth day, took a little water, and then at intervals a small quantity of milk in it. He died about one hundred days afterwards, having lived in "an almost constant state of abstinence." In the other, a little water was taken on the twelfth day after complete abstinence from food and drink, and a gill every twenty-four hours afterwards for thirty-nine successive days, when

(*cc*) A case is related in Henke's Zeitschrift, lxxix. 147, in which a man seventy-seven years old was killed by ill treatment and starvation. His assassins were his own daughter and his son-in-law.

(*d*) Henke's Zeitschrift, 1848, 3 H.
(*e*) Am. Journ. Med. Sci. vi. 543.
(*f*) Lehrb. der Physiol. vol. i. p. 218.
(*g*) Archiv. gén. xxvii. p. 180.
(*h*) Lond. Med. Gaz. xvii. 389.

he died. For the last seventy-two days prior to his death, he had no fecal evacuation, but passed urine in small quantities every three or four days.(*i*)

Under the subsequent topic of "Priority of Death," or "Survivorship," a case will be found of a party of miners who survived over fourteen days without food, without any permanent serious consequences.

§ 890. III. *Symptoms.*—"Dr. Donovan gives the following description of those who suffered from the Irish famine in 1847. They described the pain of hunger as at first very acute, but said, that after twenty-four hours had been passed without food, the pain subsided, and was succeeded by a feeling of weakness and sinking, experienced principally in the epigastric region, accompanied with insatiable thirst, a strong desire for cold water, and a distressing feeling of coldness over the whole body. In a short time, the face and limbs became frightfully emaciated, the eyes acquired a most peculiar stare, the skin exhaled a peculiar and offensive fetor, and was covered with a brownish, filthy-looking coating, almost as indelible as varnish. The sufferer tottered in walking, like a drunken man; his voice became weak, like that of a person in cholera; he whined like a child, and burst into tears on the slightest occasion. In respect to the mental faculties, their prostration kept pace with the general wreck of bodily power; in many there was a state of imbecility; in some, almost complete idiotism; but in no instance was there delirium or mania, which is often described as a consequence of protracted abstinence among shipwrecked mariners."(*j*)

§ 891. IV. *Post-mortem appearances.*—In a child, six months old, which was starved to death by its mother, the following conditions were observed. Excessive emaciation; the body weighed only six pounds and a half, and the thickest part of the thigh measured only an inch and a quarter in diameter. There was no fat anywhere to be found, not even in the omentum, and only a small amount of blood in the body. There was no food in the stomach or intestines. A trifling quantity of old and hardened feces remained in the rectum. Extreme contraction of the stomach and all the intestines existed.(*k*) Wildberg examined the body of a man 50 years of age, who died of hunger, seven days after being buried in the ruins of a falling house; he was known to have been healthy before the accident. The body was extremely emaciated, being reduced almost to a skeleton; the eyes stood open, and were highly injected; the mouth and tongue exceedingly dry; and the abdomen so flat, that the anterior wall lay almost in contact with the spine. Although the body was still fresh, it exhaled a peculiar penetrating fetor, different from that of putrefaction. The lungs were shrivelled and of a yellowish white color, the heart small and flaccid, and a small quantity of loosely coagulated and highly offensive blood was found in it and in the great vessels. In the abdomen there was not a trace of adipose tissue remaining; the stomach was very much shrunken, and contained a little dark and viscid liquid. The mucous surface was corroded in several places. The intestines were pale and contracted, and

(*i*) Am. Journ. Med. Sci., Jan. 1851. In the same place will be found some references to remarkable cases of abstinence by the editor, Dr. Hays.
(*j*) Taylor, Med. Jur., from Donovan, Dub. Med. Press, Feb. 1848.
(*k*) Rothamel, Henke's Zeitsch., 1845, 3 H.

entirely empty, with the exception of a little greenish fluid in the small intestine, and in the large a very small quantity of dry excrement.

The liver was pale, the gall-bladder very much distended, with thick, dark-brown bile, which, exuding through its coats, had tinged all the neighboring viscera. All the other abdominal organs were small, flaccid, and contained but little blood; in the bladder, the internal coat of which had an inflamed appearance, there was found a little dark and fetid urine. The brain and its membranes were extremely anæmic, and the former firm and dry. In addition to this description, it may be stated that Dr. Donovan found, in some cases inspected by him, during the Irish famine, a peculiarly thin condition of the small intestines, "which, in such cases, were so transparent, that if the deceased had taken any food immediately before death, the contents would be seen through the coats of the bowel; on one occasion (at an inquest) he was able to recognize a portion of raw green cabbage in the duodenum of a man who had died of inanition." The above description, from Wildberg, coincides very closely with the statements of other observers, and may probably be assumed as correct when there is no other cause of death present. It is further substantiated by the observation of Casper, in a case where, from occlusion of the mouth by disease, death took place from hunger.(*l*)

§ 892. In estimating the value of the post-mortem appearances, as evidence of death from starvation, it should be remembered, that unless there is absence of disease sufficient to have induced the emaciation and anæmic condition described, death cannot be attributed to starvation as its cause. There are many diseases which would produce a similar condition of the body—some by mechanical obstruction to the ingestion or chylification of the food, and others by their baleful effect upon the system generally. Hence, the medical witness should be extremely cautious in attributing, upon the grounds of a post-mortem inspection alone, the death of the individual to starvation, especially if the person have been the subject of any chronic disease.

CHAPTER VIII.

SUFFOCATION.

I. Post-mortem appearances, § 894.
II. Accidental, § 895.
III. Suicidal, § 896.
IV. Homicidal, § 897.

§ 893. Although the general definition of this word may not improperly include all those modes of death in which the respiration is mechanically prevented, yet, as hanging, strangulation, and drowning require a separate consideration, it remains for us here to speak only of those modes of suffocation not elsewhere discussed. These are exceedingly numerous, and comprise all those cases in which by any means air is excluded from the larynx, or the chest prevented from expanding to receive it.

(*l*) Casper, Gericht. Leichenöff, 2tes Hundert. Fall. 99.

§ 894. I. *Post-mortem appearances.*—These, as Casper has pointed out, will be found to differ more or less according to whether death has been sudden or prolonged, whether it was produced by syncope or by congestion of the internal organs, and whether the person was scantily or abundantly furnished with blood. Lividity and turgescence of the face, fluidity of the blood, and sanguineous engorgement of the thoracic and abdominal viscera are the general and most constant features. Casper pronounces erroneous the opinion that cadaveric rigidity is absent after death by suffocation, and declares that it exists neither more nor less than in other cases. The heat of the body, and particularly of the internal organs, is of longer duration than usual; the blood is uniformly more liquid, and of a darker color, than is usual except after death from putrid fevers, septic poisons, &c., and hence it flows more abundantly when sections of the vascular organs, as the brain, are made. Bloody infiltration of the eyes and eyelids, and minute ecchymosis of the neck and chest, are common.(*m*) The lungs, according to Casper, are generally engorged, as well as the right side of the heart and the pulmonary arteries, while the left cavities of this organ contain little or no blood. M. Tardieu, on the other hand, declares that in general the lungs do not present the characters usually attributable to asphyxia, being in the majority of cases of moderate volume, rosy or even pale, and sometimes engorged about the base and posterior portion.(*n*) Underneath the scalp and the pulmonary pleura, on the lining membrane of the heart and aorta, and in the mucous membrane of the larynx and trachea, within and upon the thymus gland, bloody points, spots, and stripes, resembling ecchymoses, but more strictly circumscribed, may be found, which are probably due to the efforts of inspiration made when no air can enter the lungs, and when of course the struggle to breathe forces the blood through the walls of the vessels. The permanence of these spots renders them valuable signs. M. Tardieu found them under the pleura of a fœtus which had been for ten months in a privy well. Frequently, but not in every case, a pale-reddish foam is found in the trachea and bronchia, the lining membrane of which is pale or dusky, according to the condition of the lungs. Congestion of the kidneys is another and peculiar indication of this mode of death. On the other hand, projection of the tongue between the teeth is far from peculiar to death by suffocation, and the same remark is true of foam upon the lips. It is evident that the greater number of these signs are valuable only in proportion to the

(*m*) The following case proves the necessity of caution in regard to the significance of such spots. A watchmaker, aged fifty years, was found dead upon the floor of his chamber, at nine o'clock in the evening. He had not been seen since the previous evening. During the day several persons had knocked at his door in vain, and it was at last perceived that a forcible entrance had been made. This circumstance suggested that the man had been assassinated. On examining the body, no trace of violence was discovered, but upon the neck and chest were many spots resembling those of purpura; no similar spots were found in the pleura. The brain and lungs were strongly congested, and the tongue and lips were wounded by the teeth. It was clear that death had occurred in an epileptiform attack, and the man was found to have formerly been subject to this disease. Robbers, supposing the occupant of the room absent, had effected an entrance, but probably alarmed at the sight of the corpse, had fled.—*Annales d'Hygiène*, 2ème sér., iv. 389.

(*n*) Annales d'Hygiène, 2ème sér., iv. 378.

freshness of the body; when once decomposition has set in, they gradually lose their distinctness and their significance. It will be observed, also, that the above signs are those merely of asphyxia in general. In hanging, strangulation, and drowning, there are one or more signs characteristic of the agent by which life is extinguished, the presence of which, together with the general signs of this kind of death, is almost if not quite conclusive. But in other modes of suffocation, if any trace of the instrumentality by which death was produced is found, it will be most probably due, in homicidal cases, to haste on the part of the assassin, and yet cannot afford any addition to the medical evidence. Thus, if a person have been smothered with the bedclothes, or suffocated by a hand held before the mouth, or by compression of the chest, a distinct and satisfactory indication of the fact will seldom be had. For this reason the medical examiner will often be at a loss whether to ascribe the death to natural or to violent causes. The case may be one of apoplexy, of faucial disease, or of pulmonary congestion, or may be due to a variety of accidental causes, not apparent without a careful inspection of the body. This must, therefore, in all cases where it is important to remove doubt, be conducted in the most careful und searching manner. The absence of any characteristic mark to indicate the mode of death gives a latitude to conjecture, and to the proposition of general questions, which, in case of trial, will seriously embarass the physician. If no accidental cause, such as a foreign body in the larynx, nor any evidence of disease fatal by the production of asphyxia be discovered, the physician should still be guarded in his opinion, and leave the explanation of the manner of the death to those whose duty it is to investigate the collateral evidence. This is of greater weight than the medical testimony, for while the physician has merely to declare the probability of the person having died suddenly by suffocation, the collateral evidence must establish the instrumentality by which the act was done. In cases where marks of other violence are found upon the body, or the hands and feet are tied, these facts will, of course, require an interpretation from the medical witness. When a dead body is discovered in sand, earth, ashes, or similar substance, the question whether the person was alive or dead when placed there, must arise. From experiment and observation, M. Tardieu concludes that if the substance has reached the œsophagus or stomach, it must have been during life; and that if the body was buried after death the substance will seldom penetrate beyond the entrance of the mouth and nostrils; some traces of it may occasionally be found in the fauces, and quite exceptionally in the air-passages, but in the œsophagus and stomach, never.

§ 895. II. *Accidental suffocation.*—M. Tardieu distributes cases of suffocation into four groups: 1. When the mouth and nostrils are obstructed by the hands or other foreign body; 2. When death is produced by pressure upon the chest or the abdomen; 3. Burial in earth, sand, ashes, snow, &c.; 4. Inclosure in a narrow space, as a box, or closet, &c. The modes in which accidental suffocation occurs are very numerous. They bear, however, only upon the question of survivance. In those cases in which persons are buried alive under banks of earth, covered up in the ruins of falling houses, or in any way

confined in a narrow space in which the air becomes unfit for the sustenance of life, they perish by suffocation.

Those, however, in which a foreign body becoming impacted in the air passages causes death by suffocation, are more important, because often the cause of death is not at all suspected. This accident happens usually from over-haste in eating, but an instance has been reported in which it occurred probably during the act of vomiting. The case was an unusual one, from the fact that the man who fell a victim to the accident was entirely alone at the time of his death. Hence, a suspicion of violence might have been entertained, had not the evident cause of death, the vomited food, been found in the larynx.(*o*) A case of fatal asphyxia has occurred from the detachment of a diseased bronchial gland which became impacted in the larynx,(*p*) and another, in which a lumbricus ascended from the stomach and entered the larynx.(*q*) A case is recorded of a child,(*r*) three years of age, who while eating her dinner was suddenly seized with symptoms of suffocation, the face becoming turgid, the lips livid, and the respiration seemingly arrested. A probang was passed to the stomach, and tracheotomy performed, but no reaction took place. On examination after death, a constriction of the lower part of the œsophagus, reducing its calibre to that of a quill, was found, but the stomach was filled with food. The vertebræ from the fifth to the ninth dorsal were softened or broken down, and the corresponding portion of the spinal marrow was surrounded with scrofulous matter. In this disease the cause of the suffocation probably originated, but its mode of action cannot be explained. The case, however, supposing it to be accurately reported, presents a mode of suffocation hitherto without example. Children are peculiarly liable to suffocation from the introduction of peas, marbles, &c., into their mouths. In the great majority of these cases, however, as well as in those of sudden death from diseases which leave the aspect of suffocation upon the body, the cause of death will be known, and no examination required. Cases also sometimes occur in which persons, helpless from age, infirmity, or intoxication, are found with their face buried in dust, snow, and other such substances. The cause of death is here self-evident, since the slightest effort would have enabled the person to escape. Still another form of accidental suffocation may be mentioned as occurring to young children, in being overlaid by persons with whom they sleep.(*s*)

§ 896. III. *Suicidal suffocation.*—The possibility of suffocation being made a voluntary act, is undoubted; but this mode of suicide must be extremely

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(*o*) Henke's Zeitsch. 1853, 4 H. A similar case may be found in the Ed. Med. and Surg. Journ. April, 1844, p. 390, and a more recent one, in the Lond. Times and Gaz. April, 1859, p. 419. In a case related in the Lancet (March, 1850, p. 313), a person having died suddenly after eating, previous to which he had been engaged in a scuffle, the man with whom he had been fighting was arrested on a charge of manslaughter. A post-mortem examination disclosed the cause of death to be a piece of meat wedged in the throat. The prisoner was therefore discharged.

(*p*) Edwardes, Med.-Chir. Trans. xxxvii. 151.

(*q*) Aronsohn, Arch. Gén. Oct. 1855, p. 475.

(*r*) Times and Gaz. July, 1855, p. 88.

(*s*) The Prussian penal code provides punishment by imprisonment for mothers and nurses who take children under two years of age to bed with them.—Casper.

uncommon. The only manner in which, without the aid of others, it has been accomplished, is either by an alleged retroversion of the tongue (a power which few if any possess), or by a mechanical obstruction of the mouth and fauces, with various articles. In the latter case, the presumption will, of course, be in favor of homicide. Several instances of the sort referred to are related by Dr. Taylor, who also quotes the remarkable case of a woman who placed herself in bed under the bedclothes, and desired her young child to pile several articles of furniture upon her. When found, some hours afterwards, she was dead.

One of the most remarkable cases of suicidal suffocation occurred in Germany. It is related by Dr. Roth, and the following is an abridgment, in the Lond. Med. Gazette, from the original, in Henke's Zeitschrift :—

The deceased was well formed, about the middle height, and about 25 years of age. She had been seen to retire to her sleeping-room, at nine o'clock one evening, in her usual state of health and spirits. The apartment was only separated by a partition from the one in which her master and mistress slept, and was over a room occupied by others of the household. At half-past five o'clock on the following morning, the master knocked against the partition to awaken H., but receiving no answer, supposed she had risen and gone out to her work. On getting up, however, he found all the doors and windows of the house closed, when he went into the servants' room, but did not find her there. On the bed was an axe of a peculiar shape, employed in that part of the country for clipping off branches from the trees, and which used to hang behind the door. The blade of the axe rested against the back of the bed, and the handle on the bed. Beside it lay the best bonnet, which she used to keep in her chest. The bed appeared to have been slept on. After searching the well, lest she had drowned herself, H.'s father was sent for, from a neighboring village. On his arrival, he suggested that the chest should be opened to learn in what trim his daughter had left the place. Finding the chest locked, and the key missing, a blacksmith was got to force it open, when the body of the servant was discovered in the chest, lying in a prone position, on the left side, with its knees drawn up, the upper extremities flexed, and the missing key grasped in the right hand. The chest was about four and a half feet in length, and of proportionate depth. It locked itself on the fall of the lid, and could not be opened from the inside. The corpse was nearly dressed, and the vest (camisole) was put on with its inner side out. On the following day, the body, which had been removed and laid on a bed, was viewed by the reporter. The cuticle was abraded and reddish-brown at seven or eight points, about the centre and upper part of the forehead. The largest of these abrasions corresponded with the thick part of the axe, and underneath them, the integuments were slightly swollen and bluish. The face and upper part of the chest were mottled with cadaveric lividity, the ears were blue, the eyelids closed, the conjunctivæ injected, and the pupils dilated. There was bloody froth about the lips and nostrils, partly dry, partly fresh, and giving this part of the face a blood-stained appearance. Bloody froth was issuing at the time from the right nostril. The mouth readily opened, showing the tongue in its natural position. The key was still grasped in the right hand. With the

exception of the abrasions on the forehead, no traces of injury were detected on the body. The clothes were entire.

From the foregoing circumstances, the reporter was of opinion that the deceased had employed the axe which hung in her room, to kill herself, in the way she had seen others slaughter oxen, and that, failing in the attempt, and, perhaps, ashamed of the injuries on her forehead, she had then shut herself up in her chest, and perished by smothering. This conclusion satisfied the law authorities so completely, that they decided that there was no necessity for making a *post-mortem* inspection.

§ 897. IV. *Homicidal suffocation.*—Those who are usually the victims of this form of murder, are infants and the aged, or those who are otherwise helpless. So slight a degree of resistance is necessary to defeat the purpose of the assassin, that a great disproportion of strength must exist for the attempt to be successful. Nevertheless, those miserable wretches, Burke and his accomplices, reduced murder by suffocation to a system, choosing it as the mode of death most likely to leave no marks of crime behind it. The murderer bore with his whole weight upon the breast of his victim, and with his hands covered forcibly the mouth and nostrils till death came on. The body of one of the victims presented, according to Dr. Christison, so few traces of injury, that without the assistance of proof from other sources, it would have been impossible to have declared that the death was not a natural one. In a case related by Dr. Casper, the body of a rich old lady, who lived in one of the most frequented streets of Berlin, was found one morning, in her bed, her head buried among the pillows, and heaped over with bedclothes. Her hands were tied fast behind her back, and her legs bound together by a band, including also her under clothing. The room being warm, the body was rapidly decomposing, the head was blackish green, and the epidermis was loose. At the same time the eyes were prominent and injected, and the tongue swollen and protruding. Some marks were found upon the neck, which, being hard and distinct in color from the surrounding skin, were thought to indicate an attempt at strangulation. Everything was in the greatest disorder in the chamber, the drawers and cabinets being rifled of their contents. The opinion of the examiners was that death resulted from asphyxia, produced both by strangulation and suffocation.(*t*)

(*t*) The following is an extremely interesting case in this connection; it is reported by Dr. Charles A. Lee, in the N. Y. Journal of Medicine, July, 1844:—

A case of trial for murder, by *suffocation*, lately came before the Court of Oyer and Terminer of the City of New York, Judge William Kent presiding, in which William Leitga, the prisoner, was accused of thus destroying his wife, and afterwards setting fire to her bed, by which the body was considerably burned before the fire was discovered and arrested. It appeared in evidence that they had lived very unhappily together, both being addicted to habits of intemperance, and had been quarrelling at one or two o'clock in the morning on which the fire took place (it being discovered about six o'clock), the deceased was found lying on a cot, a little on her right side, with a large pillow over her feet, but not covering the whole head: the arms bent up and lying across the breast under the pillow, which was partly burnt—her limbs were burnt to the knees, and also her right arm, the rest of the body not much burnt—the countenance was distorted, the eyes open, and the tongue protruded from the mouth nearly an inch. The cot on which she lay was about four feet from the stove; there was no appearance of fire between the cot and the stove; but everything showed that the fire had commenced at the foot of the cot and worked up: an empty lamp lay on the floor

§ 898. Still another circumstance under which death may be accomplished by suffocation, will be found in some cases of rape. An instructive example

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about three feet from the foot of the cot—bedclothes were lying about the room, and everything indicating that there had been a violent quarrel. As the testimony of Dr. Rogers contains the principal facts in the case, we present it in detail :—

Dr. James L. Rogers testified, that "he saw the body about 8 o'clock in the morning of October 29th, 1843; the body was slightly inclined to the right; the arms were up, inclining to the breast, but not on it; the lower part of the right arm and hand were burnt to a crisp; the hair was burnt off the top of her head; the left cheek was burnt on a place about as large as half a dollar; the transparent part of the left eye was scorched; the body was burnt across the stomach down; below the knee the flesh was burnt almost entirely off—above the knee to the abdomen, it had the appearance of a ham being smoked; there was no burn on any other portion of the body except the left ear; the mouth was not burnt; the tongue protruded; the countenance perfectly calm; no mark was perceptible about the neck or any other place, except a small flesh wound in the right side of the eye. On dissection, the brain was found perfectly natural—stomach also healthy, containing about two spoonfuls of liquid matter; the bowels were perfectly healthy, as were the kidneys, except that they all appeared somewhat congested; the lungs and heart were healthy, but the vessels of the lungs were deluged with dark venous blood, as was the right side of the heart; the left side of the heart was nearly free of blood."

The District Attorney asked, What was his opinion of the cause of death?

Witness.—"In the absence of all natural causes, of which there were none, I should say she died from stoppage or prevention of air from the lungs; it may be called *suffocation:* the same appearances would be produced, either by the breath being stopped by something placed over the nose and mouth, or by drowning. I observed no appearance of intoxication; I think I never examined a body where there was a more healthy appearance than that presented. Where there is a dense smoke of carbonic acid gas from the burning of charcoal, the same appearances of the lungs and heart would exist in some measure, but not so fully, as the air in such cases continues partially to have effect. The fact that one eye was burnt, the placid state of the countenance (this was denied by other witnesses who first saw the body, and can hardly be presumed from the protruding of the tongue, &c.), and the position in which she lay, led to the conclusion that she must have died before the fire. The probability is, that if the person had been alive when the fire reached her, she would have shut her eyes, and one of them would not have been burnt. There was no blister in the eye, as there would have been, had it been burned during life. There was also no red line on the body to where the fire came, which is also a very certain sign of burning before death."

Cross-examined.—"In the case of a person who dies of suffocation there is a congestion of the brain; the eyeballs are distended, and there is at all times" (in drunkards dying thus) "a smell of alcohol in the stomach and brain."

Mr. Brady asked the witness, if a person got intoxicated and in a position to prevent respiration, whether the same appearances would not be presented, as in the present case?

Witness.—"It would depend upon this position. If the head was down and respiration stopped there might be a paralysis; it is very difficult for persons to suffocate themselves. If paralysis did occur from intoxication, the brain would show it; but there was no appearance of the kind in the present case at all. There was hardly the usual quantity of water in the brain."

Brady.—"Could not this woman have got so beastly drunk, that she might have got in a position to suffocate?"

Witness.—"Such might have been the case, but it would show itself in the brain."

Brady.—"Would you say, that she did not go to bed drunk that night?"

Witness.—"In the absence of all appearance or symptom to that effect, we were induced to believe that there was nothing to justify a supposition of the kind. If a person died of intoxication, the brain would show it, and in persons habituated to intoxication, there would be a morbid appearance about the stomach and lungs—a bloated countenance, and other marks which would distinguish it. Suffocation and apoplexy present different appearances after death; in the first case the lungs cease their functions for want of air, yet the blood passes to the brain and returns, as there is nothing in the neck to prevent it; but in apoplexy or strangulation, as in the case of a cord round the neck, the blood stops and the brain exhibits the effect. In suffocation, the breath may be stopped in a minute or half a minute, so that a person would cease to struggle, and in ten minutes be dead. There was an indentation of a key on the left breast of the deceased, which might have been made by a heavy arm pressing on it."

of this kind will be found in the following German case. In it, the subsequent confession of the criminal confirmed the accuracy of the opinion given by the

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Dr. Putnam testified to nearly the same effect. He said: "That none of the viscera exhibited any marks of intemperance; that if death had been so caused, the brain, stomach, and countenance would show it; the brain particularly would be congested. In death by strangulation, there would probably be proof of violence perceptible about the neck, and the tongue would ordinarily protrude; it generally produces apoplexy. Suffocation may be produced by stopping the respiratory organs, or by inhaling gases. To distinguish which of these causes, one must know the attending circumstances. A person dying of suffocation by inhaling carbonic acid gas, would exhibit some change of countenance. I saw nothing in the body externally or internally, that could account for death. Taking everything into consideration, I conclude the death to have happened from suffocation. A pillow laid over the nose and mouth, produces such death in two or three minutes, without external marks. I believe the fire to have been communicated to the body after death."

Cross-examined.—"My opinions have been formed from reading; never attended but four post-mortem examinations; never of one who died from suffocation from any cause. Congestion of the brain would certainly be found after death from intoxication; so would also inflammation of the stomach. Post-mortem examination was made at 11 o'clock A. M. Stomach appeared as if she had not eaten for six or eight hours; had she gone to bed drunk at one or two o'clock the night before, should expect to find evidence of the fact. I should not expect to find a morbid state of the stomach in the case of a person who drank *moderately*, that is habitually, but not to intoxication; never read of a case of strangulation without marks of external force; whether the tongue protrudes or not, depends upon the peculiar way in which the exterior force is applied. Suffocation may happen accidentally, by getting into a position in which it is impossible to breathe; this is the case often with infants; it is not impossible that this might occur in the case of an adult, in a case as helpless as a child, but the probability is against such an occurrence. In the case of a person in a room where there was smoke, or gas, or corrupt air of any kind, a drunken person's death might be much expedited. In cases of death by noxious gases, the tongue is usually more or less protruded, and there is more or less frothy appearance about the mouth. In ordinary suffocation, not by gases, &c., it is rare that the tongue protrudes; in cases of violent suffocation it is not common; difficult to say, on a post-mortem examination, whether the person died from violent or accidental suffocation."

Physicians, as usual, were called on *behalf* of the prisoner, and some conflicting if not opposing opinions were advanced.

Dr. Archer (Coroner).—"Thought that the burns had been inflicted after death; saw the stomach, thought it did not look entirely healthy, as there was a turgid appearance of the vessels, showing that it had been a good deal stimulated. There was no pink margin around the burns; never found an exception of death from burning that there was an absence of the pink margin; did not consider it a sign of suffocation that the tongue protruded; thought the eye was burnt after death. In death from carbonic acid the countenance is generally placid, and it is not common for the tongue to be protruded; the brain and lungs are more or less congested; if there are no external marks, no person can say positively whether the persons died from natural causes or from violence. If a person dies after a debauch, I should expect to find evidence of it in the brain or stomach. It is impossible to say how long after a person has been drinking, its traces would be lost from the system; when the effect is gone, however, the liquor is gone."

Dr. Ramson testified that "he had attended post-mortem examinations in cases of death from suffocation, and lately, where two persons were suffocated by charcoal; their countenances were swollen, and the eyes somewhat protruded: there was a distortion of features (one more than the other, as the patient lay on his face); in cases of suffocation, the brain is generally congested and the blood blacker in the different vessels than in ordinary cases, and the lungs more or less congested; countenance more or less distorted; in such cases should judge more from the blood in the arterial system, than from the brain; there is no particular condition of the heart, except there is black blood."

The testimony of Dr. Middleton Goldsmith was to the same effect.

In summing up the case, Mr. Warner, the counsel for the accused, among other remarks, said, that the medical testimony did not agree, and that it was filled with doubts and uncertainty. "The positiveness," he observed, "with which medical men give their testimony, is to be ascribed to the care they have of their own reputation in their profession, and to the fear they have of seeming ignorant of their profession. These witnesses disagree as to the indications of intemperance presented by the sto-

medical officer, which was, that after a struggle the woman had been overpowered and forcibly compelled to submit to the desires of her ravisher; who at the same time held his hand over her face to prevent her crying for help. In doing so, however, he had, according to his own story, unintentionally suffocated her. The body of the deceased, in this case, presented the signs of asphyxia in a marked degree, the face being purple and turgid, the eyes injected, the lips and tongue swollen and livid, and the fingers convulsively clenched. The lungs were perfectly black with blood, and so distended that, upon incision, the blood escaped in profusion; the vena cava and right side of the heart were also gorged with dark, but *coagulated* blood. The cerebral veins and sinuses were not remarkably full. If the crime had in this instance been unconnected with rape, it is probable that some marks of violence would have been found, but the weight of the man's body, no doubt, as well as other causes, contributed to the ease with which the suffocation was accomplished.

A curious case of suffocation, unintentionally produced, is given in the *London Lancet*. A lad, eighteen years of age, was, by way of joke, forced head downwards into a sack containing about a bushel of bran, by two of his fellow-laborers on the farm. According to the testimony of one of the parties, who were at the same time the perpetrators, and the only witnesses of the outrage, the mouth of the sack was tied with rope-yarn round the legs of the lad. This was almost immediately cut, and the boy released from the sack. He was reported to be black in the face and frothing at the mouth, but became sufficiently sensible to drink a small quantity of water. He breathed, however, with great difficulty, remained insensible, and lived only twenty minutes after being extricated from the sack. Upon post-mortem examination, it was found that sixteen hours after death the thorax and abdomen retained a considerable degree of warmth. At the bifurcation of the trachea a large quantity of bran was found; the left bronchus was entirely filled with it, and the right nearly so, and their subdivisions, as far as they could be traced into the substance of the lungs, were full of the same material.(*u*)

The following interesting and curious case occurred at Edinburgh in 1855: Janet Stewart, between 60 and 70 years of age, lived in the family of her niece, consisting of three adults and a child besides herself. All were grossly addicted to intemperance. Janet was found dead with a contused and lacerated wound of the scalp, extensive emphysema beneath the skin of the trunk and in the chest,

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mach of the deceased. Dr. Archer alone said any. The fact will appear abundantly that she was very intemperate," &c. *Mr. Brady* quoted from Beck's "Medical Jurisprudence," where it is stated that most physicians are not competent to make post-mortem examinations, and hence argued that those who made the dissection in the present case, were probably incompetent! *Judge Kent*, in his charge, came to the conclusion, after a full recapitulation of the testimony, that, first, *nothing positively certain was shown as to the cause of death; and, second, nothing positively excluded the idea that it was occasioned by suffocation—the probability being in favor of the latter.* The judge also instructed the jury that unless they found the death was occasioned by *smothering*, no matter in what way effected, they could not find the prisoner guilty; although they might come to the conclusion that the deceased perished from burning, or in some other manner, not stated in the indictment, and by the hands of the prisoner. *Verdict—Not Guilty.*

(*u*) Another case in many respects similar to this one is reported by Raymond and Devergie. Ann. d'Hyg. July, 1852.

and seven ribs of the left side fractured. The face was pale and slightly swollen, the features composed, the eyelids shut, the lips nearly closed, and the tongue slightly protruding. On examining the neck a hard mass was felt at the back part of the throat, which proved to be the cork of a quart bottle, tightly inserted into the upper part of the larynx, the sealed end being uppermost. It was covered with a frothy brown mucus. The epiglottis, larynx, and trachea, were considerably injected. The last with the bronchia presented a bright florid appearance, and their whole surface was coated with mucus. By experiments on the dead body it was ascertained that when a cork, such as had here been found, was pushed along the mouth against the cervical vertebræ, the upper end was forced backwards, while the lower end was tilted forwards, and by continuing the pressure made to enter the larynx. It was hence concluded that the attempt to kill indicated by the wound of the scalp, and the fractured ribs, had been successfully completed by suffocation by means of the cork, the frothy mucus around this body and the redness of the mucous membrane proving that death had not immediately followed its introduction. One of the party who was indicted on the testimony of the rest as the author of these outrages, was tried. The jury returned a verdict of "Not proven;" but a few weeks afterwards a body believed to be that of the prisoner was found floating in the Clyde.(*v*)

In infants, murder by suffocation is undoubtedly very common, it being very rapidly effected, and leaving no characteristic traces behind it. Death, thus criminally produced, has often been attributed to convulsions.

CHAPTER IX.

STRANGULATION.

I. Cause, § 899.
II. Marks, § 900.
III. Period, § 901.
IV. Accidental, suicidal, or homicidal.

§ 899. I. The *causes of death* in simple strangulation, as in that which is complicated with suspension, are an interruption of the access of air to the lungs, by pressure upon the windpipe, and congestion of the brain from the impeded return of the blood to the heart through the jugular veins. The first of these causes, is in hanging, the efficient and principal one, but in strangulation, owing to the more complete constriction of the neck, especially where a cord is used, the cause last mentioned certainly greatly accelerates the fatal result. The constriction varies with the band and its adjustment. Sometimes a rope is used, sometimes a handkerchief, a strap, a ribbon, or a strip from the bedding or some article of clothing. Sometimes it is wound several times around the neck, in others twisted like a tourniquet with a spoon, knife-handle, or some similar body. But throttling by the hand

(*v*) Edinb. Med. Journ. i. 511.

is by far the most frequent mode in which the violence is employed, especially in cases of homicidal strangulation. The aspect of a person who has been strangled resembles, therefore, more closely that which was formerly described as characteristic of hanging, viz., a livid and swollen condition of the face, staring eyes with dilated pupils, and protruded tongue. The swollen features, the neck, chest, and eyes, are studded with minute ecchymoses which are very characteristic of death by strangulation, when they exist, and they do so whenever the violence applied has been great and the struggle protracted. The other and internal post-mortem appearances are sometimes incorrectly said to be those of death by asphyxia. The lungs and right cavities of the heart are not usually filled with dark fluid blood, the abdominal organs and especially the liver and kidneys are not congested, and the mesenteric veins, and the vessels of the head are not always engorged. M. Tardieu states that an intervesicular emphysema resulting from a rupture of the pulmonary vessels is an almost constant phenomenon. It gives the surface of the organs the appearance of being studded with very white pseudo-membranous spots of variable dimensions. Sub-pleural ecchymosis which is characteristic of suffocation is not met with, but in its stead apoplectic nodules in the tissue of the lung measuring from half an inch to an inch and a half in diameter. If death have been caused by suffocation combined with strangulation, punctated ecchymoses under the pulmonary pleura will be found in addition.(*w*) In young children much reliance is placed by Dr. Casper upon the existence of petechial ecchymoses upon the pulmonary pleura, the heart and aorta. Actual extravasation of blood upon the brain is, however, of very rare occurrence, if, indeed, it ever appears as a direct result of the strangulation. This fact is of considerable importance in many cases, since in death by apoplexy, the turgor and discoloration of the countenance may occasionally lead to a suspicion of homicidal strangulation, especially if any questionable traces of constriction be discovered upon the neck.

§ 900. II. *Marks of violence upon the neck.*—These are far more evident and important than in hanging, because in homicidal strangulation more force usually is employed than is necessary to accomplish the object of the murderer. If the strangulation have been effected with the hand, the marks of the fingers will be found upon the front of the neck; and sometimes by the form, number, and arrangement of the marks it is easy to determine which hand was used to make the constriction. If by a cord or other ligature, the mark will be nearly horizontal, more or less distinct, and generally ecchymosed. The differences between the slight marks produced by strangulation as compared with those caused by hanging, depend upon the continuity of action of the compressing cause in the latter case, and also in some cases, as in those of infants and aged persons, upon the small degree of force required to arrest the breathing. Subcutaneous extravasation is not always found. In a case of suicidal strangulation examined by Dr. Casper, in which the ligature consisted of a pack-thread wound thrice around the neck and tied fast over the larynx, the mark was but slightly depressed, and only consisted of a single line broad, white, and here and

(*w*) Annales d'Hygiène, 2ème ser. xi. 133.

there tinged with blue.(*x*) The subjacent parts will present traces of injury corresponding to the violence which has been used. The condition of the more deeply seated organs of the neck cannot be at all inferred from the state of the skin which covers them. M. Tardieu has shown that even when no external bruise exists, effusion of blood may be discovered beneath the skin, among the more deeply seated muscles, and even upon the larynx and trachea, or, if the hand has been used to effect the compression, the effusion may extend to the upper part of the neck and the chest. Two cases are referred to below in which the ossified thyroid cartilage was fractured, but these lesions are unusual. The interior surface of the larynx and trachea is usually congested and of a uniformly red or violet color, and bathed with frothy and bloody mucus which extends also to the smaller air-tubes. We are not acquainted with any case in which laceration of the carotid artery has been found after death by homicidal strangulation. But as this lesion can be produced by imitating strangulation on the dead body,(*y*) it is also probably one of the occasional effects of the homicidal act.

The distinction of the signs of apoplexy from those of strangulation consists essentially in this, that in the former none of the derangements which have been described of the parts beneath the skin can be detected. The proofs of strangulation are also different from those of hanging. This distinction is important chiefly when a dead body is found suspended; for it must be remembered that this position generally denotes suicide, while strangulation as ordinarily indicates death by homicidal violence. The cases most apt to be confounded are those in which strangulation has been effected by a cord or similar constricting band. The obliquity of the mark has been generally insisted upon as proving death by suspension. But when the whole weight of the body has not exercised its traction this sign may fail, and on the other hand the complete circular mark is often wanting even where strangling has been the cause of death. In the latter case, also, the constricting band or cord leaves a comparatively slight impression, while in the former a deep furrow is produced. But in strangulation the injuries to the soft parts beneath the skin are very marked, while in hanging they are comparatively slight as a general rule. The discharge of fæces, urine, and semen, which has been regarded as peculiarly the effect of death by hanging, may result from almost any form of violent death, and occurs in many forms of natural death when the bodily vigor is not greatly impaired.

The signs of death by strangulation differ from those of death by suffocation, in this, that the latter are observed about the nostrils and the mouth, and not upon the neck; but in many cases the evidences of both forms of violence will be found combined.(*z*)

§ 901. III. *Was the strangulation effected before or after death?*—This question is one of inferior practical importance. The object of any one in applying a ligature around the neck after death, would be, of course, to convey the idea that the person had committed suicide. As, however, this mode

(*x*) Gericht. Leich. 2tes Hund. 1854, Fall. 59.
(*y*) Simon, Virchow's Archiv. xi. 297.
(*z*) Tardieu, loc. cit.

of self-destruction is extremely uncommon and usually attended with circumstances which betray it, the presumption in the case of a person found strangled, is that the deed was committed by another. Hence the probability of suicide, which obtains in hanging, from the frequency with which this mode of self-destruction is chosen, is, in cases of strangulation not to be entertained, unless direct or circumstantial evidence supports it. Moreover, the cases in which it may be possible to admit the suspicion of suicide, are not those in which any doubt can be entertained, because, if the cord have been placed upon the neck merely for the purpose of concealing the fact of murder, the means by which life really has been taken will not fail to be revealed. Thus, marks of fatal violence will be found upon some part of the body, or traces of poison in the stomach. Yet, if any doubt should still remain of the truth of these considerations, it only remains that the signs of death by strangulation cannot be closely imitated after death. We have seen above, that when death has resulted from this cause, not only will the marks of the fingers or of the constricting band be found of various depths and of different degrees of discoloration, but also that the aspect of the countenance taken in connection therewith as well as the internal signs of death by asphyxia will indicate the mode of death. Although the experiments made upon dead bodies by Dr. Casper show that if the attempt to imitate the mark of strangulation were made six hours after death, it would be unsuccessful, yet, as the attempt would most probably be made *immediately* after death, and even before life was quite extinct, it is evident that any satisfactory conclusion can be drawn only from an examination of the mark, *in connection* with the other signs of asphyxia. These cannot be produced after death, and we may, therefore, be certain where we find a mark indicating strangulation, and, at the same time, the face purple and congested, the tongue protruded, the eyes prominent and the other indications of death by apnœa, that the individual has been strangled during life. This will lead us to the question,

§ 902. IV. *Was the strangulation accidental, homicidal, or suicidal?*—A few cases of accidental strangulation are upon record. Dr. Taylor relates that a girl was accidentally strangled in the following way: "She was employed in carrying fish in a basket at her back, supported by a leathern strap passing round the fore part of her neck, above her shoulders in front. She was found dead, sitting on a stone wall; the basket had slipped off, probably, while she was resting, and had thus raised the strap, which firmly compressed the trachea. A similar case is recorded by Watson (Homicide)." Should the body not have been removed from the position it occupied at the time of death, and if the evidence of veracious and disinterested witnesses relative to this fact can be obtained, there will seldom be any hesitation in admitting the possibility of the accident.

The allegation may, however, be made for the purpose of concealing crime. A person who, in a state of helplessness from intoxication or other cause, has fallen into a position in which his throat becomes compressed by a tight cravat, may possibly thus die accidentally of strangulation. But if marks of constriction be found upon the neck, it is much more probable that they were

caused by criminal violence than that they were due to accident. As in courts of law undue stress, medically speaking, may be laid upon the possibility of strangulation marks being accidentally produced, the medical witness will do well to compare closely the impressions upon the neck with the ligature supposed to have produced it, as in many cases an important and conclusive discrepancy will be found.

§ 903. *Suicidal strangulation.*—Were there not a sufficient number of well-attested cases of suicide by strangulation upon record, it might fairly be doubted whether it were possible for persons voluntarily to destroy themselves in this manner. But the annals of legal medicine abound with examples of the most determined tenacity of purpose, and the most singular choice of modes of death upon the part of suicides. Without dwelling upon this fact, it may be stated that in this mode of death an infirmity of purpose is less likely than in many others to frustrate the intentions of the suicide. Unconsciousness steals in such an insidious but rapid manner over the senses, that the will and power to escape are speedily lost.

The ligature used by those who thus destroy themselves is generally chosen from those articles of dress which lie nearest at hand, as cravats, garters, and the like. The knot will most probably be found in front, or a little to the side, and the mark left will convey the idea of less violence than will that made in homicidal cases, where no other injury has been inflicted. The question often arises, says Casper, whether the mark upon the neck has been caused by a certain instrument which is supposed to have been used. This question it is not always easy to answer. It is true that hard, rough substances, cords, &c., usually produce excoriations, which is seldom the case with softer ones. It is also true, as a general rule, that the breadth or diameter of the mark upon the neck corresponds to that of the instrument used. But many exceptions occur to these rules. The instrument may be of a soft texture, and yet have rough edges; it may be twisted, and the sides press against the neck, &c. Some light may often be thrown upon cases of murder or suicide by hanging, by observing what kind of a knot is tied in the ligature, as it is known that different classes of tradesmen are in the habit of tying knots in a way peculiar to themselves.

A remarkable instance, showing the rapidity and ease with which self-strangulation may be effected, is the following. A gentleman was placed in a private insane asylum. His relatives desired the superintending physician to use every endeavor to prevent him from committing suicide, as he had repeatedly attempted it. In consequence of this request, two attendants were placed near him. Fatigued with the long journey he had made, the patient desired permission to retire to bed; the two attendants remained at his bedside. A short time after, at his pressing solicitation, these men were directed to leave his bedside, but still remained in the room, keeping a close watch upon him. In two hours afterwards the physician paid a visit to his patient. The attendants remarked that he had been and was still sleeping quietly, and had not stirred. Upon approaching the bed, however, and proposing a question to the gentleman, no answer was received, and, to their horror and surprise, he

was found to be dead. He had torn a strip from the bottom of his shirt, rolled it into a cord, and simply tied it around his neck.(*a*)

Mr. Pollock, in his evidence in the case of *Drory*, gave the following case: "Pizzala, an Italian, about fifty years of age, employed as a porter, was found dead in the forenoon of the 3d of January, 1851, in an attic of the house of his employer. He had been missing from his employment thirty hours. When found, he was lying on his back, rather inclining to the left side, with a piece of ordinary sash-line coiled *four times* around his neck, two of the coils so tight and imbedded therein that there was some difficulty in undoing it. The right hand held one end of the line, and the left hand the other, with a turn of line around each, to hold it the more securely. The right arm was extended, the left flexed. I made a post-mortem examination of the body on the fourth day after it was found. Externally, the face was swollen and purple, the vessels of the conjunctivæ were injected, the tongue protruded towards the left side, bloody froth issued from the mouth, and the lower jaw was slightly twisted to the left side. The skin of the neck was abraded in a nearly continuous line around it, about five-eighths of an inch in width, and presenting the appearance of being produced by two coils of the line. There was considerable ecchymosis above and below the line of abrasion. Each hand retained the impression of the line being coiled around it. *Internally*, the vessels of the brain and its membranes were greatly congested. The evidence before the coroner left no doubt of this having been a suicidal act. This case proves that a person may strangle himself, and that he may accomplish strangulation by pulling the two ends of a cord coiled several times round the neck; and that some degree of local violence to the neck may thus be produced by the ligature used."(*b*)

§ 904. We should not expect to find the mark of fingers upon the neck in suicidal strangulation. It has, indeed, been supposed that a person might endeavor to strangle himself with his hand, and, failing in it, afterwards resort to other more effectual means. We have not, however, met with any case which would bear out this view, and must consider such an attempt as highly improbable. In case an intoxicated person should fall into such a position that his cravat or the collar of his shirt impedes his respiration, he may instinctively carry his hand to his throat to remove the constriction, but it is more reasonable to suppose that his effort would be to draw *aside* and *away* from the larynx the collar which was pressing upon it, or unfasten it in any way than that he should imprint his fingers so deeply in the skin as to leave a visible mark.

An interesting case of suicidal strangulation is related by Dr. Simeons,(*c*) in which a sabre was used to tighten the ligature. The latter consisted of a cotton handkerchief tied in a hard knot on the side of the neck. The sabre had been inserted into a loop in front and evidently twisted several times upon its axis, so that the neck became very firmly constricted. The constriction indeed was so great that the sabre could not be extricated from the loop, until

(*a*) Ann. Méd.-Psycholog. tome iv. p. 113.
(*b*) Taylor, Brit. and For. Med.-Chir. Rev. April, 1852.
(*c*) Henke's Zeitschrift, 1843, H. i. p. 335.

it had been drawn out of the sheath, which was compressible. When the handkerchief was removed, it was found that a broad, deep, and ecchymosed impression had been left, which was still more marked and attended with excoriation in the point corresponding to the knot. The borders of the mark had a parchment-like appearance. The individual was a corporal, remarkably robust in constitution, and destroyed himself in consequence of having been put under arrest for neglect of duty. Collateral evidence rendered the fact of suicide unquestionable. A man about sixty years of age was found in a wood, a napkin around his neck, tightened by a walking stick twisted through a loop in it. When found, the corpse *was lying on its back, the lower limbs extended, and the arms straight and close by the sides*, the whole as if the body had been laid out artificially after death. There was, however, sufficient evidence that the man had strangled himself.(*d*)

Mr. Thorpe, in his evidence in the case of *Drory* already referred to, mentioned the case of a man who effected self-destruction in the following manner: "He passed a noose of cord over his head and then inserted a stick, about fourteen inches long, between the cord and his neck. Having done so, he, with the assistance of the stick, twisted the end sufficiently tight to cause almost immediate suffocation. Still, it appeared that there was time for him to insert the lower end of the stick in the inner side of the waistcoat, and the upper end was accurately adapted to the internal jugular vein and carotid artery." Other cases in which a stick was employed are on record. In this way General Pichegru died in prison, and was supposed to have been strangled by the orders of Napoleon. But the case was most probably one of suicide. The question of suicide will, however, seldom rest upon an estimate of the evidence from such circumstances as these alone, but rather upon the absence of marks of violence and other signs of homicidal interference.

§ 905. *Homicidal strangulation.*—The characteristics of homicidal strangulation will be found in the great amount of violence, the marks of which will be seen either upon the neck or elsewhere. The marks upon the neck will be either simply broader, deeper, and more ecchymosed than those which are met with in the rare cases of suicide, or will be attended with other local injury which could result only from the application of a rude and sudden force. A case is related by Casper(*e*) in which there was not only a brownish-yellow groove with reddened edges upon the neck, but also three ecchymosed spots, two at the angle of the jaw on the left side, and one on the right side of the jaw. These could only have resulted from outward compression, and they were supposed to indicate a grasp of the throat by the hand, the thumb leaving its impression on the one side and two of the fingers on the other. Without doubt, the murdered woman had been first seized by the throat, and then, after having been rendered senseless, was strangled by the ligature, the mark of which we have described. In a case communicated to Dr. Taylor by Dr. Campbell, of Lisburn, there was a mark on either side of the larynx, under which, also, in the substance of the muscles, coagulated blood was found.

(*d*) Br. and For. Med. Chir. Rev. xix. 301.
(*e*) Gericht. Leichenöffnungen, 1stes Hundert. 1853, Fall. 49.

The thyroid cartilage, which was partly ossified, was fractured through the ossified portion. The case was clearly one of homicidal strangulation with the hand.

An equally clear case is reported by Dr. Wilson.(*f*) The body of a woman, two days after death, presented the following appearances. The right cheek, and the lower part of the neck over the collar bones were deeply livid; the eyes were suffused and red; there was a circular contusion on the forehead; a hard and parchment-like yellowish-brown mark, about an inch and a half in length by half an inch in breadth, on the left side of the chin, running along the lower margin of the jaw; and another similar mark of nearly equal dimensions passed transversely across the throat immediately over the larynx. There were traces of blood which had flowed from the right nostril. There was an extravasation of blood among the muscles of the neck, and the thyroid gland was largely infiltrated. The trachea contained frothy mucus; blood was effused beneath the lining membrane of the larynx, there was a fracture of the right wing of the os hyoides, and the cricoid cartilage was broken in two places. Extravasated blood was found below the left mamma and greater pectoral muscle. The brain was congested. No other lesions existed. The probable interpretation of these facts was that the woman had been felled by a blow upon the forehead, that the murderer had then knelt at her right side, with his face towards hers, and his right knee across her chest, causing the effusion under the pectoralis major muscle; and then, pressing her head to the floor by his left hand on the left side of her chin, producing here another mark, he had grasped her throat with his right hand, and strangled her with violent pressure, either with the hand alone, or aided by a ligature. The husband of the woman, who was indicted for her murder, admitted that he was alone with her at the time of her death, which he explained by her falling while intoxicated. The judge objected to the medical evidence that it was "merely inferential," and the prisoner was acquitted! Upon which, Dr. Wilson quotes from Archbishop Whateley, "He who infers proves, and he who proves infers."

MM. Briand and Chaudé quote the case of a woman who was found dead in her bed. Some discoloration of the neck suggested the suspicion that she had hung herself, and that her family, to avoid scandal, had laid her body in bed. But a more attentive examination showed that the bruises were confined to one side of the neck, that the two horns of the hyoid bone were unusually movable, and that the thyroid cartilage was flattened; the cricoid cartilage was also broken across its middle. The brother-in-law of the woman afterwards confessed that he had attempted to violate her, and in order to stifle her cries, had grasped her by the neck until she ceased to live. He was found guilty of murder.(*g*)

A very interesting case is related by Dr. Gräff, (*h*) in which a woman was murdered by strangulation, and the assassin had taken great pains to convey the impression that the act was one of suicide by hanging. The body was found lying close to a door, with a string passed twice around the neck and

(*f*) Edinb. Med. Journ. i. 290.
(*g*) Manuel de Méd. Lég. 6ème éd. p. 393.
(*h*) Henke's Zeitschrift, 1846, p. 145.

fastened in a slip-knot behind. The impression made by it upon the neck was deep, and, for the most part, of a dark brown color, particularly on the sides. It was perfectly *horizontal*. The free end of the string looked as if it had been broken. There was a peg in the door over the body, on which a towel was hanging, not in the least disarranged; the peg itself was slight and incapable of bearing the weight of the woman's body. Furthermore, there was no portion of the string attached to it. An overturned chair lay near the body; and on a writing-table in the room, a paper was found declaring the intention of suicide, and purporting to have been written and signed by the deceased. It was clearly proved, however, that this document was not in her handwriting, nor correctly signed, and the fact of her having been murdered was abundantly shown by these attempts at deception, other marks of violence upon the body, and the subsequent discovery that robbery had been committed.

One of the most interesting cases of homicidal strangulation is that given by Dr. Taylor, in Guy's Hospital Reports for 1851. The prisoner was found guilty, and before his execution made a confession, in which he stated that he met the deceased by appointment, that they talked and walked about, after which, at her suggestion, they sat down on a bank. She had come to urge him to marry her. He passed a rope, which he had previously secreted, gently around her neck as they were sitting, and had got the end of it in a loop before she perceived it. She jumped up at once, and put up her hands to save her throat, but he pulled hard and she fell without a struggle. We have thought this case of sufficient interest to present a tolerably full abstract of it in the note, since it offers many incidental suggestions worthy of consideration.(*i*)

(*i*) "At the Chelmsford Lent Assizes for 1851, Thomas Drory was tried for the murder, by strangulation, of a female named Jael Denny. He was the son of a farmer of great respectability, and resided within a short distance of the cottage where the deceased lived. Both were about twenty years of age, and the girl, who was pregnant by the prisoner, had reached the ninth month of her pregnancy. On the afternoon of Saturday, October 12th, 1850, the prisoner and deceased were seen conversing together for about twenty minutes, in the neighborhood of the prisoner's cottage. This was about half-past five P. M. The evidence respecting *the deceased* showed, that about six o'clock on this day, she had tea with her parents as usual, appearing to be in good health and in high spirits. She told her mother that she had made an appointment with the prisoner to meet him at a stile very near their cottage, *at half-past six o'clock*, and the prisoner, it was supposed, had led her to expect that at this interview he would make some arrangement regarding his marriage with her. At, or about this time, the deceased left her tea half-finished, dressed herself hastily in some of her mother's clothing, left the house, and was not again seen alive. She was found next morning, at or about *eight o'clock*, lying dead in a field at a short distance from the stile, at which she said she had made an appointment to meet the prisoner on the previous evening.

"When her body was found, the head was cold, and the arms and legs cold and stiff; but the body (the abdomen) was perceptibly warm to the hand. It will be remarked, that from the time the deceased was last seen alive, thirteen and a half hours had elapsed.

"The attitude of the body when found is thus described by the different witnesses: The deceased was lying on her face, a little inclined on one side, owing probably to the prominence of the abdomen. Her lower clothes were arranged in a straight and orderly manner, and her fur-tippet was lying on the ground, two or three yards from the body. Her bonnet was on her head, but much crushed and broken. It was flattened in front as if from pressure from behind, while the deceased was on her face. Her face was flat on the ground, and her nose pressed down tightly. The nose is described as being quite flattened, and turned a little to the left side by pressure; it was impossible, in the opinion of one witness, that the mere weight of the head could

M. Tardieu reminds us that strangulation may be simulated by persons who have an interest in pretending to be the victims of violence. When this mode

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have produced either this degree of pressure, or the indentation observed in the ground. The features were so altered, that although this witness had known the deceased for four or five years, he could not recognize her. When the body was turned over, blood escaped or bubbled from the mouth, nose, and eyes; and the face was observed to be black, and much swollen. There was half a teacupful of blood on the spot where the face lay—under the mouth; and more blood in another spot about a foot from the head; the hair was matted together with blood and dirt. The right arm was lying bent at a right angle underneath the body, and pressed down by its weight; the left was raised, with the hand directed towards the left shoulder, but partly covered by the body. There was a cord on the neck, which was twisted round it three times. One of the witnesses took the third turn from off the neck, and observed that this turn was a little loose; but on putting his finger to the throat, he found a knot of cord lying in front of the neck. The remainder of the cord was very tight, a portion being actually imbedded in the neck, and the cord was drawn so tightly, that the skin of the neck had swollen up between the coils. From other evidence it appeared that the knot which formed the loop of the rope was pressing on the front part of the neck, while the bite of the noose was at the back part, a little behind left ear. There were *three coils and a half* of rope round the neck, and with the exception of the last half coil, all were tight; the two innermost coils being so tight as to indent and cut the skin. The end of the cord went over the back of the left shoulder, and about an inch of its extremity was lying loosely (without being grasped) between the thumb and finger of the *left* hand of the deceased, which was raised towards it. One witness described this hand as being stretched out a little, so that the end of the cord could be seen lying in the hand, before the body was moved or turned over. The deceased was *right-handed*; there was no mark of grasping, laceration, or indentation on either hand; and from the position of the bite of the noose and the direction of the coils, the cord could have been tightened only by pulling to the *left* of the deceased. The cord was stout, and of the thickness of a window sash-line. At the part where the noose had been tightened, the pressure had been so great that the cord was condensed to about half its thickness, and some of the fibres had been cut through by the force used. There was no blood upon it, except just at the end, where there was a small spot. The second coil had, at the back part, tightly locked in a portion of the apron of the bonnet and handkerchief of the deceased.

"A woman who undressed the deceased, six hours after the body was found, stated that she examined her face and found the mouth bubbling with blood; her tongue protruded out of her mouth, and was clenched very tightly with her teeth. Blood oozed from her eyes, mouth, and ears. Her body, from her head to the shoulders, was very black (livid). There were two marks where the cord went round the neck, quite lacerated through the skin. Upon the back of her left wrist were marks apparently of a bite from both rows of teeth—the impressions were quite distinct before they were washed, and blood was oozing from them. On the right elbow a piece of skin had been taken off, about the size of a shilling, and the patch was very black. The elbow had a bruised appearance.

"A *post-mortem* examination of the body of the deceased was made by Mr. Williams, surgeon, of Brentwood, on the second day after it was found. The eyes were much distended and suffused with blood, and the pupils were dilated. There was a general lividity and swelling of the face; and the tongue, which protruded from the mouth, had been bitten by the teeth. There was a superficial laceration of the skin, covering the lower part of the throat on both sides; and there were two deep marks, as if from two cords, or from two impressions of one cord, tied tightly round the neck. The two impressions were both situated over the trachea, and the skin had swollen up between them. The trachea had been flattened by strong pressure, but had regained its shape; it had a bruised appearance in the parts corresponding to the two marks on the neck, and its structure there was softer than natural. There was extreme ecchymosis on the upper part of the chest, such as might have been produced by a heavy blow, or by the pressure of a person kneeling upon it. There was a contraction of the fingers, which were drawn into the palms of the hands. There was an abrasion of skin at the back of the right elbow. There were marks, apparently of teeth, on the back of the right wrist, and there were also scratches on the back of the left arm and hand. On opening the head, there was great congestion of the whole of the brain. The heart was healthy, but much distended on the right side with blood in a coagulated state. The lungs were congested to an unnatural degree; the right pleura was adherent—a result of previous inflammation. The stomach contained ordinary food, and the coats were in a healthy condition. The intestines were healthy. On opening the uterus it

of violence has really been attempted without a fatal result, the signs of it are evident in the discoloration and swelling of the neck, along with a marked

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was found to contain a male fœtus in the ninth month; and this was probably alive at the time of the deceased's death."

For the defence, two surgeons, Mr. Thorpe and Mr. Pollock, deposed—the first that he thought there was a *doubt* as to whether the deceased committed suicide or not; the second, that he would feel *considerable difficulty* in forming an opinion as to the cause of death, whether suicide or homicide. Both of these opinions were founded upon cases which they had met with, but which, as they had no similarity with the present case, may here be omitted. Dr. Taylor, however, gave a decided opinion that the case was one of homicide, and his observations, which are remarkable for their minuteness and logical accuracy, we here subjoin.

"1. The deceased was *right* handed, and on the hypothesis of suicide, she must have made the tension with her *left* arm and hand. From the position of the loop or noose, any traction to the right would not have tightened, but have loosened the cord.

"2. That, supposing her to have exerted such a traction at all, she must have been in the erect or sitting posture. The force used, indicated by the great local violence to the neck, could not have been exerted by a person attempting to tighten a cord by drawing it to the left while in a recumbent posture, whether prone or supine. This hypothesis would, besides, leave wholly unexplained the flattening of the nose (obviously from direct pressure, not from a fall), and the fact that the deceased had bled in *two* places, one spot being a foot from the other.

"3. That the cord must have been pulled with excessive violence in a horizontal direction by *one end only*, as the mark was *circular* around the neck. The other end of the cord formed a noose or loop, and was tightly fixed at the back of the neck. Thus, then, all the force of traction must have been exerted to the left, in which direction the right hand of a right handed person could not act horizontally, so as to produce the amount of violence found on the soft parts of the neck.

"4. That the fact of there being three coils and a half of rope round the neck, formed an obstacle to the tightening of the cord, by pulling one end to the left so as to imbed the two inner coils in the skin, and to leave the outer or third coil loose. On the supposition that the deceased produced the constriction by her own act, it follows that the three coils must have been round the neck at one time, and the two inner coils sufficiently loose to allow of respiration before traction was commenced.

"5. The double indentation found on the trachea could not have been produced by the two inner coils (on the supposition of suicide), except by the great tightening of the outer coil.

"6. As insensibility and loss of power must have immediately followed the complete compression and obliteration of the trachea by the two inner coils, the outer coil ought not to have been found loose or unconnected with the object by which the force of contraction had been produced.

"To suppose that the deceased could have produced the intense constriction by the first coil, and afterwards retained sufficient power to pass a *second* coil from right to left around her neck, indenting the skin and flattening the tracha as much by the second as by the first coil, involves, in my judgment, a physiological impossibility. There was, therefore, on the suicidal hypothesis, no explanation to resort to—but that all three had been placed at once round the neck *loosely*—that one end only of the cord had then been so pulled to the *left* as to produce the great amount of violence found, and to tighten equally the two inner coils; while the outer coil and extremity of the cord, by which this immense force must have been applied to the two inner coils was found lying loosely, without any attachment either to the hand of the deceased or to any other fixed point.

"7. To have indented the neck, compressed and bruised the trachea in two distinct places, to have caused effusion of blood to the amount of a cupful from mouth, nose, and ears—this effusion being found in two distinct places, a foot distant from each other—would have required a very considerable tension of the outer coil, and, at the same time, a *continued* tension, lasting sufficiently long for the head to move a foot after a cupful of blood had been lost as a mechanical result of the first constriction.

"8. Admitting such conditions of the body and cord to be compatible with suicide, the act could only be conceived to be possible in this case, by the fact of the end of the cord being found tightly wound round the left hand of the deceased.

"9. On the suicidal hypothesis, it would undoubtedly have required a very firm grasp of a rope to produce such effects as were here observed; and from the rapid production of unconsciousness by the compression of the trachea and the arrest of respiration, it would have been impossible, on the part of the deceased to relax the grasp. Hence the cord should have been found, either firmly held in the hand in the rigidity

difficulty in swallowing, and often a very great alteration of the voice. An intelligent and respectable young woman who desired to excite an interest in her behalf, gave out that she was the victim of political conspirators, whose secrets she had discovered. One evening she was found at the door of her chamber in a state of great excitement and apparently alarm. She did not speak, but at first made signs, and after a time wrote that she had been attacked by a man who attempted to strangle her with his hand, and at the same time stabbed her twice in the breast. These blows had only injured her clothing, and her corset was not pierced at the same place as her dress, and the alleged throttling had not altered the character of the voice but suppressed it entirely! No external sign of violence could be found upon her, and ultimately she confessed her trick.

§ 906. In conclusion, the fact should not be overlooked that, even where the body has lain a considerable time in the ground, and is advanced in putrefaction, the marks of strangulation, if this have been forcible, will occasionally be recognized. An instructive case is upon record, in which, after a lapse of thirty-eight days from the interment, a corpse was, by order of the authorities, disinterred. The body was already greatly decomposed, but the evidence of strangulation was obtained chiefly from the fact of the striking contrast of the integuments of the neck with those of the rest of the body. There was observed a white and shrivelled space over the larynx, half an inch in breadth, and extending back on each side of the sterno-cleido-mastoid muscles, from which, also, to the nape of the neck over the second vertebra, there ran a groove

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of death, or wound round it in a state of tension. Unless we adopt this view, we must suppose that after having used an enormous amount of violence by a rope in the left hand, the dead body had the power of relaxing the grasp, of loosening the outer coil of cord, and so moving the hand that the end of the cord should be found lying between the finger and thumb, and barely touching the palm. Such a condition is not only physiologically, but in this case, as it will be presently shown from the length of the cord, physically impossible."

10. (This refers to the absence of any marks of the cord upon the hands, such as would have been there, if forcible traction had been made by them.)

11. "The length of the cord renders it impossible to suppose that such a force could have been exerted by the deceased herself. The length of the cord was fifty-nine and a half inches. The three coils and a half must have consumed at least fifty-two and a half inches, leaving only seven inches for the traction. 'This,' says Dr. Taylor, 'was barely enough to reach the finger and thumb of the raised left hand, and not enough to allow of such a firm grasp by the hand as would be necessary to the production of so much violence to the soft parts of the neck. I find, by measurement, that the circumference of a small female hand in the adult is rather more than *seven inches*. This measurement includes only the palm of the hand without the thumb, and embraces the part of the hand around which a coil would be placed, when the object of a person was to produce firm traction. Hence, then, the hypothesis of suicide involves one of these physical conditions. Without a firm hold of the cord, which could not have been had with less than one coil round the hand, it is impossible to conceive that such violence to the neck could have been produced by the act of the deceased; and if one coil had been thus spontaneously wound round the hand, it would have consumed the whole length of the cord up to the last half coil, and left no portion whatever to give a purchase for pulling with so much violence. Either condition is a physical impossibility; and no theory will suit the facts, or explain them, excepting that which admits that the act was not the result of suicide, but of manual violence applied by another person.'

"The evidence by which the crime was fixed upon the prisoner Drory, it is not necessary here to relate. The chain of evidence was complete and irresistible, and, as has been stated in the text, the criminal made a confession previous to his execution."

of a blackish-brown color, and parchment-like appearance. It was very difficult to cut through this condensed skin, which, upon incision, gave the sensation of old dry leather, and its section was yellowish-white, and perfectly dry. Another remarkable case occurred in Paris, where, after the body of a female had lain several years in the ground, and was reduced to an almost perfect skeleton, an examination made by M. Boys de Loury, Orfila, and other medical jurists, proved that the woman had perished by strangulation. The third, fourth, fifth, and sixth cervical vertebra, as well as the right clavicle were held together by a blackish mass, in the composition of which there could not be recognized any tissue. This mass was surrounded at its lower point by several twists of a cord, two lines in diameter; the cord was in a very decayed condition, and no knot could be found upon it; its direction was exactly horizontal.

CHAPTER X.

HANGING.

I. General symptoms, § 907.
II. Marks of the cord, § 910.
III. Rupture of artery, § 913.
IV. Tumefaction of genital organs, § 914.
V. Suicidal or homicidal, § 915.
1st. Position and condition of body, § 916.
2d. Marks of violence, § 921.

§ 907. I. *General symptoms.*—In hanging, death is caused mainly by the pressure of the cord upon the windpipe, by which the access of air to the lungs is cut off. The individual is therefore strangled; he dies more rapidly, but in the same manner, physiologically speaking, as do those who are suffocated by drowning, or who are placed in any irrespirable medium. If, however, the air be not completely cut off from the lungs, as in those instances in which the cord presses upon a portion of the larynx which is ossified, as in some public executions, it tears the os hyoides loose from its connections with the larynx, or the noose slips from its proper position and catches against the lower jaw, death does not ensue with the same rapidity. In these cases other secondary causes aid in the extinction of life, the veins of the neck being compressed or the cervical vertebræ injured.

§ 908. The signs of hanging are therefore, in general terms, the same as those of asphyxia from other causes, but will vary in intensity according to the position of the body and the suddenness of death. While, in some cases, the face is swollen and livid, the eyes prominent, and the tongue protruded between the contorted lips; in others, these striking signs of struggling are absent, and the features remain placid or unchanged. The latter condition is more frequently observed in persons whose death has been voluntary, but a greater or less congestion of the face is found in the majority of cases of hanging. Dr. Burrows(*w*) explains the difference observed in executed criminals

(*w*) "Diseases of the Cerebral Circulation," 1846.

by the unequal pressure of the cord in different cases. He says, "the knot of the rope is usually adjusted on one side of the neck, and it is found, after death, beneath the ear resting on the mastoid process. It has been often observed, in the dissection of such criminals, that the cheek and integuments on this same side of the head are not nearly so livid and congested as on the other side. The pressure of the rope has not completely obstructed the return of blood through the external jugular vein on the one side, though it has effectually stopped the current on the other. In such cases, it is also probable that the deep-seated internal jugular vein on the one side has been only partially compressed, and has permitted, to a certain extent, the return of blood from the internal parts of the cranium. Another efficient cause is the subsidence of fluid blood after death, while the body is yet suspended, through the cervical vessels, which are not completely obliterated by the pressure of the cord. Other channels not at all affected by the pressure of the rope, are the vertebral sinuses and the spinal plexus of veins." In addition to the marks of congestion in the head and face, the shoulders and upper part of the trunk are often livid. The hands and lower parts of the arms are also frequently of a purple color; the arms are usually straight and rigid, and the fingers clenched. A bloody froth is sometimes seen issuing from the mouth, and there are various marks of violence upon the neck, dependent, however, upon the nature of the ligature and the force employed. To these we shall presently refer, in detail. The urine and fæces are not unfrequently passed involuntarily, the genital organs become turgid, and the semen in the male is said to be discharged. It would appear that the circumscribed bloody spots in the lungs, pericardium, and pericranium, which are met with in all the other forms of suffocation, are absent in this.

§ 909. When a person is found dead, suspended by a cord or other ligature, the first question which arises is, whether the act was his own or that of another. Before, however, this question can be satisfactorily answered, we must endeavor to determine whether the person was *living at the time he was hung*. Now, the fallacy of relying upon any one medical sign as indicative of death from a given cause, is nowhere more apparent than in death by hanging. A partial consideration of the signs of death from this cause, or a too confident reliance upon one or more of the phenomena usually observed in authenticated criminal cases or in public executions, will often lead the physician to an erroneous judgment. However strong the presumption may be that life was destroyed in this manner, rarely, if ever, can a perfect conviction be acquired by medical evidence alone. On the other hand, the moral and circumstantial evidence is, in a large majority of cases, so significant that medical testimony is superfluous. This will at once be evident, when it is remembered that hanging is usually a suicidal act. As, however, cases occur where life is first destroyed by other means and the body afterwards hung, in order to suggest a belief that suicide has been committed, it becomes necessary to consider what assistance can be rendered by medical facts to corroborate the evidence derived from other sources.

§ 910. II. *Mark of the cord.*—In persons who are hung, the cord always

leaves some impression.(*x*) This may be deep or superficial, according to the strain upon it and its thickness and firmness. The skin under this mark acquires a peculiarly dense and tough character, and has been aptly compared, for this reason and from its color, to old parchment. It resembles exactly the desiccated skin, from which the epidermis has been detached, and which has been exposed to the air. This appearance is more marked a few hours after death, if the cord has been removed; its color is yellowish brown, and the cellular tissue underneath is likewise condensed and presents a silvery appearance.

§ 911. This color must not be confounded with that resulting from an extravasation of blood under the skin, the latter being livid or purple. In cases which present the parchment-like appearance, there is often no ecchymosis, or this is confined to a slight line of lividity upon the margins of the depression. In cases, however, where much violence has been used, as in the execution of criminals, a livid mark is frequently observed. The two conditions are sometimes united, an ecchymosis existing upon the fore part of the neck, and the burnt appearance at the sides. Late writers agree that ecchymosis is of much rarer occurrence than was formerly supposed. Devergie collected fifty-two cases of hanging, of which *three* only presented traces of ecchymosis. The cases are taken from Klein, Esquirol, and from his own observation. These results are confirmed by Orfila, Dr. Taylor, and Dr. Casper.

§ 912. The impression of the cord, whether ecchymosed or not, is, however,

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(*x*) The following is certainly an anomalous case. The facts were observed at a public execution. The rope used was ten lines in diameter; the knot was large, formed of three turns of the rope, and on the noose being tightened by the executioner, corresponded to the occipital protuberance. The bolt being withdrawn, the man fell through a space of seven feet and a half. "The body fell with a tremendous jerk, and oscillated for a few minutes; the arms and legs became rigid; the forearms flexed on the arms, the fingers upon the palms, and the thighs abducted and slightly drawn up towards the abdomen; the sterno-mastoid muscles were affected with spasms, and the hands became livid. After a short time the limbs relaxed; the legs approached each other, the toes pointing downwards; the hands became pale, fell down by the side, and the fingers became relaxed. The body, having been suspended for forty-five minutes, was cut down, and the cord removed from the neck. There was *not* any protrusion or unnatural suffusion of the eyes; the upper and lower teeth were half an inch apart, and the tongue was indented by them: the lips were rather livid, and the face *pale;* a *slight* depression marked the position of the rope; there was not any discoloration of the integuments of the neck, breast, or shoulders; the thumbs and fingers were flaccid; the cap in which the head had been enveloped was slightly stained by bloody mucus, which had flowed from the mouth and nose; the bladder was empty, the criminal having made water a few minutes before his execution; the penis appeared as if it had been recently erect; it lay upwards against the abdomen, and a thin transparent fluid had stained the shirt;" numerous spermatozoa in it were detected under the microscope. Eighteen hours afterwards, the body having in the mean time lain upon its back, it was found to be rigid, the face, lips, and ears were purple, the shoulders, and upper and front part of the chest also; the mark of the rope was scarcely perceptible, there being only in one place, for about the extent of a quarter of an inch, a *slight* parchment-like discoloration of the skin. The portion of the skin covered by the rope having been removed, there was not found the slightest extravasation of blood, nor any peculiar silvery-white appearance of the areolar tissue, and none of the bloodvessels or muscles were at all injured; the thyroid cartilage was slightly flattened but not broken, and there was no dislocation or fracture of the vertebral column or injury of the ligaments or spinal cord. The brain, lungs, and right side of the heart were congested with blood, and the mucous membrane of the larynx was of a bright red color. (*On Death by Hanging, &c.* By Charles Croker King, M. D., M. B. I. A. Professor of Anatomy and Physiology, &c. Dublin Quarterly Journal, Aug. 1854.)

not positive evidence that the person was hung when alive, since it has been shown beyond dispute that the same marks may be designedly made by hanging *after* death, while the body is yet warm. Orfila(*y*) suspended the bodies of persons, of different ages, at various periods after death, from the moment life was extinct up to twenty-four hours afterwards. In every one he found the same brown and parchment-like furrow which has been described as produced in the living. Devergie made similar experiments, with a like result. Those performed by Dr. Casper,(*z*) in addition, prove that when the bodies of persons have been hung within two hours after death, the mark upon the skin may be also slightly ecchymosed. In one case, the first of his series, a man was suspended by a double cord passed above the larynx, *an hour* after death from typhus. In about twenty-four hours the body was cut down and examined. "Around the neck, between the larynx and os hyoides, was a double parallel mark, about three lines deep, *of a brown color, with a slight tinge of blue.* There were traces of cadaveric ecchymosis about the body. The whole appearance was such that any individual not acquainted with the circumstances would have supposed that the deceased had been hanged while living. Some spots on the right side of the neck were strongly colored. The skin of this part was hard, like leather, and in patches slightly excoriated. There was no extravasation of blood in the cellular texture, but the muscles of the neck beneath were of a deep violet color. In the two next cases, the body of a young man, aged twenty-three, suspended *an hour* after death from phthisis, and that of a man, aged seventy, two hours after death from dropsy, each by a double cord, and the bodies examined on the following day, the appearances were similar; there was a double depression around the neck, of a *yellowish-brown color, without ecchymosis.* The cutis looked as if burnt, and was like parchment, both when felt and cut. There was no blood extravasated in the cellular tissue beneath." In other cases, in which the body was hung at later periods after death, there was neither ecchymosis nor the parchment-like appearance, the mark of the cord being merely a slight depression in the skin. In the case, however, of a child, a year and a half old, on whose neck, *the day* after death, a small cord was tightly drawn, a small bluish-colored mark was produced. There was no blood, however, extravasated beneath it. The nature of the ligature, as whether it be a cord or some soft material, such as a handkerchief, does not make much difference in the character of the mark, except, of course, that where a cord is used it is better defined in every respect. The yellow and parchment-like appearance may, however, be produced by either kind of ligature.

The unavoidable inference from the experiments above referred to is, that the mark left by the cord is not a reliable sign of the hanging having taken place while the person was alive, since it may present the same characters if the body have been suspended shortly after death. If this mark, which, at first sight, would appear to afford the most palpable evidence of death by hanging, is open to this objection, much more so are those inconstant signs derived

(*y*) Annales d'Hygiène, tome xxvii.
(*z*) Brit. and For. Med. Rev. vol. v. p. 615.

from the state of the countenance, position of the tongue, and discoloration of the skin. Turgescence and lividity of the face, ecchymosis upon the trunk, and protrusion of the tongue may render probable death by hanging; but, as they may all occur in any other mode of death by suffocation, are not indubitable proof that the body was suspended during life. Besides, these signs may be altogether wanting in persons who have evidently perished by hanging. Protrusion of the tongue is far from being invariable in hanging, and depends probably upon the position of the cord, and in some cases of the execution of criminals the face has been observed to remain quite pale.

In those cases where much injury has been done to the neck, as where the muscles are found lacerated, the cartilages broken, and the ligaments torn, while blood is extensively effused in the soft parts and in the spinal canal, there can remain, of course, no probability of these injuries having been produced after death. Such cases are, however, exceptional, being rarely met with except among executed criminals.

§ 913. III. *A rupture of the internal and middle coats of the common carotid artery* is occasionally found. Amussat was the first who observed it. Devergie examined the bodies of thirteen persons who had died by hanging, and found it only in one case. Dr. Mildner(*a*) has reported an instance in which he discovered it, and refers to another published by a German physician. At the same time, he states the important fact that in his case the internal coats of the artery gave way very easily by stretching, as was proved by experiment upon the corresponding vessel on the other side. The experiment, moreover, was tried upon the carotids of persons of various ages, and the result obtained was that the rupture occurred only in those taken from old persons, where the artery had already lost its natural elasticity. In six cases of death by hanging, Simon found laceration of the internal coat of the carotid only twice. In one of these cases the vessel was sound, and in the other not. From these observations, and from experiments upon the dead body, he further concluded that the occurrence of this rupture depends upon the thinness of the cord, and its position between the larynx and the hyoid bone, and that the weight of the body and the force of its fall favor its occurrence. It also follows from these data that the existence of such a laceration, even in the absence of external signs, renders probable the occurrence of death by hanging or by strangulation.(*aa*) Malle found this lesion only twice in eighty-two bodies in which he imitated the act of hanging or strangling. The best mode of determining whether the rupture occurred before or after death would be by noting the signs of effusion in the adjacent cellular tissue. This has been clearly shown by Kussmaul,(*b*) who adds, as still more important signs, injection and swelling of the surrounding cellular tissue in those cases in which all of the coats of the artery have been divided. The amount of probability in favor of death from hanging will depend upon the degree in which these two signs exist.

§ 914. IV. *Tumefaction of the genital organs, and a discharge of semen*

(*a*) Vierteljahrschrift f. prakt. Heilkunde, 1850, Prag.
(*aa*) Virchow's Archiv, xi. 297. (*b*) Ibid. xiii. 60.

in the male, are regarded by some authors, but principally by Devergie, as characteristic of death by hanging. There are many manifest objections to this sign, were it even constant in its appearance, or even if it were peculiar to this mode of death, neither of which it is. It will suffice, however, to refer to the testimony of Orfila(*bb*) upon this point. According to this eminent observer:—

1st. Spermatic animalcules may be found in the urine, for twelve hours after emission.

2d. They may be found in the urethra of persons dying of various diseases.(*c*)

3d. Congestion of the organs of generation may be produced by hanging persons after death. One of the cases was that of a man 50 years of age. Three hours after death, the penis was found to measure three inches and a line in circumference, and neither it nor the scrotum was discolored. The orifice of the urethra was full of a viscid liquid, containing seminal animalcules. The body was *then* hung, and eight hours afterwards the scrotum and penis had acquired a violet color, the circumference of the latter had increased by seven lines, and the meatus still contained spermatozoa. In another case, the body of a man aged 49 was hung five hours after death, and left suspended three hours and a half. The penis, which, before, was slightly turgid, was now erect and formed almost a right angle with the abdomen; it had increased nine lines in circumference, was of a violet color, and all the veins about it were very much distended. The vesiculæ seminales were very full, and at the orifice of the urethra, there was a drop of viscid fluid, containing a great number of spermatozoa, of which many were alive. Congestion of the genital organs and an ejaculation or discharge of the seminal fluid, having thus been observed in those dying from other causes, and in those who have been hung *after death*, cannot be looked upon as a sign of death by hanging, unless these two objections are first satisfactorily answered. Casper emphatically states that he never saw erection of the penis in a person who had died by hanging, and in a very small proportion of cases only a slight degree of turgescence. In seventy-seven cases collected by Casper,(*d*) the seminal discharge was observed in nineteen only, and in thirty-five cases reported by Remer, congestion or ejaculation was found only in fifteen. In some observations upon suicide by strangulation, Dr. Brierre de Boismont states that he has found the fact of ejaculation mentioned in one *seventh* of the cases (the whole number being 114), and of erection in one *tenth*. In one case, in which the traces of the emission were very abundant, there was a dislocation of the second vertebra upon the first.(*e*)

§ 915. V. *Was the hanging suicidal or homicidal?*—The probability is always in favor of the former, not only from the known frequency with which

(*bb*) Bulletin de l'Acad. Roy. de Méd. 1839.

(*c*) Klein observed the penis in a state of erection in a man who had committed suicide by shooting; Schlegel observed freshly effused semen in a youth who had thrown himself from a church tower and fallen upon his head; and a case of poisoning with prussic acid is related by Merzdorf, in which the penis was found in a state of semi-erection, with the spermatic fluid effused. Vid. Siebold, Handbuch der Ger. Med. § 343.

(*d*) Brit. For. Med. Rev. vol. v. p. 615. (*e*) Ann d'Hyg. Juillet, 1848.

this method of self-destruction is chosen, but also from the evident difficulty of accomplishing murder in this way. The distinction between them seldom rests entirely upon medical grounds. Taken alone, the medical signs will rarely be sufficient to determine the question. They can afford often only a probability which must be confirmed by moral and circumstantial evidence. The latter, indeed, is not always beyond the cognizance of the physician, for he may be called upon to state the verisimilitude of the inferences drawn from it. Thus, if the body of a person found hung, exhibit traces of violence externally, or some poisonous substance be discovered in the stomach, the opinion of the medical expert may be required not only in reference to the possibility of death having resulted from these causes, but also whether they were immediately fatal, or whether there did not remain sufficient time and strength for subsequent self-destruction by hanging. Questions of this nature can be answered only upon general principles, it being impossible to lay down any positive rules which would be applicable to all cases that may arise. We can, therefore, in the ensuing remarks, allude to them in only a cursory manner. The chief facts upon which the physician will base his decision, are the position of the body, the marks of violence, both external and internal, and finally, both of these elements in connection with the ordinary signs of hanging heretofore enumerated.

§ 916. 1st. *Position and condition of the body.*—Experience has fully demonstrated the fact, that a *complete* suspension of the body is not necessary to produce death. The tenacity with which those who are bent upon suicide await the catastrophe, from which they could, with ease, escape, will afford a key to the explanation of the cases of death by incomplete suspension. It is, moreover, not improbable, from what is known of the sensations produced by a constriction of the throat in those who have experimented upon themselves, or who have been restored after apparent death by hanging, that consciousness and sensation are very speedily lost, or first give way to an indescribable feeling of pleasure. Dr. Schneider, who succeeded in restoring a man, who had attempted suicide by this means, states that his patient was quite angry at being awakened from the delicious slumber into which he had fallen.(*f*) Wepfer and Morgagni relate, that having interrogated certain criminals as to their sensations, who had been hung, but afterwards restored to life, they answered, that they had not suffered at all, but had simply remained without sensation and plunged, as it were, in a profound sleep. Mr. Fleischmann, in experimenting upon himself, found that when the cord pressed upon the trachea, or between the principal cartilages of the windpipe, consciousness was almost immediately lost, but that if the obstruction to the entrance of air into the lungs was not so great, by constriction, for example, upon the thyroid cartilage, the effect was less rapid. We may, therefore, explain the fact of death in cases of incomplete suspension by a want both of the will and the power in the person to escape.

§ 917. Dr. Duchesne,(*g*) from an examination of fifty-eight cases, arrived

(*f*) Henke's Zeitschrift, 1851, 43 Erg. H.
(*g*) Ann. d'Hyg. tom. xxxiv. pp. 141 and 346.

at the conclusion that suicide by strangulation may be admitted, whatever the position in which the body may be found, and even if resting upon the feet. Devergie also, from a review of a very large number of cases, states that suspension followed by death may take place with the feet or knees resting upon the ground, or with the body in an almost horizontal posture, and that the weight of the shoulders and chest is sufficient to exercise a fatal constriction upon the neck. Dr. Taylor(*h*) says, "I have now before me the reports of eleven cases of suicidal hanging or strangulation, which have occurred within the last few years. In three, the deceased were found nearly recumbent; in four, in a kneeling posture—the body being more or less supported by the legs; and in four, the persons were found sitting." A case has been reported, in which the body was entirely supported by the bedstead, while the neck rested in a loop of leather, depending from the bedpost. The case was evidently one of suicide.(*i*) Many other similar cases are on record, which it would be tedious to enumerate. The facts here stated derive their importance chiefly from the prevalent notion, that if the body were not completely suspended, the suspicion of homicide would be strengthened. This opinion was held and urged by some medical jurists in the case of the *Prince de Condé*, who was found hanging in his room from the curtain rod, with his toes touching the floor. The attitude in which the body was found raised some suspicion of foul play, and a most accurate investigation of all the circumstances connected with the event was instituted, from which it appeared to have been a case of suicide. In the journal where this case is reported will be found also several instances of self-destruction by hanging, where the bodies were found in the most extraordinary situations and attitudes, accompanied with plates of the same.(*j*)

§ 918. The inference to be drawn from the position of the body is, therefore, that, *in itself*, it proves neither homicide nor suicide. A person may hang himself from a high beam or the branch of a tree, or may choose to strangle himself by simply placing his neck in a noose or loop, and lean forward against it until he loses his consciousness. On the other hand, a murderer may find it more convenient to hang his victim imperfectly than to suspend him from an elevated position. In either case, the position in which the body is found is neither a safe criterion of its position at the moment of death, nor an index of the voluntary or involuntary character of the act. The cord, in many cases, slips or stretches by the weight of the body or the momentum of the fall, so that the latter will come to occupy a lower position than at the moment when unconsciousness was produced by constriction of the neck. And, even were this not the case, the more or less imperfect suspension of the body cannot, as we have already seen, enlighten us with respect to the question of homicide.

§ 919. It is hardly necessary to state that, if the hands or feet are found tied, the inference is not necessarily warranted that the act was homicidal. In such cases, the opinion of the physician will be guided, in a measure, by the

(*h*) Med. Jur., Am. ed. p. 505.
(*i*) Med. Times, Aug. 7, 1852.
(*j*) Ann. d'Hyg. tom. v. p. 165.

remaining indicatory evidence. Thus, if an individual is found suspended from a position which he could not easily have reached, or to attain which there were no obvious means, the fact of the hands or feet being tied will afford certainly a strong presumption of homicide. But if, on the other hand, chairs or tables or any other means of support are found near the deceased, this presumption will no longer hold, since it is evident that the person may have, himself, applied these ligatures, and then hung himself by thrusting his head through the noose and overturning or pushing away these means of support.

§ 920. It is, however, of importance to observe whether ligatures upon the wrists are tied in such a manner as could have been done by the person himself. The following remarkable case(*k*) may be cited in illustration: "John Robinson, a married man, aged thirty-four, was admitted into the asylum of the workhouse on the 24th of November last, having been in a desponding, melancholy state some time, caused by religious delusions. He had attempted to destroy himself several times, by throwing himself out of the window, and rushing into the fire, and said he had a desire to hang himself. On admission, his hands were found much burnt. He refused his food for some days, but continued gradually to improve for the ensuing six weeks, and went to bed in a tranquil state on the evening of the 5th inst., about nine P. M. He was found next morning at half-past six suspended to a bar of the window of his cell, by means of the bandage which he had taken from his hands and folded double. His wrists were fastened together behind his back, by a piece of bandage, in which two running nooses had been made and slipped over his hands, and then pulled tight. His ankles were tightly fastened together, and his night-cap was pulled down over his face, below his nose. The toes almost, if not quite, touched the ground; the body hanging between the bed and a night-chair, with the face towards the wall. On cutting him down, it was apparent, from the coldness and rigidity of the body, that he had been dead some time. The features were quite composed. No discoloration of the face; eyes in the natural position, if anything, a little depressed; no froth at the mouth or protrusion of the tongue, or lividity of the neck, but, on the right side, extending nearly from the angle of the jaw to the commencement of the thyroid cartilage, the skin was cut through, as if with a blunt knife, to the depth of nearly a quarter of an inch. The hands and feet were extended and pointed downwards. No erection of the penis, or emission of semen, urine, or feces. The body, in fact, presented the appearance of that of a person dying from other causes, and being afterwards suspended. It was only the absence of suspicion of any kind that made the cause of death appear satisfactory. He must have first taken the bandages from his hands and cut them into suitable pieces, then stood on the night-chair, then tied his legs, then fastened the noose around his neck and pulled the cap over his face, and, lastly, slipped his hands behind his back, put the nooses over his wrists, and then jumped off. His friends would not permit a post-mortem examination, and the coroner did not consider any medical evidence requisite."

(*k*) Lond. Med. Gaz. vol. xiv. p. 388, by Mr. J. H. Taylor.

§ 921. 2d. *Marks of violence.*—Under this denomination may be included all those injuries which affect the question of homicide. For the sake of practical convenience, the various injuries to the neck, consisting of those which affect the windpipe as well as those of the cervical vertebræ may be classed together. Under the former are embraced, fracture of the os hyoides, of the cartilages of the larynx, and laceration of their intervening membranes and ligaments; under the latter, fracture and displacement of the vertebræ, and rupture of their ligamentous bands and intervertebral substance. The consequences in both cases are extensive laceration of and effusion of blood into the structure of the neck; and in the injury to the spine, compression of the spinal marrow, either by the displaced vertebræ, or by effused blood. It is at once apparent that a great degree of violence will be required to produce such extensive and serious injuries, and will, therefore, in almost every case exclude the idea of suicide.

§ 922. The injuries above enumerated are sometimes made in criminal executions, where the fall is great, and the body at the moment of the execution is violently rotated by the hangman, but even in these cases luxation and fracture of the vertebræ are of rare occurrence. Orfila states that, in the bodies of fifty persons who had been hung, he met with a fracture of the os hyoides in only one case, while he had *never* met with fracture and luxation of the vertebræ. In the bodies of persons which were hung after death, for the sake of experiment, he succeeded, in some cases, in producing a rupture of the yellow ligaments of the spine, and the intervertebral substance. In one case the odontoid process was broken but not displaced, and in another the second vertebra was broken horizontally. In all of these experiments, however, both the extending and rotating force was extremely great, such, indeed, as can hardly be conceived in a case of suicide.

Dr. Houston, of Dublin, in an account of the appearance found in two executed criminals, says: "The cervical vertebræ were unbroken, and the spinal marrow and brain presented no trace of injury. In both, the sterno-mastoid muscle on the right side (the opposite to that on which the rope was applied) was ecchymosed, contused, and broken; that of the left side was only slightly bruised. The os hyoides and thyroid cartilage were completely severed from each other." A few shreds of the small muscles of these parts alone remained, and nothing, in fact, but the skin interposed between the rope and the cavity of the pharynx.(*l*)

§ 923. There are only two well-authenticated cases of suicide by hanging in which injury to the cervical vertebræ has been met with, and in these it was far less important than in any of the experiments referred to, or in cases of judicial or homicidal hanging. One is reported by M. Ansiaux, of Liege. He found in the body of a woman who had hung herself, that the posterior ligaments of the spine between the first two cervical vertebræ were ruptured, and the transverse ligament of the atlas so stretched that the odontoid process of the second vertebra was locked against the articular surface. The perpendicular and oblique ligaments were not injured. The first two cervical vertebræ

(*l*) Dublin Hosp. Reports, vol. v. p. 317.

were considerably separated behind, the spinal marrow was injured, and extravasated blood found at the place of separation. The deceased was a stout woman; when discovered, she was hanging from a beam of the ceiling, and her feet were about a foot and a half above the ground. Near her there was a chair overturned.

Another case is reported in the Lancet by Mr. Campbell de Morgan.(*m*) "A married woman, aged fifty, worn out and exhausted by disease, was found hanging quite lifeless from the rail of a bed, which was not more than five feet eight inches from the ground. The front of her body was turned round towards the bed, the head thrown forcibly back—the knot of the ligature, an old silk handkerchief, being placed in the middle of the under side of the chin. Her heels were about three inches from the ground, the knees being on a level with the bed-frame, and resting against it. The body was seen by a medical man, about an hour after it was cut down—the features were perfectly calm, and there was no trace of congestion about the face; it was pale and in all respects natural. There was no lividity; the eyes were neither injected nor prominent; the tongue pale, lying far back in the mouth, and without any mark of indentation. The cord-mark well defined, and, like parchment, dry, brown, and hard, without any ecchymosis, but with a thin line of congestion at the upper edge of the groove—it was very deep at the back of the neck, just over the atlas, probably owing to the head hanging backwards. The mucous membrane of the stomach was pale; the lungs natural; no congestion of the large veins, or of the cavities of the heart; the two ventricles contained about an equal quantity of blood. These appearances seemed to show that death was not caused either by asphyxia or by cerebral congestion. Neither the trachea nor the great vessels of the neck could have sustained any pressure or constriction. The deep muscles over the second and third cervical vertebræ were ecchymosed; this ecchymosis extended to the sheath of the spinal marrow; and on the left side, and exterior to the sheath, there was an extensive effusion of blood firmly coagulated. There was no displacement of the second or other vertebræ, and the ligaments were sound; but between the third and fourth vertebræ, there was unusual mobility, as if they had been stretched. In this case, the body was not heavy, and the fall, if any, could have been but trifling. The effusion on the spinal marrow was the cause of death; and its origin was sufficiently explained, by the falling back of the head and sudden bending of the cervical vertebræ. Her husband and family were in an adjoining room, but heard no noise; it was only by accident that the deceased was discovered."

In a case of suicide, reported by Dr. Mildner,(*n*) the left *corner* of the os hyoides was broken and the adjacent soft parts infiltrated with dark and fluid blood. The person was a robust and heavy woman of forty-eight years of age. The indentation, which was of a yellowish-brown color, and of a parchment-like and desiccated appearance, was also excoriated and deeper on the side corresponding to the fracture.

(*m*) Lancet, Aug. 10, 1844, quoted by Taylor, Med. Jur. p. 503.
(*n*) Prag. Vierteljahrsch. f. d. praktische Heilkunde, 1850. Bd. iii. p. 157.

§ 924. It is well known that manual strangulation is one of the most frequent complications of homicidal hanging, and hence the injuries to the neck here referred to will throw much doubt upon the idea of the act having been voluntary. A murderer who strangles his victim, will commonly use more violence than is necessary for his purpose, and thus produce some of the serious injuries to the neck which have been described. But in such cases we are seldom left without a guide to the nature of the deed. The thumb and finger will have left their traces upon the throat, differing widely from the uniform discolored furrow left by the cord. Or if the act of strangulation has been accomplished with anything in the nature of a cord, the direction of the mark will be, if not horizontal, at least not oblique in the same manner as that produced by suspension. This distinction manifestly applies only to those cases in which the person is fairly hung, and in which the cord has formed but one noose around the neck, because if it has been twisted twice around it, the lower mark will generally be circular and horizontal. Hence if the marks of fingers upon the throat, or a *horizontal* discolored impression upon it be found, there will be good reason to believe, even if the person be found hung apparently with a single noose, that it was an act of violence committed by another upon him. The probability of this will be much increased by the existence of serious injury to the subjacent parts of the neck. A full confirmation of the fact can, however, only be obtained from other moral and collateral evidence, into which it is rather the province of the jury than of the physician to inquire. In the following case, the evidence of homicide was derived from various sources. "The deceased was found sitting in a corner of her room, with a narrow tape around her neck, hung loosely and singly over a small brass hook, about three feet above her head. Her clothes were placed smoothly under her, and her hands stretched out by her side. There was a severe bruise on the right eye, and there were marks of blood on the tape, as well as on the floor and wall of the room at a distance from the body. There was a stain of blood on the knot of the tape where it passed over the hook; and there was no blood on the hands of the deceased. The windpipe for about an inch and a half was lacerated longitudinally in its rings, and there was a deep mark round the neck in the course of the doubled tape, as if from great pressure applied by some person, or from the weight of the suspended body. The latter hypothesis was untenable. The body of the deceased did not weigh less than 126 pounds, while the tape found round her neck broke with a weight of 49 pounds; hence the deceased never could have been suspended by it." The prisoner confessed the crime.(*o*)

§ 925. *Other marks of violence* are found in every variety upon the person of the hanged. We subjoin three cases, one of homicide and two of suicide by hanging, to illustrate the nature of the evidence required for the settlement of doubtful cases.

A gamekeeper, thirty-two years of age, robust and hardy in his constitution, was found hanging upon a tree in the forest, three days after he had left home, in pursuit of poachers. The deceased was suspended by his cravat to the

(*o*) Taylor, Med. Jur. 5th ed. 754.

branch of a young oak-tree, and so near to the branch that the right side of his face was in contact with it. His feet were rather more than three feet from the ground, which bore no traces of a struggle. The tobacco-pipe of the deceased was found about forty paces distant from the tree, but his hunting-knife and rifle were nowhere to be found. The cravat had left the following mark upon the neck: a groove from a half to three-quarters of an inch wide, the skin in it brown and parchment-like, and over the thyroid cartilage three-quarters of an inch deep. The indentation was more superficial upon the left side. The direction of the mark was horizontal to the back of the neck, and thence upwards on the right side to the angle of the jaw. At this point, corresponding exactly to the knot of the noose, the skin was very deeply ecchymosed, and also excoriated. The right ear was greatly discolored, as well as the integuments around it. The skin of the face and head was excoriated in many places, and bruised and lacerated also. There were, moreover, a great number of small lacerated wounds upon the hands and arms, and bruises on the knees. No other external injuries of serious character were found. The os hyoides was broken, and the muscles and soft parts of the neck infiltrated with blood. The horizontal direction of the mark upon the neck, the extreme tightness with which the cravat was fastened upon it, the fracture of the hyoid bone, together with the large number of trifling wounds, led the examiners to give as their opinion that the deceased had been overpowered by numbers, thrown down, strangled, and afterwards hung.(*p*) Another remarkable case, in which the *suicidal* nature of the act was clearly determined, is reported by Dr. Heyfelder; it occurred at the prison at Sigmaringen, in Germany.(*q*) One of the prisoners, who a few hours before had been left by the turnkey in his cell, of which the latter alone had the key, was found hanging from the jamb of the door. The ligature used was his own silk cravat, twisted into a cord, three and a half feet long, two inches broad, and four lines thick. His head was sunk upon his breast, his face pale and without expression, the lips blue, eyes, tongue, and mouth unchanged in position and appearance. The arms were brought forward over the stomach, and were rigid; the fingers were bent, and the feet extended and touching the ground. *The mouth of the deceased was stopped with his own handkerchief.* The mark of the cord was oblique, commencing between the os hyoides and thyroid cartilage, and ran upwards and backwards to the occiput. The skin was brown, and in some places shrivelled, but there was no ecchymosis. Five contused and lacerated wounds were found upon the sides of the head; the right ear also was lacerated, and a portion of the head and face covered with blood. On the sharp edge of the window-sill, which was only two feet from the floor, traces of dried blood and hair were found, and on the wall below the window there were several lines of dried blood running towards the ground. Had this case occurred in any other place than in a locked prison-cell with a single occupant, the wounds upon the head and the handkerchief thrust into his mouth would have raised a very strong presumption of homicide, and perhaps involved the life of an innocent person.

(*p*) Henke's Zeitsch. 1835, H. 3. (*q*) Ibid. 1849, H. 1.

We would here refer the reader to another case of hanging, singular and important from the fact of the woman having previously inflicted upon her own head, with a hatchet, no less than *fifty-five* wounds, some of which penetrated to and fractured the bone. Besides these, there were twenty-six superficial incised wounds upon the breast and stomach, made from three to four days previously, as they were in a state of suppuration. The loss of blood must have been very great, being estimated at three pounds. Yet this woman had been able to leave the room where she had committed this violence upon her own person, and proceed to a stable at the back of the house, and there, mounting upon a milking-stool, attach the cord to a beam, and consummate the act of self-destruction. In this case the indentation of the cord left no discoloration of the skin, probably owing to the loss of blood. The deceased had long been melancholy, and this, together with other facts and circumstantial evidence which came out upon investigation, left no doubt that the act was suicidal.(*r*)

§ 926. The influence which the discovery of wounds and marks of violence upon the body of a person found hung, will exert in the determination of the voluntary or passive character of the act, must be decided, in each case, by the light obtained from an inquiry into the possible motives for suicide, into all the circumstances connected with the act, and into those general principles elsewhere referred to for the discrimination between self-inflicted and homicidal wounds. In some cases the injury may have been of accidental origin, as indeed may the hanging itself, but the case is hardly conceivable, in which the true nature of the latter could not be ascertained, or the former not rendered probable. In conclusion, we would repeat the statement, that hanging is preeminently a suicidal mode of death, and strong evidence, both medical and other, will be required in any given case to overthrow this presumption, it being far more likely that a person should inflict barbarous injuries upon his own person, and then hang himself, than that a murderer should resort to so difficult and unusual mode of assassination. This form of homicide can hardly be regarded as practicable, unless there be an exceeding disproportion between the strength of the murderer and that of his victim. It can only be taken into consideration, when the body found hung is that of a very young or feeble person, or one whom infirmity or temporary intoxication may have rendered helpless.

(*r*) Henke's Zeitschrift, 1840, H. 1 (Krügelstein).

CHAPTER XI.

DROWNING.

I. How producing death, § 927.
II. Time when body will float, &c., § 929.
III. Signs of death by drowning, § 930.
1st. Paleness and coldness of skin, &c., § 931.
2d. Abrasion of the hands, &c., § 932.
3d. Water and froth in the lungs, § 933.
4th. Water in the stomach, § 935.
5th. Signs of asphyxia, § 937.
6th. Marks of violence, § 938.
7th. Putrefaction, &c., § 939.
IV. Accidental or otherwise, § 241.

§ 927. I. *How producing death.*—The immediate cause of death in drowning has been the theme of considerable discussion. At present, however, from the numerous experiments made to determine this point, there can be but little doubt that the true cause of death in drowning is, *suffocation*. By this word is meant, the prevention of the ingress of air into the lungs. The truth of this statement will be apparent, by a consideration of the external and internal condition of the body after death from this cause.

Before, however, proceeding to describe the post-mortem appearances in the drowned, the act of drowning demands our attention. A person who falls alive into the water, and is unable to swim, sinks at once below the surface. Presently the impossibility of respiring forces him to struggle to reach the air, and the effort to respire is instinctively repressed until this is accomplished, when he gasps convulsively, and takes in with the air a certain quantity of water also, which is unavoidably swallowed. Sinking once more, the air in the lungs is partially expelled by an act of expiration, and bubbles are seen to rise to the surface. New and probably involuntary efforts to breathe are made, and water being thus drawn into the lungs, instead of air, brings on an act of coughing, by which water and air are both expelled. These efforts alternate for a few moments. If again successful in reaching the surface, the death-struggle is a little prolonged; but the privation of air soon benumbs both the mental and physical faculties, and with gradually lessening effort the unconscious and exhausted body sinks lifeless to the bottom.(*rr*)

The physiological explanation of this manner of death is found in the fact that, in consequence of the privation of air, the blood ceases to undergo in the lungs those changes indispensable for the maintenance of life. Hence the functions of the brain and nervous system are paralyzed, and presently the muscular and respiratory movements also. The heart continues to pulsate feebly for a short time after the stoppage of the voluntary functions of the

(*rr*) M. Beau concludes, from numerous experiments upon animals, that death by drowning is always a suffocation produced by the arrest of breathing from spasm of the muscles of the larynx. Archives Gén. Juill. 1860, p. 64.

body; but the blood having become completely venous, is not long capable of affording the necessary stimulus to this organ.

§ 928. The rapidity with which life is extinguished by drowning depends upon the frequency and completeness of the renewal of the air in the lungs. If the individual have come several times to the surface of the water and breathed, he will, of course, not die so quickly as one who has not had this opportunity; but it is probable that in cases of drowning, where the person has not been able to support himself above the water by any extraneous aid, life is extinct within five minutes. Where the submersion has been complete from the beginning, life can scarcely be prolonged more than two minutes. "Mr. Woolley, the surgical attendant at the Receiving House of the Royal Humane Society in Hyde Park, believes that very few lives are preserved after four minutes of complete submersion. In the year 1840, however, he met with a case in which a person recovered, although there was reason to believe that he had been five minutes under water, and a similar instance has since come under his observation."(*s*) In an account of the pearl-fishery, by the Rev. Mr. Corder, who resided several years at Columbo, he says "that he observed with attention the time during which many of the divers remained under water at the depth of seven fathoms. Some of them performed the dip within the space of one minute; others came up in one minute and twenty seconds. Some persons, who have frequently attended the fisheries and accompanied the divers to the banks, consider one minute and a half to be the longest period during which any diver remains under water. Other gentlemen, who are willing to allow the greatest latitude, say that they certainly never knew a diver to exceed two minutes."(*t*) The same observation was made by Dr. Lefevre, of Rochefort, relative to the Navarino sponge-divers; he says that there was not one who could remain entirely submerged for two consecutive minutes.(*u*) Nevertheless, some cases, said to be authentic, have been reported, in which recovery has taken place after a much longer period of submersion.(*v*) The only exception to this rapid death in complete submersion is when the person falling into the water is in a state of syncope. As it is known that one may remain without respiration and circulation, in a state of apparent death, for a few minutes, or even longer, it may be admitted that occasionally a person falling or thrown into the water may suddenly faint from terror, and be rescued before respiration has returned. In illustration of this fact, a case related by Plater is often cited. A woman, condemned to be drowned for infanticide, fainted away at the moment she was thrown into the water. She was left in it a quarter of an hour, and upon then being drawn out recovered her senses.

§ 929. II. *The time at which a drowned body will float*, or rise again to the surface after having been once sunk, appears to be subject to considerable variation. It depends upon the rapidity of the access of decomposition, and the body therefore rises sooner in summer than in winter; upon the density of

(*s*) Brodie's Lectures on Pathology and Surgery.
(*t*) Ibid.
(*u*) Med. Gaz. xvi. 608.
(*v*) Vid. Assoc. Med. Journ. April 22, 1853; Med. Gaz. vol. xxi. p. 448; Ibid. xxix. p. 78; and Med. Times, Dec. 2, 1848, p. 125.

the water itself (whether salt or fresh); upon the age and sex of the individual, children, females, and fat persons being comparatively buoyant; and also upon whether or not the body is clothed. The question is one not merely of scientific interest, but, as will be seen in the following case, may have important legal bearings.

"*Voltan and Adams* v. *The National Loan Fund Life Assurance Company.*

"The action was brought by the plaintiffs, as assignees of this policy, to recover on a policy of insurance issued by the defendants upon the life of one Conrad Shoemaker. The insurance was for $10,000, and the policy was issued on the 15th of May, 1850. The premium on the policy was payable quarterly in advance.

"On the 23d of August, 1850, Shoemaker paid the premium for the quarter ending on the 15th of November, 1850. On the 4th of September, 1850, the plaintiffs alleged that Shoemaker was drowned, while on a fishing excursion with one Ottman, a German, in the waters of the bay of New York, about opposite to Hoboken, and nearest to the New Jersey shore. The theory of the defence substantially was, that Voltan, Martin, and Shoemaker (Germans) had entered into a conspiracy to defraud the insurance company, by causing an insurance to be effected for a large amount on the life of Shoemaker, and subsequently secreting and disposing of him.

"To obtain a recovery, it was, of course, necessary that the plaintiffs should satisfy the jury of the death of Shoemaker. This they attempted to do—1st, by the testimony of Ottman, who swore to the circumstances of his drowning, and of the time and place, which was on the 4th of September, 1850, about dusk, in the Hudson River, opposite Hoboken, and near midway of the river; 2d, by showing that a body *found floating* on the *river* near Jersey City, on the 7th of September, 1850, was the body of Shoemaker.

"This body was examined by the coroner of Jersey City, soon after being discovered. The skin was somewhat bleached, and the face disfigured; a part of the lips being eaten off by crabs, lobsters, or fish of some kind. After examination, it was interred by direction of the coroner.

"It was not attempted to identify this as the body of Shoemaker, except from some of the clothes found on it, and particularly the handkerchief on the neck. The handkerchief on the body was the half of a black silk one, with stripes, and cut from its mate diagonally. It was shown by a witness that Voltan, a short period before the alleged drowning, had purchased a handkerchief for his son, and, at the suggestion of Voltan's daughter, it was cut in two, and half of it given to Shoemaker, after being hemmed by her; the other half to the son. The part retained by the son, and the part found on the neck of the body were exhibited in court and found to match in color and stripes, and when laid together, formed a square, and although cut across the stripes, matched in the run and character of the stripes. The pantaloons were also shown to be of the same general character worn by Shoemaker, about the time of his alleged death.

"To rebut the presumption that this was the body of Shoemaker, a number of witnesses were sworn on the part of the defence, with the view of showing that, as a general rule, bodies will not rise and float, even when the water is

of the temperature that it is in the month of September, under from six to ten days. As Shoemaker was alleged to have been drowned on the 4th of September, the body was found floating on the 7th of September, three days afterwards; if it were universally true that bodies do not float until decomposition takes place, in the waters of the Hudson, under from six to ten days, then this could not be the body of Shoemaker.

"The first witness sworn on the subject was *Dr. Barent P. Staats.* He testified that he had had occasion, in the course of his professional reading, to examine the subject as to how long a body will remain in the water before rising and floating. That it depends on the time of year, and the temperature of the water, and the size and make of the man. When the temperature is 65°, he did not think any body would rise in from less than seven to ten days. On his cross-examination, he said he did not know that he could point out any book that he had consulted.

"*Dr. Benj. Budd* was the next witness called. He testified that he was assistant-coroner in New York—has had occasion to see many drowned bodies—some one hundred and fifty. Never knew a body to rise in less than six days, unless some mechanical means were used to raise it. Should judge the body found at Jersey City to have been in the water from ten to twenty days. Has never known a body to be in the water less than seven days that was mutilated by fishes. Bodies that have been hooked up in three, four, or five days, have not that peculiar bleached appearance as those present that come up from seven to ten days. The body will not rise until decomposition has commenced. He is twenty-five years of age, and has only studied the book of experience.

"*Dr. Seth Geer* was then called. He testified that he was coroner in New York for eighteen months, during which time he had examined between three and four hundred drowned bodies. The general rule as to the rising of drowned bodies in the harbor of New York, is from eight to ten days. In his judgment, from the description given, the body found at Jersey City, had been in the water two or three weeks. Never knew a body that had been in the water but three days, mutilated by fishes. The hotter the water, the sooner the body would bleach.

"*Andrew Blakeley* was then called. He testified that he was deputy coroner in New York a little over two years, during which time he examined rising two hundred and fifty drowned bodies. Drowned bodies would rise in the summer months on an average of from six to ten days, as he found out by experience. He did not remember any case of rising when the body had been in the water but three days. He never saw a drowned body that had laid in the water but three days eaten by fishes. On his cross-examination, he stated that he had never read any medical book on the subject, nor did he know, except from testimony taken as coroner, of a body lying under water seven days. It takes a body from six to eight or ten days to get bleached. He means by bleaching, a soaking of the body—a general softening and whitening of the body.

"*Henry C. Van Wie* was called on the part of the plaintiffs. He testified that he was coroner of the county of Albany for four years. Has held a good many inquests on drowned bodies. Has known two or three instances where

the bodies have risen in three or four days. In warm or sultry weather they will rise in from three to four days. They will bleach out directly in warm weather. They will be mutilated by fishes directly after decomposition takes place. Remembers an instance of holding an inquest on a body that drifted ashore, and had been drowned four, five, or six days. (This witness related the startling fact of holding, in one season, inquests on fifteen infants under three months old, found floating in cigar-boxes near the city of Albany—cases, doubtless, of infanticide.)

"*Henry C. Allen*, called for the plaintiffs. He testified that he had been coroner of Albany County for twelve or fourteen years. He never could make up his mind as to any definite time that a body would remain under water. He knew an instance of a girl of fourteen years of age, who was drowned on Friday at 12 o'clock, and floated on Sunday at 12 o'clock. She was drowned at Greenbush Ferry. Has known instances of bodies rising in five or six days; sometimes sooner. Knew of one man, by the name of Moreton, who floated on the fourth or fifth day. The girl spoken of had turned a dark livid color. Females float sooner than males.

"*George E. Cutler* called by plaintiffs. He testified that he was coroner of Jersey City. He knew of the case of a young man who was drowned on Sunday, about 7 or 8 o'clock in the morning, and on Tuesday or Wednesday succeeding, about 11 o'clock, he was found floating about two miles from the place where he was drowned. He knew of a female by the name of Smith, was seen alive on Wednesday evening, about seven o'clock; on Wednesday, about 4 o'clock P. M., he was called to view the body floating. A person of temperate habits will bleach very quick; those who have been inveterate drinkers never will bleach.

"*John Osborn* called by plaintiffs. He testified that he was coroner of Albany County three years. Had occasion frequently to reclaim drowned bodies. Had known bodies to come up in two days, others not in several months. Had a case of an Irish girl. She had been drowned some two or three days; it might have been four. Had another case of a man, McCarregan, an Irish auctioneer, who rose in four or five days.

"*Silas M. Benton* called for plaintiffs. He testified that he was acting coroner in 1847, 1848, and 1849, in New Haven (Conn.). He knew a case of a person, whom he saw on Friday, was missed on Saturday, and found floating in the water on Sunday. The man was a German, and a baker by trade.

"The verdict of the jury was in favor of the plaintiffs."(*w*)

The same question was largely discussed on the trial of Spencer Cowper, for the murder of Sarah Stout.(*x*)

In two cases mentioned by Dr. Taylor, bodies floated in a much shorter time. In one, a woman who was seen on the banks of a river at half-past eleven in the evening, was found drowned at eight o'clock in the morning. The body was floating on the water with the face downwards. In another, in the month of December, a factory girl fell into a river while walking along the

(*w*) Am. Jour. Med. Sci., July, 1853, p. 263.
(*x*) Burke's Trials of the Aristocracy, 284.

bank in the evening. The body was found floating on the surface of the water the following morning. The bodies in these cases were clothed, and this, it is supposed, may have rendered them more buoyant. (*xx*)

§ 930. III. *Signs of death by drowning.*—In the enumeration of the evidences of this mode of death, it is assumed that the inspection is made shortly after the act has occurred and before putrefaction has commenced.

The *countenance* of the drowned is usually described as being natural and composed; the face is pale, but very soon becomes livid and swollen on exposure to the air, and especially in warm weather; the eyes are half open, and the pupils dilated; a light froth is observable about the mouth and nostrils, and the swollen and livid tongue reaches to the margin of the lips. These signs are not exclusively characteristic of death by drowning—they merely render the cause of death by suffocation probable.

§ 931. 1st. *Paleness and coldness of the skin and cutis anserina.*—The first are ascribable merely to the presence of the body in a colder medium than the air, and are altogether destitute of significance as to the cause of death. The projection of the papillæ of the skin, commonly called goose-flesh, is deserving of more attention, for although it may have been caused by the coldness of the air, yet it cannot be produced upon a body already dead, by the chill of the water, unless, possibly, the body be thrown in while yet warm. Löffler very justly remarks, upon this sign (*y*)—"If we should find a body drawn out of the water in the summer time, and the *cutis anserina*, on certain parts of the body not covered with the clothing, we should be fully warranted in the conclusion that it was due to the *sensation* of cold, and consequently that the individual was living on entering the water." A singular case is reported in the second series of Casper's observations, in which the opinion that a child two and a half years old was living when thrown into the water, rested partly upon this circumstance. The *cutis anserina* was very evident upon the right side of the body and upon one of the thighs. The head having been enveloped in a cloth, neither froth was found in the lungs nor water in the stomach. The fluidity of the blood and the *cutis anserina* were, therefore, the only *medical* signs present.

§ 932. 2d. *Abrasion of the hands, mud and sand under the nails, and substances grasped in the hands.*—In the struggles made by a drowning person to save himself, he clutches wildly at every object in the water; hence, if it is not very deep, and the drowning person is near the bank, the fingers will most probably bear the marks of the sand or gravel, and weeds, sticks, &c., will remain firmly grasped in the hands. Unless the substances found in the hands be such as are peculiar to the water, the other marks of injury upon them may have been received in a struggle upon the shore, or in a fall down a precipitous bank. Or, indeed, they may be produced after death by the hands striking against substances at the bottom of the stream. Again, in many instances, these signs are not found at all—a fact which may be explained by the absence of struggling when the person enters the water in a state of unconsciousness from intoxication or other causes. Likewise, if the water be very

(*xx*) Med. Jur., 5th ed. p. 696.
(*y*) Henk. Zeitsch., 1844, 3 H. p. 6. "Der Tod durch Ertrinken.

deep, the body will not have reached the bottom until all its energies are lost and life is extinct.

§ 933. 3d. *Water and froth in the lungs.*—The fact that water is drawn into the lungs by persons who die by drowning, is, as a general fact, perfectly well established. It is found, either in substance, or mixed with air and mucus constituting froth. When found in substance, it may have been imbibed during life or have penetrated after death. If it have entered during life, it must be identical with the medium in which it is presumed the person was drowned, and sometimes it will contain mud, sand or gravel, which has been dissolved or suspended in the water. Devergie relates a case in which sand and gravel were found in the trachea, and another is reported by Blumhardt,(*z*) of an epileptic who, having fallen into a shallow brook, was drowned, and on *post-mortem* examination, his trachea was found to contain from three to four drachms of sand and gravel. Metzger(*a*) examined the body of a new-born child that was drowned in the drain of a slaughter-house. The whole of the trachea to its bifurcation was filled with the liquid refuse. The presence of water in the lungs is not, however, a proof that it was taken in while the person was living. The fact that water will penetrate the lungs of a dead body, which is submerged, rests mainly upon the authority of Orfila, who made experiments which fully demonstrate its possibility. It is, indeed, true that most other experimenters have not succeeded, but they have made their trials, either with dead animals or with still-born children. Löffler, however, in his experiments upon puppies, found that if the head were kept in a more or less elevated position, and the jaws separated by a piece of cork, the water readily penetrated after death into the lungs. The observations of Orfila being upon the dead human body, are more to the purpose. He found that, by placing the body in a bath-tub and coloring the water with lamp black or indigo, the colored water could afterwards be found in the subdivisions of the bronchial tubes. In one case even, in which the body, thirty hours after death, was placed *upon its stomach* in the colored water, the water had penetrated as far as the middle of the trachea. Perhaps, as a general rule, water will not be found in the lungs, if the person did not perish by drowning but was thrown in after death, because the head by its weight falls back, and an obstacle is thus placed to the entrance of the water. But where a body has been thrown into a well, or is otherwise found in a posture favorable to the ingress of the water, the discovery of this fluid in the respiratory passages may with plausibility be assumed to be of post-mortem occurrence.

The *absence of water* from the lungs, is certainly not sufficient evidence that the person was not drowned, because it is not invariably present in cases where the person has undoubtedly perished in this way. Moreover, it may have drained away, especially if such manœuvres have been used to resuscitate the person as by rolling him on the ground or suspending him by the heels. It may also disappear by transudation, when the body remains a long time in the water.

§ 934. *Froth in the lungs* has, on the other hand, greater significance as to

(*z*) Wurtemb. Med. Correspond. Bl. iv. No. 1. (*a*) Pyl's Aufsätze, St. 6, Fall. 5.

the cause of death. Although found to a certain extent in other modes of suffocation, such as hanging and in epilepsy and extensive bronchitis, it does not present in these cases the same distinctive characters by which it may be recognized in death by drowning. In the cases referred to, it is very small in quantity, often bloody, and being composed entirely of the mucous secretion of the trachea mixed with air, is viscid, in larger bubbles and closely adherent to the sides of the tube. The watery froth of the drowned is on the contrary abundant, foamy, made up of an infinite number of small bubbles which are easily separable, and which soon dissolve on exposure to the air. It often extends from the mouth to the smaller bronchial tubes, but is generally more limited in extent.

The *absence of froth* from the lungs cannot, however, be assigned as a proof that the person did not die from drowning. Experiments have shown that in certain cases of drowning it is not formed. These are cases in which, from any cause, the person has not risen to the surface to breathe. Piorry, Orfila and others, have shown that when animals are completely immersed in water and forcibly held there until dead, no froth is found in their lungs; but if, on the contrary, they are allowed to struggle and come to the surface, it is formed abundantly. Again, from its very nature, this sign is evanescent. If the body have lain for several days in the water, if it have been removed from the water with the head depending, or finally, if the inspection be not made soon after its removal, especially if the weather be warm, the froth that may possibly have existed, will no longer be found. In Dr. Ogston's observations, the watery froth in the lungs was not found later than fifty-five and a half hours after drowning in summer, and the fourth day in winter. This author states, also, that he met with a case of poisoning with laudanum, in which a light watery froth like that of the drowned was found in the trachea.(*b*)

§ 935. Hence we may conclude, that the more extensively the froth is found in the respiratory passages, the greater will be the probability of death having taken place by drowning, and of the struggle having been active and prolonged before the extinction of life. Unless there are marks of strangulation upon the body, pathological proof of bronchial catarrh, or evidence that the person has been subject to epilepsy, the sign is positive and conclusive of death by drowning. If, on the other hand, no froth is found, this circumstance is no proof that the person did not die by drowning, unless the inspection was made soon after death, the body having been carefully removed from the water, or unless other injuries sufficient to have caused death were discovered. Even then, it cannot be regarded as conclusive.

4th. *Water in the stomach.*—Water is always swallowed in greater or less quantity, by a drowning person who retains sufficient consciousness to make a struggle for life. It will not, however, always be found, if the inspection have been delayed for a long while, or if the popular means have been employed to restore him to life, by getting rid of the water in the stomach. Furthermore, there are certain cases in which the person falls into the water already asphyxiated, or stunned by a blow or a fall, in which case, consciousness not exist-

(*b*) Lond. Med. Gaz. 1851, p. 762.

ing, no struggle will be made, and, consequently, no water swallowed. When, however, water *is* found in the stomach, it may have been swallowed immediately before the presumed accident. Casper(*c*) relates an interesting case in which a child two years old, playing in the neighborhood of a stream, being thirsty, drank eagerly a large quantity of water given to him by his nurse. She left him for a moment, and on her return, found that he had fallen into the water and was already drowned. In this case, the usual signs of suffocation were wanting, there was no watery froth in the trachea or bronchia, but the blood was remarkably fluid, and the stomach filled with water. Hence it is necessary to observe whether the fluid in the stomach is identical with that in which the person apparently was drowned, for although the result will frequently be a negative one, yet it is often possible to detect sand, gravel, parts of water-plants, &c., in the œsophagus and stomach, which it is highly improbable would have been voluntarily swallowed. If the individual be discovered lying in a morass, a stagnant pool, or a privy well, there will be, of course, no difficulty in recognizing the liquids from such places, if found in the stomach.

§ 936. The objection to the evidence from the presence of water in the lungs, that it may have penetrated thither after death, cannot be applied to the sign under discussion. Experiments by Riedell, Champeaux and Faisolle, Maschka, Viborg, Kansler, Orfila, and Piorry, on the dead bodies of animals and men, have fully established the certainty, that water does not enter the stomach *after death*, unless putrefaction is far advanced. Hence the conclusion is warranted, that if the water can be recognized as identical with that in which the individual apparently was drowned (unless it was drunk previous to submersion) he must have swallowed it in his drowning struggles.

§ 937. 5th. *The general signs of death by asphyxia* are found on drowned persons. Contrary to the once prevailing opinion, that apoplexy was the cause of death in drowning, an extravasation of blood in the brain is rarely met with in the drowned. Those who are predisposed to apoplexy, and who suddenly enter cold water, particularly when the stomach is full, may be struck with apoplexy; or those who fall on the head, from a height into the water, may rupture one of the cerebral vessels, but the reader should bear in mind that this is neither a necessary nor a usual condition in those who simply die from drowning. Even a congestion or fulness of the vessels of the brain is not constantly observed, and the appearances often described as such are most probably cadaveric, and due to the depending position in which the head is generally found.

The amount of congestion of the brain depends usually upon that of the thoracic viscera. The lungs appear fuller and more voluminous than usual, sometimes overlapping each other in the anterior mediastinum, but do not contain much blood.(*d*) The ecchymoses which are found beneath the pleura, pericardium and pericranium, in all cases of suffocation, and in some of strangulation, are never found after death by drowning (Tardieu). M. Faure(*e*) has called attention to the emphysematous condition of the lungs resulting from

(*c*) Gericht. Leichen öffnungen. Fall. 77.
(*d*) Bock, Gericht. Sectionen. p. 44.
(*e*) Arch. Gén. 5ème sér. xii. 301, and xv. 474.

the rupture of the pulmonary vesicles and the escape of air mixed with water from them into the intra-vesicular structure, as a distinctive sign of death by drowning, and as being available, therefore, in helping to determine whether a body found in the water was thrown there after death, or is that of a person who died by drowning. Such lungs are remarkable for retaining their natural shape, and for their unusual weight. The heart always contains in its right half, fluid or loosely coagulated blood, and is distended with it if the lungs are at the same time overloaded.

According to some authors, the blood is always completely fluid, but this statement is liable to exceptions, as coagulated blood has been found in some well authenticated cases of drowning, and also in experiments upon animals who have been killed in this way.(*f*) The abdominal organs are usually found much congested, especially the liver and kidneys. If the drowning have taken place during the process of digestion, the stomach, as observed by Orfila, presents a violet color. The bladder sometimes contains urine, at others not; as a sign of drowning, it is of the most complete insignificance. Retraction of the penis is given by Casper as a sign peculiar to death by drowning.

§ 938. 6th. *Marks of violence.*—The first point to be determined in all cases where marks of violence are discovered upon the bodies of persons found in the water, is, whether the individual was really drowned. This is rendered necessary by the fact that persons are not unfrequently thrown into the water dead, or supposed to be dead, after criminal violence has been employed, and it is hoped in this way to conceal the cause of death. Moreover, suicides endeavor sometimes to destroy themselves by drowning, when they have failed by other means. If it can be shown, from an absence of the signs of drowning before enumerated, that the person was probably dead at the time of submersion, it will, of course, not be necessary to consider the possibility of the injuries having been accidentally received at that time. The character and extent of the wounds or other injuries will often enable us to determine very nearly at what period they were received. Indeed, it is only by a careful examination of these, and a comparison of them with those which could possibly be made accidentally in drowning, or immediately afterwards, that we can hope to approach to a correct judgment of the case. A person falling from a height into the water, may sustain various severe injuries, especially if the water be shallow, and he fall upon the head. Fractures and even dislocations have been produced by this means. The first may be caused by sudden, violent contact with some hard body in the water, or at its bottom; the second is illustrated in the case of a man who for a wager jumped from the parapet of London Bridge, and dislocated both arms, probably in consequence of holding them in a horizontal position. Besides these injuries, various contusions and lacerations may occur in drowning or immediately after it, from accidental violence, sustained by the person in his drowning struggles, his body being possibly thrown against projecting rocks, roots of trees, or sharp pieces of wood or iron. Sometimes a mark, similar to that made in hanging, is found upon the neck of persons who have been accidentally drowned, and caused by

(*f*) Taylor, Med. Jur.

the pressure of the collar or fastening of the dress rendered tense by the imbibition of water.

A case is recorded(*g*) in which the body of an old man, who had voluntarily drowned himself, was drawn out of the water by means of a rope fastened round the neck for the purpose. This was done probably half an hour after death. The thyroid cartilage was broken into several pieces, and there was a distinct ecchymosis over it, made by the rope.

It is the province of the physician to determine whether these injuries could have been produced in this fortuitous manner, but most of the circumstances which throw light upon these doubtful cases come properly under the cognizance of the jury. There are some injuries, on the other hand, which are of such a nature as to indicate that they were inflicted previous to drowning. They are such as cannot be attributed to any cause incidental to drowning, but must have been either self-inflicted or homicidal. They are stabs, gunshot wounds, incised wounds of the neck, &c. In estimating the cause, nature, and effect of these injuries, the physician will be governed by the facts referred to in the chapter on Wounds, since evidently the circumstance of subsequent immersion will not materially affect the distinction between homicide and suicide. If, however, the body have lain long in the water, and especially if the process of putrefaction have begun, the information derivable from the marks of violence upon the body will be greatly impaired in value. Not only will the coagula, wherever the water has gained access, be dissolved and washed away, but the size, direction, and color of the wound will be altered. The cause of this fact will be fully apparent from a consideration of the structural changes made by the process of decomposition.

§ 939. 7th. *Putrefaction, &c.*—A body which is taken out of the water presents a pale and bleached appearance, which is more striking the warmer the temperature of the water. In summer it is observable in a few hours; in winter, not until several days after death. After the body has been removed from the water, and while still fresh, the face and head, the neck and the breast as far as the middle of the sternum, acquire one after the other a brick-red appearance. But the putrefactive process very soon begins, and spots of a bluish-green color appear in the midst of this redness, and generally are first evident upon the temples, ears, and nape of the neck, and then on the neck and breast. These spots mingle together, and more rapidly when the body has lain long in the water, so that in summer, after eight to twelve days, and in winter, in twelve to fourteen days, the whole head, neck, and somewhat later the breast also have acquired a dirty-green color, with interspaces of dark red. Casper says that it is not unusual to see bodies of the drowned which exhibit this striking putrefactive change, while at the same time the rest of the body, particularly the abdomen and extremities, retain their pale color. In water of the temperature of 50° to 54° Fahr., the body becomes rigid in a few hours. The skin assumes a yellowish-white color, the lips become blue, and the joints inflexible.

§ 940. After the lapse of from three to ten days, the condition of the body

(*g*) Henke's Zeitschrift, für 1844, H. i.

undergoes a marked change. The development of gas becomes so great as to cause the body to float, and in the course of the second week, the skin becomes emphysematous, the cuticle loose, and the parts of the body which are above the surface of the water acquire tints of green, blue, and brown, and become dry and parchment-like. If the body has rolled about in the water, as will be the case where the current is rapid, these changes take place more gradually. If taken out of the water about this time, the features become in a few hours scarcely recognizable, in consequence of the swelling and discoloration, the latter being blackish-green ; the whole of the body is swelled and puffy, and the scrotum often distended to the size of a child's head. The penis, on the contrary, is very much shrunken. The internal organs, with the exception of the brain, are comparatively fresh in their appearance. If the body, however, have remained in the water, and the weather be cool, few changes worthy of note take place during the next six or seven weeks. But about the third or fourth month the skin has become so much eroded in various places, but especially over the inguinal region, that perforations will be found leading to the various cavities of the body. In consequence, the gases generated by decomposition escape, and the body sinks again in the water. The skin and the muscular tissue become transformed into incrustations of adipocere, and the bones are so loosely held together, that portions of the skeleton are apt to be separated. The time which a body has lain in the water cannot be determined with any precision, after the process of putrefaction has once commenced. The rapidity and character of the alterations which it undergoes vary according to age, sex, habit of body, temperature of the water and the air, depth of the water, and whether salt or fresh, stagnant or running, the attacks of fish and birds of prey, and finally whether the body is clothed or not.

Hence, it may be inferred from these remarks, how easily, after the body has lain some time in the water, the external features of wounds and other injuries may be masked by the progress of putrefaction and the imbibition of water by the skin.

§ 941. IV. *Accidental or otherwise.*—Infants and the infirm and aged may be accidentally drowned in very shallow water, as may also, indeed, adults who fall into it, the mouth downward, in a fit of epilepsy or helpless from intoxication. A man was in the act of leaving a privy, when he was seized with an epileptic fit and fell with his face in a piece of dirty water, which did not exceed a foot and a half in breadth, with a depth of from three to four inches. When discovered after death, only his mouth and nostrils and one cheek were found to have been under water.(*h*) Moreover, persons bent on

(*h*) Dr. Ogston, Med. Gaz. May 2, 1851. Dr. Taylor, in his critique of the medical evidence in the case of Kirwan (Dublin Quarterly Jour. Jan. 1853), says: "Persons while bathing, or exposed to the chance of drowning, are often seized with fits which may prove suddenly fatal, although they may allow of a short struggle ; the fit may arise from syncope, apoplexy or epilepsy. Either of the last conditions would, in my opinion, reconcile all the medical circumstances of this remarkable case. It is the result of twenty years' experience in the investigation of these cases, that the resistance which a healthy and vigorous person can offer to the assault of a murderer, intent upon drowning or suffocating him or her, is in general such as to lead to the infliction of a greater amount of violence than is necessary to insure the death of the victim. The absence of any marks of violence or wounds on the body of Mrs. Kirwan, excepting such small abrasions as might have resulted from accident, may be

suicide, have been known to destroy themselves in this way; a case is related by Dr. Smith in which a woman thrust her head into an opening which she had made in the ice and so perished. Where, however, persons are found drowned in shallow water, the natural presumption will be that they have been forcibly held there by one or more murderers. It is only by the absence of any marks of violence, that we may infer that the act may have been suicidal or accidental.

§ 942. The presence of ligatures upon the hands and feet, and of weights attached to the body, rebuts the presumption of accidental drowning, but does not prove that it was homicidal. In a case which occurred in Paris, the body of a man was found in the river, his neck, legs, and hands being fastened together by a cord furnished with slip knots. It was proved that he had died by drowning, and had himself secured the cord, to insure a more speedy death.(*i*) If, however, as is remarked by Mr. Taylor, the limbs bear evidence of violent constriction from the cord, and especially if these marks are found on the forepart of the neck or on *both wrists*, the presumption of murder becomes very strong. In another case, the body of a man was found in the water, with his legs tied together, over the trowsers, below the knee. The right wrist was fastened in a noose, and the free end of the cord, after passing around the body, was loosely tied or wrapped around the left. This latter circumstance, together with the absence of marks of violence, rendered it probable that this also was a case of suicide.(*j*)

CHAPTER XII.

SIGNS OF DEATH.(*k*)

I. Cessation of the respiration and circulation, § 943.
II. Filmy aspect of the eyes, § 944.
III. Pallor of the body, § 945.
IV. Extinction of animal heat, § 946.
V. Relaxation of the muscles, § 947.
VI. Relaxation of the cornea, § 948.
VII. Flattening of the fleshy parts, § 949.
VIII. Suggillations, § 950.
1st. External, § 951.
2d. Internal, § 952.
(1.) Lungs, § 952.
(2.) Brain, § 953.
(3.) Kidneys and intestines, § 954.
(4.) Heart, § 955.
IX. Cadaveric rigidity, § 956.
X. Putrefaction, § 957.
1st. Fat, &c., § 958.
2d. Woman after childbirth, § 959.
3d. Newly-born infants, § 960.

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taken in support of the only view which, it appears to me, can be drawn, namely, that the death was not the result of a homicidal drowning or suffocation, but most probably of a fit resulting from natural causes."

(*i*) Ann. d'Hygiène, 1833, i. 207.

(*j*) Casper's Vierteljahrschrift, 1854, Heft. i. p. 167.

(*k*) This chapter is mainly drawn from Dr. Casper's Pract. Hand. Gericht. Med. Berlin, 1857.

4th. Manner of death, § 961.
5th. Effect of external agents, § 962.
(1.) Exposure in open air, § 962.
(2.) Moisture, § 963.
(3.) Heat, § 964.
6th. External signs, § 965.
XI. Saponification, § 966.
XII. Mummification, § 967.
XIII. Decomposition of internal organs, § 968.
1st. Windpipe, § 969.
2d. Brain of infants, § 970.
3d. Stomach, § 971.
4th. Intestinal canal, § 972.
5th. Spleen, § 973.
6th. Omentum and mesentery, § 974.
7th. Liver, § 975.
8th. Brain of grown persons, § 976.
9th. Heart, § 977.
10th. Lungs, § 978.
11th. Kidneys, § 979.
12th. Urinary bladder, 980.
13th. Œsophagus, § 981.
14th. Pancreas, § 982.
15th. Diaphragm, § 983.
16th. Arteries, § 984.
17th. Uterus, § 985.

§ 943. I. *Cessation of the respiration and of the circulation*, so that no pulsation or murmur can be discovered even with the aid of a stethoscope.

§ 944. II. *Filmy aspect of the eyes.*

§ 945. III. *Pallor of the body.*—Persons of a very ruddy complexion, however, often retain a high color for some time after death. Red or livid rings around ulcers on the foot, &c., do not disappear. This is also the case with tattoo marks, jaundice, and discolorations produced by a blow received some time previous to death.

§ 946. IV. *Extinction of animal heat.*—This is a gradual process, and the time required to produce it varies with the condition of the body at the time of death, with the manner of death, and with the medium in which the body is kept after death. Fat bodies, for example, retain warmth, *cæteris paribus*, longer than those which are lean. The same is said to be true of the bodies of persons killed by lightning, and it is certainly the case with all such as perish by any kind of suffocation. Very much depends upon the temperature of the medium in which the body is kept. It is well known that a dead body if thrown into water will cool very rapidly, while if thrown into a dung-heap, or the vault of a water-closet, or even if closely covered in a bed, it will cool very slowly. As a general rule, bodies become entirely cold within from eight to twelve hours after death.

§ 947. V. *Relaxation of the muscles* generally begins immediately after death, and is the earliest symptom of the extinction of the turgor vitalis.

§ 948. VI. *The relaxation and sunken state of the cornea* after death is well known. Still more remarkable is the suppleness or pliancy of the eyeball. Up to the last moment of life the eyeball uniformly remains elastic, and resists any pressure of the finger; but within twelve or eighteen hours after death this resistance ceases, and the ball becomes gradually softer and softer, until decomposition takes place.

§ 949. VII. *The flattening of the fleshy parts* upon which the body rests, not only on the back and sides, but also the calf of the legs, on the upper and lower extremities, on the thighs, &c., according to the position of the body at the time of death and subsequently.

§ 950. VIII. *Suggillation*,(*l*) or livid discoloration, is the result of the settling of the blood in obedience to the law of gravity. Hence it occurs upon the depending parts of the body, as on the back, on the calf of the leg, on the face, on the ears, and on the sides of the breast. It begins to appear within ten or fifteen hours after death, and the spots increase in size until decomposition takes place. As suggillation furnishes in itself satisfactory evidence of the reality of death, we shall notice it further, distinguishing, for the sake of convenience, between external and internal.

§ 951. 1st. *External suggillations, or death spots.*—These deserve careful attention, because they may be easily mistaken by the inexperienced for ecchymoses, or bruises, and consequently for traces of violence inflicted during life. The scalpel, however, furnishes an easy and certain test by which the two may be distinguished. In post-mortem suggillations, an incision, no matter how bold and deep, will never cause liquid or coagulated blood to appear in the wound. At the most, only small specks of blood will be seen arising from the division of small veins of the skin. But wherever there is the least ecchymosis, an incision will be followed by a flow of blood. As this is the only decisive test between these two appearances, which in many respects are so much alike, it should never be omitted by the examining physician.

The color of suggillations varies but little between bluish red, scarlet, and copper red. They are never raised at all above the level of the skin, as is often the case with ecchymoses. They also assume different shapes—round, oblong, or angular. At first they appear in separate spots, having the size of a walnut, of an apple, of the hand, &c., until they gradually run together and cover large portions of the body—as the half or the whole of the back. These spots are not affected by age, sex, or constitution, and follow upon all kinds of death, not excepting death by hemorrhage. Engel maintains that suggillations may be caused to disappear by making an incision into them, and allowing that part of the body in which they are to lie dependent. But Dr. Casper remarks that, after a great number of experiments, he had never seen one entirely disappear, although they become somewhat smaller and paler.

§ 952. 2d. *Internal suggillation* (hypostatic congestion) appears in several different organs, but chiefly in the lungs, in the brain, the kidneys, and intestines.

(1.) In the *lungs* it is seen very frequently. It makes its appearance, according to Orfila, within from twenty-four to thirty-six hours after death, but there is no doubt that it often arises far earlier than this, at the time that the blood in general begins to settle. In the case of bodies which have remained lying on the back, both lungs at their posterior part, or about a fourth part of the whole parenchyma, will be found of a much darker color

(*l*) This word is now most commonly employed as synonymous with *cadaveric lividity*, to describe those violet-colored spots which form upon the dependent portions of dead bodies by the influence of gravity.—*Nysten, Dict. de Méd.* 11ème éd.

than the rest, and, on being laid open, an evident sanguineous engorgement will be seen, even when these organs are anæmic. This is so striking that it may easily mislead the inexperienced, and cause them to attribute the death to apoplexy of the lungs, pneumonia, &c. This is especially apt to be the case where the blood is unusually dark, and where œdema of the lungs had existed.

§ 953. (2.) *In the brain.*—It is important to observe that hypostatic congestion often occurs in the brain even in cases of death by bleeding; so that a quantity of blood in the cerebral veins generally, and especially in the posterior sinuses, is no evidence against this manner of death. Whether, in case this condition do not appear soon after death, it can afterwards be made to appear by changing the position of the body, is doubtful. This common appearance of hypostatic congestion in the brain must not be mistaken for active hyperæmia, as may easily be done by the inexperienced, who are thus led to attribute death to an attack of apoplexy where none existed.

§ 954. (3.) *In the kidneys and intestines.*—Hypostatic congestion occurs in the kidneys and other organs of the abdomen. It is especially common in the organs which lie in the pelvis. The bluish-red color which appears on the dependent folds of the intestines may easily be mistaken for disease, whereas it is only a cadaveric phenomenon. The diagnosis, however, is easily made by drawing out the whole mass of intestine, when the arborescent appearance will be seen to occur at regular intervals. When the body has remained resting on the back, the posterior half of the kidneys becomes discolored, and in this way may easily be distinguished from a general hyperæmia in this organ.

§ 955. (4.) *The heart.*—Suggillation does not occur in the heart; but as this organ exhibits more than any other the so-called *polypus*, a very important formation as regards medical jurisprudence, it may be conveniently noticed here. These heart-polypi are merely coagulated fibrin, and are either clear and white, or colored red by the blood. It is not to be admitted that this coagulation of the blood occurs before death, as an ordinary phenomenon, although in cases of a protracted agony it may take place in this long interval between life and death. As a general rule it takes place after death, and as the body gradually grows cold. Hence, where coagulated blood is found in wounds upon a dead body, it cannot safely be concluded that the wounds were produced before death, upon the ground that "blood cannot coagulate after death." This is one of the many erroneous notions which have remained undetected, from the habit of treating medical jurisprudence in a merely theoretical way. Engel is right when he says, "I do not believe that there is any disease or manner of death after which blood does not coagulate in the dead body. Some special case where it has not occurred may be cited, but many other cases may be adduced where it has occurred after the same disease or manner of death." This coagulation of the blood must follow peculiar laws which are as yet unknown; for it not only takes place after those kinds of death of which a fluid state of the blood is characteristic—as after different kinds of suffocation—but, what seems quite inexplicable, the coagulation occurs in many organs and vessels sooner than in others, not only in the heart (the right ventricle), but also in the inferior vena cava, the liver, &c. The proposition that "coagulated blood

around or in a wound shows reaction during life, because no coagulation of the blood can take place after death," is, with all its consequences, erroneous.

§ 956. IX. *Cadaveric rigidity.*—This mark of death is well known. It occurs within tolerably wide limits, but commonly between twelve and twenty hours after death, and lasts from one to seven days. After this rigidity passes off the body again becomes as pliant as before. The primary cause of its appearance is unknown. After death from narcotic poisons it does not take place, or, at least, only for a short time. Neither is it observed, according to Casper, in the body of the immature fœtus. These two cases constitute perhaps the only real exceptions. There is a great difference of opinion as to the longer or shorter continuance of cadaveric rigidity after certain specific diseases. A low temperature of the air and the use of alcohol tend to prolong it. Cases are cited by Dr. Casper, in which he observed it after two, four, six, and eight days. The stiffness of a frozen body may easily be distinguished from cadaveric rigidity. In the former case the whole body is as stiff as a board, while in the latter some suppleness about the joints of the knees and elbows always remains.

Where the above marks are observed it may be concluded that the body is that of a person who has been dead from two to three days.(*m*)

(*m*) The subject of cadaveric rigidity has been very thoroughly investigated by Dr. Kussmaul, whose essay upon the subject also presents an epitome of what had previously been written concerning it. (See Prager Vierteljahrs, l. 67.) From this it would appear that, whatever may be the cause of death, the phenomenon in question is never totally wanting. It has been observed by Bertelsen and by Ehrmann, even in the fœtus removed by Cæsarian section from the womb. Yet it may occupy certain portions only of the body. It is usually observed first in the neck and the muscles of the lower jaw, whence it extends both upwards and downwards. In a limb it can, if complete, be removed by forcible flexion, and if not complete, the flexed limb will become rigid again. The period after death at which it begins and that at which it ends are entirely variable. It may commence within an hour, or be delayed for a whole day, and it usually appears latest in the bodies of vigorous and muscular persons. In them, also, it generally lasts longest, and in cold weather may continue for eight or ten days; but when the weather is hot and the body emaciated it may disappear in the course of ten or fifteen hours. Kussmaul lays it down as a law that whatever powerfully depresses the vitality of the muscular fibre favors the speedy supervention of its rigidity. Oxygen, it is stated, being the agent upon which its vital power depends, the more rapidly the influence of this agent is withdrawn the earlier will rigidity occur. We see this condition supervening rapidly in animals which consume a large proportion of oxygen in breathing, as birds, while in those which consume but little air, as the amphibious animals, it is very tardily developed.

It is stated in the text that warmth delays while cold hastens cadaveric rigidity; but such a statement would seem to be applicable only to the extremes of temperature; and hence it matters little in reference to this point whether a body is covered with the bedclothes or is naked, or whether it is exposed to the average temperature of winter or summer. Sommer placed two stillborn infants in a bath at 90°–100° F., immediately after their birth. In from three to four hours rigidity developed itself and reached its maximum in six hours.

The essential cause of cadaveric rigidity is not well known. Brücke, and after him Kühne, have given plausible reasons for supposing it to depend upon the coagulation of the fibro-albuminous fluid which imparts moisture to the organs. (Prager Vierteljahrs, lxi. 93.) Other explanations have been proposed, but none suffice.

It has been shown by Orfila, and more recently by Dr. Ogston (Brit. and For. Med. Rev., April, 1857, p. 303), that under the general title of cadaveric rigidity two conditions have been confounded which are apparently distinct from one another. The one comes on at a variable period after death, and the other, which the former writer terms *spasmodic rigidity*, and the latter *cadaveric spasm*, commences at the latest instant of life, and continues until the muscular tissues have begun to alter under the influence of the putrefactive process. Like ordinary cadaveric rigidity, it differs

§ 957. X. *Putrefaction.*—The rapidity with which the process of decomposition takes place depends partly upon the condition of the body, and partly upon external causes.

§ 958. 1st. Fat, soft, lymphatic bodies putrefy, *cæteris paribus*, far sooner than those which are lean, because the quantity of moisture in them favors the work of decomposition. This will account for the fact that the bodies of very aged persons generally decompose more slowly than those of others.

§ 959. 2d. The bodies of women who die soon after childbirth, from whatever disease, decompose very rapidly. But it is not to be supposed that difference of sex, in itself, affects the process.

§ 960. 3d. It is known that the bodies of newly-born infants decompose, *cæteris paribus*, sooner than other bodies. But it must be observed that in the great majority of cases the bodies of infants judicially examined have been subjected to influences to which other bodies are seldom subjected. In most cases the body has been exposed in the open air naked, or only slightly covered.

§ 961. 4th. The process of decomposition is materially affected by the manner of death. After the sudden death of a person in health the body decomposes much less rapidly than after an exhausting sickness, or a disease which impairs the blood, as typhus or putrid fever, organic dropsy, tubercular disease, &c. The process is also very rapid in the case of bodies which have been much bruised or mangled. Those cases, however, must be excepted in which the body remains protected from the air, as when buried underneath fallen walls, &c. The bodies of persons suffocated by smoke, coal-gas, and sulphuretted hydrogen-gas, decompose very quickly. Decomposition also takes place speedily after death from narcotic poisons. This is not so much the case after death from other poisons, especially after poison by phosphorus. Where a person has been poisoned by sulphuric acid the process of decomposition is decidedly retarded, probably because the acid hinders the disengagement of ammonia. In the case of persons who have been killed by a stroke of apoplexy, while in a state of drunkenness, the body has been observed to remain sound an unusual length of time, owing to the well known anti-putrescent powers of alcohol. Where death is produced by arsenic decomposition takes place as usual up to a certain point, after which it ceases and mummification begins.

In addition to the above mentioned influences which affect the process of decomposition, there must be others, as yet unknown to us. As evidence of this fact, Dr. Casper cites a case in which he examined the bodies of fourteen men, all of about the same age, who had followed the same course of life, and who had been killed at the same moment by a single cannon-ball. In all of these cases the progress of decomposition was different. The same author cites

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from tetanic spasmodic rigidity in this, that, as Kussmaul has shown in the form last named, the bent limb when forcibly straightened tends to resume its previous posture, while in both of the other forms the limb retains the position in which it is placed. There are numerous instances in which persons have been found dead in a sitting posture from which they must have fallen but for this cadaveric spasm, and Dr. Ogston relates the case of a man who committed suicide by hanging, and between whose knees a Bible was found, retained solely by the lateral pressure of the closely adducted thighs.

also the case of a married couple, of nearly the same age, who had been suffocated during the same night by coal-gas. The bodies had been subjected to the same influences up to the time of examination, and yet the back and belly of the man were quite green, the windpipe was brownish-red, &c., while the body of the wife, an uncommonly fat woman, was perfectly sound both without and within.

§ 962. 5th. *Effect of external agents.*—The external agents which affect the process of decomposition are Air, Moisture, and Heat.

(1.) Bodies left uncovered in the open air decompose, *cæteris paribus*, far sooner than others. It is not uncommon to find in the case of persons who have been drowned with their clothing on, that part of the leg which is protected by the boot quite sound, when the rest of the body is almost decomposed. Owing to this influence of the atmosphere, the rapidity of decomposition will be affected by the manner in which the body is clothed, by the kind of coffin in which it is inclosed, by the soil in which it is buried, and by the greater or less depth of the grave. It is well known, for instance, that pine coffins will soon decay and leave the inclosed bodies exposed. So, too, bodies interred in shallow graves are less protected from the decomposing effect of the atmosphere, than those which are interred deeper. A stiff, clay soil shuts out the air more effectually than a porous, sandy soil. But this effect of difference of soil may be more than counterbalanced by the presence or absence of another agency, viz., moisture. Clay, or turf soils, are apt to contain more moisture than sandy soils, and hence promote to a greater extent decomposition.

§ 963. (2.) In proportion to the amount of moisture will be the greater or less rapidity of decomposition. Hence bodies which remain in water, decompose much more quickly than those which are buried in the earth.

§ 964. (3.) Although heat of itself has a tendency to dry up the body and thus to check the process of decomposition, yet, when united with the above-mentioned agencies of air and moisture, it promotes the process very greatly. This is seen in the fact, that a body exposed in summer at a temperature of 68 or 78° F., will, in the course of one or two days, be quite unfit for the dissecting table, while in winter, at a temperature of 14° to 20° F., this will not be the case after ten or twelve days. The same effect of temperature is seen where the body is kept in water. If frozen in ice, it will remain sound a very long, and, indeed, an indefinite time, as is proved by the mammoth found in Siberia, parts of which are still preserved in the University of Moscow. A body kept in water at a temperature of from 35° to 45° often shows, after ten or twelve days, the marks of strangulation, while at a temperature of 70° or 75° these disappear in from five to seven days. It must also be observed, in this connection, that, when the water is deep, the temperature at the bottom differs perceptibly from that at the top, the latter being more affected by the sun. Hence, a body floating on the top of the water will decompose more rapidly than one remaining at the bottom. A body taken out of the water, and exposed to the atmosphere, will undergo decomposition to a greater extent in a single day than it would have done in two or three days, had it remained in water. A higher or lower temperature of the earth quickens or

retards decomposition in the same way as a higher or lower temperature of the water.

Dr. Casper estimates the comparative effect upon a dead body of exposure to the air, and of protection in water or in the earth, as follows: "A body, when freely exposed in the open air, will ordinarily undergo as much decomposition in one week or month, as it would in two weeks or months if kept in water, or in eight weeks or months if buried in the earth after the usual manner. This, of course, is offered only as a general rule. In each individual case allowance must be made according to the circumstances.

§ 965. 6th. *External signs of decomposition.*—In describing these appearances, bodies which have been exposed, from the time of death, in the open air, may be taken as types.

(1.) The first appearance, in order of time, is a greenish color upon the surface of the belly, accompanied with the smell peculiar to putrefaction. This discoloration arises between twenty-four and seventy-two hours after death, according to the condition of the body and the temperature of the medium in which it is kept.

(2.) Within the same period the cornea becomes soft, yielding to the pressure of the finger.

(3.) Within from three to five days after death, this green color spreads over all the lower part of the abdomen, including the genital organs, which, in the case of both sexes, assume rather a dirty, brownish-green color. In all cases of death from suffocation, bloody, frothy discharges from the nostrils will be observed, mingled with air-bubbles. Green spots of different sizes will now appear also on other parts of the body, as on the back, on the lower extremities, on the neck, and on the sides of the chest.

(4.) Between eight and twelve days after death, the whole body presents this green appearance, which has become darker in color and is accompanied with a stronger smell. On some parts, as on the face and neck, the color is a reddish-green, owing to the exudation of blood through the pores of the skin. Gases have now begun to form, and to swell up the body. These are generally inflammable, and a burning jet may be produced by applying a lighted taper to a small opening made in the abdomen. The color of the eyes may still be recognized, but the cornea is concave. The anus stands open. On some parts of the body, especially on the extremities, and on the neck and breast, dirty red streaks will be seen where the skin remains clear. The nails still adhere firmly to the skin.

(5.) Between fourteen and twenty days after death, a bright green and reddish-brown color spreads over the entire body. The cuticle is raised in blebs of different sizes, many of them as large as the palm of the hand, and which in some places have burst open. Maggots now appear in great numbers, especially in the folds and orifices of the body. Owing to the continued formation of gases, the chest is dilated, the belly acquires the shape of a large ball, and in fact the cellular tissue of the whole body is enormously distended, so as to assume gigantic proportions. The features are distorted, and the entire physiognomy so changed as to make it almost impossible even for the nearest relatives to recognize the person. The color of the eyes is no longer

discernible, for the distinction between pupil and iris can no longer be seen, and the whole sclerotica has assumed a uniform dirty red color. In men, the penis is greatly swollen, and the scrotum is as large as a child's head. The nails lie loosened at their roots. At this stage of decomposition the effect of difference of temperature is remarkable. Exposure for ten or twelve days at a temperature of 68° or 78° will produce as great changes in the condition of the body as would take place within twenty or thirty days if exposed at a temperature of from 32° to 50°. The body now swarms with maggots, and where it is left unprotected in the air or in water, may become the prey of numerous other animals, as dogs, cats, foxes, wolves, birds of prey, and land and water rats. Fresh-water fish (German) do not feed upon dead bodies. Where the body has thus served for food the marks will be found upon the breast and belly and on the extremities, the bones of which are often laid bare. The consequent opening of the cavities and the lesions of the soft parts of the body may easily be distinguished, with a little attention, from traumatic injuries. When a body answers to the above description it may be safely concluded to be that of a person who has been dead at least so long as from fourteen to twenty days, not that this is the ultimate limit, for at this stage of decomposition the process is very gradual, several weeks and even months often making little difference in the appearance of the body.

(6.) The stage of putrid colliquation arises within from four to six months after death, or, where the body has been kept in a warm and moist medium, earlier than this. Owing to the continued swelling the chest and belly have now burst open, and these cavities lie exposed. The skull has also yielded to the pressure, and the brain has exuded. The orbitar cavities are empty. All the soft parts are in a state of dissolution and finally disappear, and entire bones, especially of the skull and of the extremities, are laid bare, and the latter separate from the trunk. No trace of features any longer remains. The breasts of females have disappeared, and of the genital organs nothing indicative of sex remains, unless perhaps the hair or the shape of its growth; for in man it ascends towards the navel, but in woman is confined to the pubis. But even at this stage the presence of a womb may indicate to which sex the dead person belonged.

§ 966. XI. *Saponification.* (*Adipocere*).—In cases where the body is exposed to the continued action of water, whether by lying in water itself or in very damp soil, the process of putrid decomposition proceeds no farther than the stage above described, but is succeeded by saponification. It is difficult to say exactly how soon this process begins to take place. Devergie thinks that it requires a year for a body lying in water, and about three years for one lying in the earth, to become entirely saponified, or converted into adipocere. This process cannot reach any great extent in less than half a year where the body remains in water, or in less than a year where it lies in moist earth, although it may begin to appear earlier than this. The appearance is that of a homogeneous, pure or slightly yellowish-white, fatty substance, which is easy to be cut, which melts in flame, and has a smell somewhat like mouldy cheese, but by no means very disagreeable. The muscles first undergo this process, but it finally reaches all the organs of the body, which now becomes one shapeless

mass, whose original appearance is no longer discernible. According to Guntz, the adipocere thus formed has more bulk than all the fat which belonged originally to the body. This fact is important to observe in reference to the weight of the dead bodies of infants.

§ 967. XII. *Mummification.*—This process, in which the body is dried up and assumes a rusty-brown color, is of little interest in connection with medical jurisprudence, since little is known of the influences necessary to produce it, as well as the time required for the process. Mummification occurs as well where the body is exposed in a vault to a drying wind, as where the atmosphere is entirely excluded. It also takes place often in the case of bodies buried beneath the burning sands of the desert. At what time the natural process of mummification begins to show itself where the existing circumstances are favorable, is not determined; we only know that, once perfected, the mummy will last thousands of years. Hence where a body is discovered already mummified, it would be impossible to decide, with any approach to accuracy, how long a time has elapsed since the occurrence of death.

§ 968. XIII. *Decomposition of internal organs, in its several stages.*—The greater number of influences which combine to affect these organs, produce a much greater difference in the time of their decomposition than exists in the case of the external organs, and hence they furnish marks by which the time of death may be more accurately determined.

§ 969. 1st. The *windpipe* and *larynx* are the first of these organs which exhibit signs of decomposition. On bodies, which still appear quite sound upon the surface, or, at most, show only a few green spots on the under parts, the thin mucous membrane of the *trachea* exhibits a remarkable paleness throughout its whole extent, except when death has been produced by suffocation or *laryngitis*. When the process of decomposition has advanced a little farther, so that the whole under part of the body has become green, commonly in from three to five days after death in summer, and in from six to eight in winter, this thin mucous membrane has assumed a uniform dirty red color, in which no vascular injection can be discovered even with a microscope. This appearance occurs before any marks of decomposition are visible upon other internal organs, and is not influenced by age, constitution, or manner of death. The inexperienced should be careful not to mistake this natural effect of decomposition for capillary injection or the effect of suffocation or of drowning. In the farther course of decomposition, the mucous membrane of the windpipe becomes olive-green, the cartilages of the tube separate, until at last the whole organ disappears.

§ 970. 2d. The organ which next, in order of time, yields to decomposition, is the *brain of infants*, not more than a year old. The delicate texture of the organ at this age, and its comparatively slight protection from the atmosphere, render it an easy prey to decomposing influences, so that it will often be found to be quite destroyed when other organs are perfectly sound, and when no discoloration is to be seen, except upon the surface of the body. In decomposing, it changes to a thin pulpy substance of a rosy-red color, which discharges itself as soon as any opening is made in the skull, and leaves no trace of the several parts of the organ.

§ 971. 3d. The *stomach* decomposes at an early period. The first traces of the decomposition are certain irregular, dirty-red spots in the *fundus;* they vary much in size, being sometimes as large as a plate, and often have bluish-red streaks, or veins, running through them. These spots appear first on the posterior surface, where they are partly due to hypostatic congestion, but soon after show themselves on the anterior surface. They are described by some authors as inflammatory, or as evidences of asphyxia by hanging or drowning, but are really nothing more than the result of early decomposition. In case of doubtful poisoning, it is very important to mark these changes. As the process of decomposition advances, the color changes from a dirty-red to a grayish-black.

§ 972. 4th. The *intestinal canal* follows next in order in the progress of decomposition. The peculiar color produced by bile, owing to the contact of a portion of the intestine with the gall-bladder, cannot be mistaken. In the course of decomposition the intestines assume a dark-brown color, they burst open and discharge their contents, become greasy, and are finally reduced to a dark, shapeless, pulpy substance.

§ 973. 5th. The *spleen*, when not diseased, commonly continues sound longer than the intestines, but belongs to the class of organs which decompose at an early period. It grows softer and softer and is easily crushed, and afterwards assumes a bluish-green color, and becomes so soft that it may be rubbed down with the knife-handle.

§ 974. 6th. The *omentum* and *mesentery*, if free from fat, may remain sound several weeks after death; but if fatty, not so long. These organs assume a grayish-green color and dry up.

§ 975. 7th. The *liver* in grown persons may remain sound for some weeks after death. In infants it begins to decompose earlier. The first appearance is that of a changeable-green color seen first on the convex surface, and which afterwards spreads over the whole organ, and finally changes to a coal-black. The size of the liver is lessened in the same proportion as that of the other organs by the evaporation of its fluid constituents, and the parenchyma becomes pulpy. The texture of the gall-bladder, however, may be discerned at a later period.

§ 976. 8th. The first trace of decomposition in the *brain* of grown persons is a light-green color, seen first at its base, and which gradually spreads over the whole organ, from without inwards. In a medium temperature the brain softens within two or three weeks, but months may elapse before it changes into that reddish pulpy substance, into which, at so early a period, the brains of infants are converted. Where the brain is exposed by a wound in the skull decomposition may take place much earlier.

All the above mentioned organs belong to the class of those which decompose at an early period.

§ 977. 9th. The *heart*. This organ is often found still sound, although collapsed and quite empty of blood, for weeks after death, and after the decomposition of the liver, intestines, &c., has reached an advanced stage. It becomes soft, first in the columnæ carneæ, and then in the walls, and assumes a greenish, then a grayish-green, and, finally, a black color. The

small quantity of *liquor pericardii* which the heart contains disappears by evaporation, as the process of decomposition advances, and the pericardium becomes quite dry. This stage of decomposition, however, is not commonly reached until some months after death.

§ 978. 10th. The *lungs* begin to exhibit marks of decomposition about the same time as the heart. They are often found in such a state of preservation that their structure may be readily discerned, after the external portions of the body are far advanced in the process of decomposition. The first appearance upon these organs is that of little bladders, varying in size from a millet seed to a bean, which are occasioned by the formation of gas under the *pleura*. These bladders at first appear singly and on different parts of the lungs, but afterwards they increase to such an extent that they cover large portions of the organ, especially on its under surface. The color of the lungs remains for a while unchanged, but as decomposition advances they become of a dark, bottle-green color, and, finally, entirely black. They now become soft, collapse, and, at last, their characteristic structure is destroyed.

§ 979. 11th. The *kidneys* continue sound longer than the heart and lungs, and will never be found to have reached the putrid state in such bodies as are only half decomposed. These organs become soft, and of a chocolate-brown color, but even at this stage their granular texture may be easily discerned. Afterwards, but long after death, they become greasy, of a blackish-green color, and are easily torn.

§ 980. 12th. The *urinary bladder* yields to decomposing influences still later than those organs which have been mentioned.

§ 981. 13th. The *œsophagus* will often be found tolerably firm, and only of a dirty grayish-green color, some months after death, when the stomach and intestines admit no longer of close examination.

§ 982. 14th. The *pancreas* resists decomposing influences so strongly that one must have a body almost entirely putrid in order to observe the process in this organ.

§ 983. 15th. The *diaphragm*. Green spots appear upon this organ within the first week after death, but after four or six months its muscular and tendinous structure may be distinguished from each other.

§ 984. 16th. The *arteries* decompose among the last of all the soft organs. Devergie reports a case where the *aorta* was perfectly discernible fourteen months after death.

§ 985. 17th. According to Dr. Casper, the *uterus* yields to decomposition last of all the internal organs. It is often found lying in its place, tolerably firm, though of a dirty-red color, and in such a state of preservation that it may be cut open and examined, when this would not be possible with any other organ. This statement is applicable even to newly-born female infants.

CHAPTER XIII.

MEDICO-LEGAL EXAMINATIONS.(n)

§ 986. The physician who is called upon to make an examination of a person found dead under suspicious circumstances, has devolved upon him a task

(n) The subject of medico-legal examinations in insanity has been already noticed, ante, § 90, &c. In addition to the cases already mentioned, we may here cite the following:—

On the trial of an indictment for selling unwholesome meat, it was held that physicians might be allowed to testify that the eating of unwholesome meat does not always cause apparent sickness, and to state their opinion, founded on what other witnesses had testified, as to the disease of which the cow died, and whether the disease would cause fever, and whether the flesh of animals sick of fever was unwholesome. Goodrich *v.* People, 3 Parker R. (N. Y.) 622.

Physicians who are not experts in analytical chemistry are admissible to form an analysis of the contents of the stomach in cases of poisoning. State *v.* Hinkle, 6 Iowa, 380.

In a homicide trial in New York (People *v.* Bodine, 1 Denio, 288), it appeared in evidence, that the dwelling-house occupied by the deceased had been discovered to be on fire; that after the fire was extinguished, her dead body was discovered amid the rubbish in one corner of the kitchen, where her bed had stood, and where she had been accustomed to sleep; that the fire had been in that part of the house, and that a hole had been burned through the floor in that corner of the room, and that the fire had extended up the side walls of the room, had consumed the bed and bedding, and partly destroyed the bedstead; that the heap of rubbish among which the body had been found consisted of bricks and mortar from the wall, of partially destroyed pumpkins and onions which had been kept under the bed, of the bedstead and of the cinders from the bed, bedding, and other articles which had been entirely consumed; that several physicians had made a post-mortem examination of the body, and had given it as their opinion that the body had been dead before it had been subjected to the action of fire, for the reason among others that portions of the body had been protected, and had not suffered at all from the action of the fire, which could not have happened unless the body had lain perfectly still during the continuance of the fire. Upon the cross-examination of one of these physicians, the counsel for the prisoner asked the following question: "Would not almost any protection and stillness of the body be accounted for, on the supposition that the bed-cords on the back of the bed were burned off and the body let down, and that then the bed had fallen upon it before life was entirely extinct?" which question was objected to by the counsel for the prosecution and excluded by the court, and exception was taken by the counsel for the prisoner and carried to the Supreme Court. That court held: "The question put to one of the physicians on his cross-examination by the prisoner's counsel, was in my opinion correctly overruled. This witness and other physicians had made a post-mortem examination of the person alleged to have been murdered, and they gave it as their opinion that the death had preceded the action of fire on the body. This opinion, as is stated in the bill of exceptions, was founded on the reason, among others, that portions of the body which had been protected by covering upon them had not suffered at all from the action of the fire."

If a surgical witness testify as an expert, he may, having examined a wound, give his testimony as to the nature of the instrument which inflicted it (State *v.* Knights, 43 Maine, 11), and as to whether such wound was adequate to the production of death. (Livingston's case, 14 Grattan, 592.)

Evidence of scientific persons in a capital trial, as to any distinction evinced by scientific investigation between the appearance of stains of human blood and those of animals, is properly admissible. State *v.* Knights, 43 Maine, 11.

Maps and diagrams may be used by scientific witnesses, to render intelligible their verbal testimony. State *v.* Knights, 43 Maine, 11.

On a trial for murder, a medical witness testified that he saw defendant on the evening of the day after the killing, conversed with him, and then thought him deranged; that he thought the insanity was *delirium tremens;* that he knew defendant's habit of

of no little gravity. He therefore should endeavor to come to it prepared to acquit himself of his duty in such a manner that he will afterwards not have to regret having imperfectly discharged it. Not only is familiarity with anatomical dissection required, but a far greater carefulness, and a more searching examination than in cases of death from disease, since in the latter, the object of the investigation is into the nature of the morbid cause of death, and the acquisition of greater familiarity with pathological facts. Moreover his attention must be given to many circumstances which, in these, it is not necessary to observe, viz : all those matters which may throw light upon the mode of death, such, for instance, as the position of the body in relation to surrounding objects, and the locality in which it is found. The duties of the examiner, and the facts necessary to observe, may be arranged under the following heads :—

I. Locality, § 987.
II. Identity, § 988.
III. Indications of violence or unnatural death, § 989.
IV. Manner of conducting the autopsy, § 990.
V. Natural aspect of the organs at different ages, § 992.
VI. Mode of drawing up reports, § 1002.

§ 987. I. *Locality.*—The chief points for notice under this head are those which, by indicating the situation in which the body is found, may afford a clue to the detection of the manner in which it came there. Thus in cases of infanticide an accurate description of the locality in which the child's body is discovered is of the utmost importance in the subsequent investigation of the mode of death. Or, a person may be murdered and the body afterwards transported to a considerable distance for concealment, or the deceased may have had sufficient strength after receiving his mortal wound to follow the steps of the assassin, and yet finally perish at a point more or less remote from the place where he was attacked, and where the indications of a struggle will be found. It is proper also in case of exhumations, but here has a closer bearing on the determination of the next point, viz :—

§ 988. II. *Identity.*—This subject we have treated in detail in another chapter. It is only necessary to state here that the knowledge of the identity of the deceased in cases of recent death, is as far as the medical evidence is concerned, secured by a careful notice of the clothing, the stature and apparent age, physical development, deformities, color of the hair, eyes, &c., scars, marks of tattooing and peculiarities indicating the habitual trade or occupation.

§ 989. III. *Indications of violence or unnatural death.*—All indications of a struggle in the vicinity of the body should be carefully observed, such as traces of blood, fragments of clothing or hair upon the ground, and anything that may have served as a weapon, or been the accidental cause of death. The hands of the deceased should be carefully examined ; if they hold a weapon it should be noted whether it is loosely or firmly grasped, and also if

drinking, and supposed drinking to be the cause of his insanity ; and that he had been present and heard all the evidence. The witness then stated, under objection, how long he thought defendant had been in this state of delirium, but was not allowed to state whether, in his opinion, he was in this state on the night of the alleged killing. It was held here was no error. People *v.* McCann, 3 Parker, C. R. (N. Y.) 272.

there are portions of hair or clothing contained in them. In many cases of poisoning from prussic acid, the vial from which the poison was taken will be found in the hands or pockets, or lying near the deceased; and in other cases when poisoning is suspected, the room in which the body is found should be carefully searched for poisonous substances, or for vessels which may have contained them. If wounds are discovered upon the body, their nature and extent must be ascertained, and if lacerated, incised or punctured, the weapon, if any is found, carefully compared with them. The examiner should not omit to ascertain whether there are any fractures or dislocations present, and whether any foreign bodies are to be found in any of the natural openings of the body. In the case of females, in addition to the above, the signs of recent or previous delivery (as elsewhere detailed) must be observed, and the vulva should be examined for traces of injury which might otherwise go unnoticed.

§ 990. IV. *Manner of conducting the autopsy.*—The physician should be assisted at the examination by one or more persons, the duty of one of whom should be to write down the observations as they are dictated to him. The exterior of the body should be examined if possible before it is moved from the position in which it is found, and in case circumstances permit, it is better that the examination should be made on the spot, than that the body should be transported elsewhere. The time elapsed since death should be approximately estimated by a consideration of the state of rigidity or flaccidity of the body, and the degree of putrefaction. The order in which the internal organs should be examined admits of some variety, although on the whole it is better, where time and circumstances allow, to commence with the head, and proceed therefrom to the other organs in regular succession.

To open the cranium, the best method is to begin by making an incision vertically from the root of one zygomatic process to that of the other; a few strokes of the scalpel will loosen the attachment of the scalp to the pericranium, and by a slight effort the two flaps may be inverted, the one over the face, the other over the occiput. After removing the temporal muscles from their attachments, the cranium may be opened speedily and safely by the saw, which should be used first on either side and then behind and in front. A chisel used carefully as a lever will then easily detach the calvarium. In young children a pair of strong scissors will suffice to cut the bone, with less risk of injuring the subjacent parts. A triangular block with rounded edges, placed under the neck, will much facilitate these operations. The integrity of the calvarium having been first noted, we then proceed to the examination of the contents of the cavity of the head. The dura mater may be divided around the edges of she skull, and then, being cut free from its connection with the *crista galli*, thrown back over the occiput. The other membranes, after being examined *in situ*, may be observed with reference to their connections when the brain is itself examined. This should be done partly in and partly out of the cranium. The upper half should be removed on each side, by a horizontal incision which shall leave the thalami optici untouched while it lays open the lateral ventricles. Placing the fingers of the left hand under the anterior lobes of the brain, the remainder of the encephalon should be removed by cutting successively through the nerves, the tentorium, and the

medulla oblongata as far as the knife can conveniently penetrate. The various parts may be then examined by successive horizontal sections made regularly in parallel planes. The state of the sinuses should also claim attention.

Previous to the examination of the *neck*, the block should be removed and the head thrown back, in order to render the neck tense. An incision is then made in the trachea, and prolonged carefully upwards, with the precaution to hold the knife in such a manner as not to injure the posterior wall of the trachea or larynx. This done, the tongue, if it seem necessary, may be taken out by an incision following the inner circumference of the lower maxilla, and by dividing the posterior pillars of the fauces. The examination of the neck should not, however, be commenced until the cavities next to be examined have been prepared for inspection. A longitudinal incision, commencing at the top of the sternum, may be made and extended to the pubes, and a transverse one passing across the abdomen and intersecting the first at the umbilicus. These incisions should not penetrate more deeply than through the skin.

The *abdominal cavity* may now be opened by carefully dissecting in the epigastric region until the peritoneal cavity is reached; through the hole thus made, two fingers of the left hand may be introduced, and holding the edges of the incision stretched apart, the incision may be prolonged by the knife in the other hand down to the pubis, without injury to the intestines. The transverse incision is then made through the muscles, and the four flaps thrown back. Grasping the upper flap on the side on which the operator stands, and drawing it tensely back over the margin of the costal cartilages, an incision should be carried along the edge of the thorax a sufficient distance in order to separate the abdominal muscles from their attachments. The dissection should now be continued upwards, in order to expose the sternum and cartilages as far up as the clavicle, and laterally exposing an inch or two of the ribs. The same operation is to be repeated upon the opposite side. In case of wounds passing through any portion of the parts thus noticed, they should be first circumscribed by circular incision, and thus isolated, so that their relations with the subjacent parts can be known.

It is not advisable to use much force in cutting through the cartilages of the ribs, on account of the risk of wounding the lungs or pericardium. The best plan is to begin with the fifth or sixth rib, and divide first those which lie below on each side; then taking hold of the fragment attached to the sternum, to divide the diaphragm between the two incisions of the costal cartilages and these up to the clavicle. In order to separate the sternum from the clavicle without wounding the large veins, take hold of the lower part of the sternum with one hand, and follow the articulation with the scalpel; *i. e.*, make the incision upwardly and outwardly, and then inwardly. The thoracic and abdominal cavities being now laid open, it is optional with which to begin.

It is perhaps better and more systematic to examine first the *thorax*. Having observed the relative position of the organs and such of their qualities as may be judged of by the eye alone, the pleural cavities should be explored. In order to remove the lungs without injury, the safest mode, espe-

cially where pleural adhesions exist, is to detach the costal pleura—an operation which can be easily, although it must be slowly done. In this way we preclude entirely the possibility of lacerating the pulmonary substance, and have subsequently no doubts to contend with as to whether certain lacerations of substance are the result of disease, injury, or our own mismanagement. The lung is less easily handled when separated from the body, than when it is left with its natural attachments. It is, therefore, always better in the beginning at least, after having drawn it out and laid it upon the thorax, to preserve its connections. Its roots may be afterwards divided, if it should be necessary to make a minute and protracted investigation. An incision which will lay open as great a surface as possible of the interior of the lung, is to be preferred, and this is one commencing at the apex and dividing it completely through to its base. Afterwards, incisions at right angles with the first one, will most probably reveal any structural disease or injury that may exist. The bronchia should be laid open with an appropriate pair of scissors, and an examination of the bronchial glands should not be omitted.

The *pericardium* should be opened in such a manner as to prevent the escape of the fluid contained within it until its quantity and character have been first ascertained. The examination of the heart for the purpose of detecting diseased structure need not here be dwelt upon. If gunshot or other wounds be found in its substance, their direction, extent, and character must be carefully examined, and search made here, or in the pericardial or pleural cavities, for any foreign bodies, such as balls, wadding, or fragments of weapons.

§ 991. In the examination of the *abdomen*, where poisoning is suspected, it is better that the stomach and duodenum should be each separated by double ligatures and removed, with their contents, from the body, for subsequent anatomical and chemical examination. In this case they should be put into perfectly clean vessels of porcelain, glass, or wood, and without the addition of any preservative liquid. The vessels should then be closely sealed and put away in a secure place. In other cases these organs may be opened by the enterotome, the stomach along the lesser curvature, and the intestines close to their attachment to the mesentery. The liver, in many cases of poisoning, particularly by arsenic or mercurial preparations, must be reserved for chemical investigation. The state of the bladder should be also observed. In the female the internal organs of generation require particular attention, with a view to the determination of questions of abortion, rape, &c. Finally, the examiner should not forget that although there may be strong reason, from circumstances, to suppose that the individual has met with a violent death, yet he may unexpectedly meet with some lesion, such as strangulation of the intestines, rupture of an aneurism, intestinal perforation, &c., which is in itself sufficient to explain the symptoms which preceded the death of the individual. Hence he cannot be too careful in examining systematically and minutely every part of the body, and making accurate notes of all that he observes.

§ 992. V. *Natural aspect of the internal organs.*—The following summary we have taken, with some alterations, from the valuable work of Professor Engel.(*o*)

(*o*) Entwurf einer pathol.-anatomischen Propadeutik, Wien. 1845.

The *dura mater* is, in children and adults, drawn tensely over the surface of the brain; in old persons, however, it is wrinkled, and sinks in between the convolutions. It increases in its consistence with age; is in children semi-transparent, and of a pale bluish-gray color, white and less transparent in the adult, and assumes a yellow tinge in advanced life. The under surface is smooth and polished. In old age the *dura mater* is frequently perforated by the glands of Pacchioni, and contains often, especially over the falx major, needle-like spiculæ of bone. These phenomena are of no pathological importance, except in early life, and even then, when uncombined with distinct lesions, are of little significance.

The *arachnoid and pia mater* are, in infants, thin, easily torn, colorless, and transparent, their larger veins generally filled with dark blood; the amount of blood is in mature years relatively less, and in old age the membranes have become thick and tough, lose much of their transparency, and assume a white or yellowish-white color.

The turbidness or milky appearance of these membranes does not in advanced life deserve much attention, except when over a large surface, and is then naturally connected with other symptoms of disease. It is always accompanied with increased consistence, and appears first on the edge of the fissures and the upper surface of the cerebellum. In youth, however, it is a pathological sign of much importance. The arachnoid is chiefly concerned, the plexus choroides being the only part of the pia mater which is affected. The vascularity of these membranes is within the normal limits subject to very great variation, as it depends upon the general amount of blood in the circulation. But it would be certainly a symptom of disease if, in a case of general anæmia or general plethora, the amount of blood in these membranes should be such as is found in health. It can only then be considered in relation to the amount of blood in the rest of the body, and it ought to be remembered that in early life it is proportionally larger than in its later periods. The quantity of blood should be determined, not by observation of the large vessels, but of the smaller ones; for the finer the vessels which are seen to be injected, the greater is the amount of blood, and the same remark may be made of their tortuosity.

The amount of watery secretion in the internal membranes is also subject to much variation, and depends upon the age of the individual and the condition of the blood. In infants it is comparatively more abundant than in adults, and in the latter less than in old persons. A large amount of watery effusion may have caused no symptom during life, if it depend upon general dropsy; if, however, it have occurred in the course of some acute general disease, it will have given rise to striking symptoms. When there is but a small quantity of water present, the arachnoid is not raised by it in its passage over the spaces between the convolutions; a large quantity will render it tense, and in cases of abundant effusion the space between the membranes is filled everywhere with it, and they become thickened and tumid. But the amount of effusion does not warrant, by itself, without the presence of other symptoms, any conclusion.

§ 993. The *brain* in newly-born children is of a gelatinous consistence, and throughout of a gray or reddish-gray color. Some of its inferior portions—

as, for example, the medulla oblongata—are white and firm. The lateral ventricles contain a few drops of clear, slightly yellowish fluid. It undergoes putrefaction very rapidly. The consistence of the *adult brain* is much greater; it can be broken up in the direction of its fibres, and there is a marked difference in color between the medullary and cortical portions. When a section is made through the substance of the brain, the blood contained in it appears upon the surface in red, watery points; more than this is generally indicative of disease. The normal amount of liquid in the ventricles varies from one-half of a drachm to four drachms, according to the greater or less consistence of the brain. It is clear and colorless, contains no albumen, and the lining membrane of the ventricles is generally not dissolved by it until the lapse of several days. In most cases where a softening of the cerebral substance around both ventricles is found, it may be regarded as a cadaveric change. In old persons the volume of the brain is somewhat diminished, hence the dura mater will often be found in folds. The substance of the brain is tough and elastic, and the medullary portion has a yellowish-white color. The ventricles are dilated, and contain sometimes as much as an ounce and a half of clear, colorless, slightly albuminous liquid. There is but little blood in the brain, and the arteries at its base contain fibrinous clots.

§ 994. In newly-born children the cartilages of the *larynx* are thin and elastic, its mucous membrane pale, smooth, and covered with a puriform epithelial coating, which is found in the most normal conditions, and particularly in the ventricles of Morgagni. The antero-posterior diameter of the larynx and trachea is less than the transverse. The bronchia are membranous and their mucous coat pale; they contain a whitish mucus, a circumstance which should not be supposed, as is too often done, to indicate catarrhal inflammation. After the age of puberty the air-passages acquire an increased volume and altered form, the antero-posterior diameter exceeds the transverse in length, the cartilages become firmer, the tracheal glands become prominent, and the posterior wall of the trachea often appears injected. No fluid is to be found except in the ventricles of Morgagni, which contain a thick whitish mucus consisting of the effete epithelium. The bronchial mucous membrane is wrinkled, of a pale gray color or reddish, the finer bronchia have a perfectly colorless and transparent wall, and contain only a small quantity of a colorless, watery fluid.

In old persons the cartilages of the larynx, trachea, and the larger bronchia are often found ossified; this is not the case in women, however, except sometimes the thyroid cartilage. The mucous membrane appears almost dry. The air-passages are more capacious than in adult life. Their contents are not always the result of the secretion from the mucous membrane itself, but from the deeper parts of the lungs.

§ 995. The *lungs in children* who have not breathed, are found in the posterior part of the thorax, the rest of this cavity being filled with a yellowish, glutinous, watery fluid. The edges of the lungs are rounded, and their length greater than their breadth. They are dense, and resemble in their granular structure and reddish-brown color, the liver. They are specifically heavier than water. To distinguish from hepatization those parts which not having

been dilated by the air, present this appearance, the inflation of the lungs will suffice, as it will not cause the first to disappear but will do so with the latter. Again, to discover whether the fluid contained in the chest is a pleuritic exudation which may have so compressed the lungs as to cause them to resemble their fœtal condition, we must be guided by the quantity of albumen and spontaneously coagulable constituents, and the form also of the lungs, which in pleuritic exudation are pressed flat against the vertebral column, and are not empty of blood, but rather, on the contrary, gorged with it.

The lungs of children *who have breathed*, occupy the greater part of the thorax; their edges are sharp and slightly curved; here and there tongue-like processes project caused by a partial increased force of inflation; the surface retains the impression of the finger, and by strong pressure the air is all expelled and the lung falls together like a ribbon. The tissue is elastic, and if not containing much water or blood, tough. The vesicular structure is not visible to the naked eye on the incised surface, but, through the pleura, numerous very small air bubbles may be seen, corresponding to the pulmonary vesicles. The color is grayish-white at the edges, in the front and outer parts a spotted rosy-red, in the under and posterior parts an intense purple. The same differences are observable upon incision. But little blood exudes upon incision, and that chiefly in the posterior portions. The pleura is thin, colorless, and transparent, and but a few drops of watery fluid are found in its cavity.

The *lungs of adults* sink upon opening the thorax an inch or two from its anterior wall; their borders are somewhat inflated, pale, dry, containing but little blood, and the pulmonary vesicles are visible through the pleura; the middle part of the upper lobes is of an ashen or reddish-gray color, variegated with patches of white and blue, in some spots bright red, the parenchyma is tough, and frothy serum exudes upon pressure. Bloody serum is not found, but sometimes streaks of blood from the larger vessels mix with the frothy serum which is pressed out. The lower part of the upper lobes, as well as of the under, with the exception of the borders of the latter, are more easily lacerated, denser, elastic, and have a purple hue on the surface, and when cut a brownish-red color; bloody serum mixed with bubbles of air exudes spontaneously upon the cut surface. Coagula are often found, but chiefly in the large vessels, but fibrinous coagula only when the agony has been long, and in inflammations of the lung. The parenchyma is more lacerable and denser in proportion to its contents of blood or serum, and the greater the quantity of air contained in it the longer it retains the impression of the finger; its color depends in its varieties upon the amount and character of the fluids it contains. The pigment spots are a normal appearance, they are rarely found earlier than the tenth or twelfth year, but are constantly found in adults. The amount of blood contained in the lungs is proportional to that in the heart. The pleura is at this period clear, colorless, shining, and transparent. The normal amount of fluid in this sac, varies within the normal condition between one and six ounces.

The lungs in *very old persons*, when the chest is opened, occupy only the posterior part of the thorax, so that their anterior portion is distant about a

hand's breadth from the front of the chest. They have a peculiar feel, retain the impression of the finger, are tough, and easily deprived of the air contained in them by pressure, falling together into a thin, membranous, wrinkled form. The color is a dark gray owing to the quantity of pigment, intermingled with bright red patches; the lower portions are of a dirty brownish-red color. The tissue is mostly dry, the posterior part alone moderately moist, with a pale, brownish fluid; in the pulmonary bloodvessels, a very small quantity of fluid blood is found. Any increase in the quantity of air, blood, or water, is at this age of more importance than in younger persons. The pleura is somewhat thicker and less transparent, and numerous deposits of pigment are found underneath it. The products of past diseases are frequently to be observed.

§ 996. The *heart in children* is firm and of a darker color than the other muscles. The relative thickness of the right side is greater than in adults, as also that of the auricles relatively to the ventricles. The endocardium is thin and transparent, the free edge of the ventricular valves soon becomes fringed in consequence of early commencing maceration. Both sides contain nearly the same amount of blood with a few coagula. The pericardium is transparent and more closely attached to the heart than in adults, containing from a few drops to a scruple of liquid of a yellow color, albuminous, dissolving soon the epithelium of the pericardium, and thus acquiring a turbid appearance, and rendering it possible to mistake it for an inflammatory exudation. The heart has a pyramidal shape in adults, but is more four-sided in old people. The endocardium in the former has a tendinous appearance; in the latter, particularly in the auricles, it is thick, wrinkled, opaque and yellowish in appearance, and in spots marked with the so-called atheroma. The free edge of the valves is in them, also, involuted, thickened, almost cartilaginous, and there is but a small amount of blood found in the cavities, while in adults, and chiefly in the right ventricle, coagula of blood and fibrin are found (almost) constantly. The pericardium becomes opaque in adult life, and contains from one to two ounces of a yellowish serum. The pulmonary artery and aorta are of nearly equal calibre; *in children* the former being somewhat the largest, but in *old persons* the latter.

In young persons there is relatively a large amount of blood contained in the *veins*, and chiefly in those of a medium size, the longitudinal sinus of the dura mater, contains in children a large amount of blood, but in adults generally only coagulated fibrin.

§ 997. The *peritoneum* is characterized by the same differences in the three periods of life as have been mentioned of the pleura. A few ounces of serous fluid in the peritoneum are not pathological; on the other hand, the dryness of this membrane is doubtless a morbid symptom, as are also deposits of granular pigment in old age.

§ 998. The *liver in young children* is relatively larger than in adults; the upper surface more convex, the under more concave; the parenchyma thick and tough, and indistinctly granular; its color is very dark, and it contains a large amount of dark viscid blood. In anæmia the color is of a light yellow, the edges translucent, and the parenchyma contains a reddish serum. In adults, the structure is inelastic, distinctly granular, and in anæmia retains

the impression of the finger. In old people the volume of the organ is diminished, the borders become sharper, the capsule becomes wrinkled, the tissue firmer, tougher, and dryer, of a brownish or greenish yellow, or soft and putty-like, containing a dirty reddish fluid, and an increased quantity of fat. In advanced age numerous vessels become obliterated, and the portion to which they belong atrophied.

The *bile* is, in *new-born children*, viscid, clear, or of a sap-green color; in adults thinner, and of a bright yellow, or viscid and reddish-brown, and in aged persons, scanty, but very thick and dark, and leaving a thick sediment.

§ 999. The spleen, in the early years of life, is dense, granular, and of the consistence of liver, dark red in color, and when incised yields no fluid blood. But in *adults* it presents within the normal limits some important varieties. Its size is variable, depending upon the general amount of blood. It is easily lacerable, and its substance is thick, and in color grayish-red. In the increase of its volume depending upon augmentation in the amount of blood, it is softer in its substance, but harder under the opposite condition. In *old persons*, this organ is small, its surface wrinkled, it retains the impression of the finger, is broken down by pressure, and is of a clear reddish-brown color. The *pancreas* and other analogous glands are of a grayish-yellow color, firm, not easily lacerable, and granular in structure. Upon pressure a small quantity of a glutinous fluid exudes.

§ 1000. The *digestive canal* presents important differences at the different periods of life. Its mucous membrane is, in early life, delicate, transparent, without redness or injection, except that of the mouth, which is of a pale grayish-red; of the stomach, which is red in points, and of the ileum which is injected around the aggregated follicles. The stomach is without rugæ, and those of the small intestine are few and imperfect. The isolated follicles of the small intestine are numerous and well developed; also in the duodenum and stomach, but fewer in number. The internal surface of the duodenum has a finely granular feel. The mucous membrane of the large intestine is smooth and white, its follicles prominent, opaque, and more numerous at its lower extremity. In the cavity of the mouth is found a scanty fluid secretion, and a little also in the œsophagus. The stomach contains a small quantity of a stringy, clear fluid, in the small intestine (after the meconium is passed) a bright yellow, flocculent muciform substance. In the large intestine, a greenish-yellow or brownish pasty fæcal matter. Besides this the intestine always contains gas.

In *adults* the mucous membrane of the *stomach* is sometimes rugose, and covered with a thick, tough, pale-gray mucus, but at other times is quite smooth, and contains only a small quantity of thin mucus. The color is generally of a pale gray, but if there be present any ingesta, it will be red in points, or if irritating substances, such as pepper, tartrate of antimony, &c., there will be vascular injection. The mucous membrane of the fundus is often softened in a degree corresponding to the quantity of fluids contained in the stomach; but this softening does not penetrate into the deeper strata of the sub-mucous cellular tissue. The lining membrane of the duodenum has a somewhat granular surface, owing to the projecting glands, it contains a thick

and turbid liquid, tinged with bile. This membrane, through the whole of the small intestine, has a velvety appearance under water, is very thin, and cannot be stripped off in pieces of any size. The solitary and agminated glands may be seen with the unassisted eye in the ileum. The mucous membrane of the large intestine is white and polished, and covered with a layer of thick transparent mucus, which is very adherent. The transverse colon usually contains much gas, the rest of the large intestine is contracted. When fæcal matter has been a long time in contact with the mucous membrane, it assumes a bluish-gray appearance or sometimes is red and injected. The glands of the rectum may be prominent and opaque without necessarily being morbid. In old people the deposit of pigmentary matter in many parts of the intestine must be regarded as a normal appearance.

§ 1001. The *kidneys* of newly-born children are comparatively thick, their surface nearly uniform, and adherent to the capsules; the color is of a dark grayish-brown, and the tubular only distinguished from the cortical substance by the direction of its fibres. In the *tubuli uriniferi* may be remarked sometimes a reddish sediment, and out of the papillæ may be expressed a turbid reddish urine. The mucous membrane of the pelvis of the kidney and the ureter is smooth and white. The bladder is generally contracted, its lining membrane of a rosy white, with here and there vascular injection. In *adults*, the kidney can be easily turned out of its capsule, the tissue is inelastic, the cortical substance is of a lighter color than the tubular. Vessels disposed in a stellated manner are seen upon the surface, and when cut, reddish points. The pelvis of the kidney is enveloped in a dark granular fat, the mucous membrane of this, the ureter and urethra is smooth and polished. The bladder is generally contracted. In old persons the kidneys are usually diminished in size, and surrounded with fat and a thick capsule, the surface is granular and uneven, the substance firm and tough, the color of the cortical substance is a pale reddish-brown or grayish-red. There are but few Malpighian bodies to be seen, but on the other hand minute vesicles filled with fluid. The tubular substance does not differ from the cortical in its color; hyperæmia, and anæmia of the kidneys commence in the former, diminution of consistence in the latter.

§ 1002. VI. *Reports.*—It has been already stated, that careful notes should be taken during the progress of the autopsy. These should be preserved, and as soon as possible afterwards, a report drawn up embracing all the medical facts resulting from the inspection. The utmost precision is requisite in these reports and the avoidance as far as possible of technical terms is desirable. The report of the chemical analysis should be appended to the general report; and at the conclusion, the opinion as to the cause of death may be given, together with the general inferences resulting from the facts observed at the examination. Where written reports are not required, it is nevertheless advisable that the physician should prepare one for his own use, since by this means he cannot fail to gain a more intelligent view of the whole case.

The reader will find in the following remarks, selected from "Suggestions for the Medico-Legal Examination of Dead Bodies, by Professors Traill,

Christison and Syme (with additions by A. Watson, M.D.,") more minute directions upon some points than we have thought necessary to give above:—

"It is desirable that the Medical Inspectors shall have an opportunity of viewing the body before it is undressed or moved from the spot where it was first found. If the body had been previously removed or meddled with, they ought to inform themselves accurately as to its original position. In many cases it is material that they personally visit the place where it was first seen; and they should inquire minutely into all the particulars connected with the removal of it.

"5. In cases where the body has been buried, and disinterment becomes necessary, it ought not to be removed from the coffin, except in presence of the inspectors.

"6. Where a considerable period has elapsed between death and disinterment, the inspection must in all cases be proceeded with, although the body be found in a state of decay, unless the inspectors can positively say that the progress of decay is such as to render the examination nugatory in relation to its special objects. The degree of decay which will justify such an opinion will differ with a variety of circumstances which cannot be properly specified here. It may be observed, however, that where the injuries of the bones are to be looked for, or the traces of certain poisons, it is scarcely possible to assign the limit at which an inspection must of necessity be fruitless. It is of moment to remember that the internal organs are often in a great measure entire, although the external parts are much decayed. The inspection, where the body is much decayed, will be rendered greatly less annoying to those present by frequently washing the parts successively exposed with a solution of chloride of lime, of the strength of one part in forty; but this must be carefully kept clear of any parts which may afterwards require to be examined for poison.

"7. No one should be allowed to be present at the examination out of mere curiosity. But especially every individual, not of the medical profession, ought to be excluded, who is likely to be a witness either in the precognition or trial; and consequently any one who attends to give information, if likely to be a witness, should remain in an adjoining room. The reason for this rule is, that the medical inspection often furnishes good tests of the value of otherwise doubtful evidence of a general nature; and it is therefore necessary that the general witnesses should not have an opportunity of knowing what is observed in the dissection of the body.

"8. The examination and dissection of the body should not be undertaken, if possible, except with sufficient daylight in prospect to allow the whole inspection to be made without artificial light.

"9. While the one inspector conducts the practical details of the examination, the other should take notes of its successive steps, indicating all the points inquired into, with the observations made and appearances presented, negative as well as positive, and stating simple facts only, without either generalizations or opinions. These notes should be looked over by both inspectors before the body is sewed up, that omissions in the notes or in the inspection itself may then be supplied; and the notes, properly signed, dated, and sealed, must be lodged with the law authorities, a copy being preserved, if thought advisable by the inspectors.

"10. The inspectors must deliver to the same authorities, and within two days, where no further examination is required, a distinct report containing their opinion on the case, with the reasons succinctly and clearly stated. They must understand that they cannot found their opinions on any facts represented to have been ascertained by themselves during the inspection, which are not specified in their notes.

"11. Great attention must be paid not to express any premature opinion of the nature of the case from appearances presented on a partial examination, because the real cause of death often turns out very different from what it seems in the first instance to have been. In cases of injuries, or apparent drowning, hanging, strangling, burning, and the like, it should always be remembered that the appearances of such

death may have been accidentally induced or purposely contrived after death, while the actual cause of death is different, and only to be detected by a careful and thorough inspection of the whole body.

"12. It is a good general rule that all injured or diseased parts should be removed and preserved, wherever this is practicable. Soft parts, except what are to become the subject of analysis in the search for poison, are best preserved in a concentrated or strong solution of common salt.

"13. When any portions of the body, or any substances found in or near it, are to be preserved for further examination, they ought never to be put out of the custody of the inspectors, or of a special law-officer. They must be locked up in the absence of the person who keeps them. When they are to be transmitted to a distance, they should be labelled, and the labels signed by the inspectors; and, after being properly secured and sealed, they should be delivered by the inspectors themselves, or the special law-officer, at the coach-office by which they are to be forwarded."

SECTION II.—*Necessary Implements.*

"14. Besides the ordinary instruments used in common dissections, the inspectors should be provided with a foot-rule, and an ounce-measure graduated to drachms, for measuring distances and the quantities of fluids; a few clean bladders for carrying away any parts of the body which it may be necessary to preserve for future examination; and, in cases of possible poisoning, three or four bottles, of 8, 12, and 16 ounces, with glass stoppers or clean corks, for preserving fluids to be analyzed. [It is also necessary to be provided with paper, pens, ink, and sealing-wax.]

"15. All distances, lengths, surfaces, and the like, whose extent may require to be described, ought to be actually measured; and the same rule ought to be followed in ascertaining the volume of fluids. Where large quantities of fluids are to be measured, any convenient vessel may be used whose capacity is previously ascertained by the ounce measure. Conjectural estimates and comparisons, however common in medico-legal inspections, are quite inadmissible.

"16. The importance of the external examination, and the particulars of it to be chiefly attended to, will vary in different cases with the probable cause of death. It comprehends, 1. An examination of the position of the body when found. 2. Of the vicinity of the body, with a view to discover the objects on which it rested [might have fallen upon, or been suspended from], marks of a struggle, signs of the presence of a second party about the time of death, or after it, weapons or other objects the property or not the property of the deceased, the remains of poisons, marks of vomiting; and, where marks of blood are of importance, and doubts may arise as to their really being blood, the articles presenting them must be preserved for examination. 3. Of the dress; its nature and condition, stains on it of mud, sand, or the like, of blood, of vomiting, of acids, or other corrosive substances, in the case of suspected poisoning; marks of injuries, such as rents and incisions: and where injuries have been inflicted upon the body, care should be taken to compare the relative position of those on the body and those on the clothes; and where stains apparently from poison are seen, the stained parts are to be preserved for analysis. 4. Ligatures, their material and kind, as throwing light on the trade of the person who applied them, the possibility or impossibility of the deceased having applied them himself, their sufficiency for accomplishing their apparent purpose, &c."

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SECTION V.—*Examination in cases of Wounds and Contusions.*

"33. The most approved mode of examining injuries is, if they be not situated over the great cavities, to expose the successive layers of muscles in the manner of an ordinary dissection, observing carefully what injuries have been sustained by the parts successively exposed before they are divided. No advantage will be derived

from previous injection of the bloodvessels, even supposing this were always attainable. Careful dissection, with a knowledge of the structure and relation of the parts, is a safer guide.

"34. The seat of wounds must be described by actual measurement from known points, their figure and nature also carefully noted and their direction ascertained with exactness.

"35. Before altering by incisions the external appearance of injuries, care must be taken to consider what weapon might have produced them; and, if a particular weapon be suspected, it should be compared with them.

"36. Apparent contusions must be examined by making incisions through them; and the inspectors will note whether there be swelling or puckering of the skin, whether the substance of the true skin be black through a part or the whole of its thickness, whether there be an extravasation below the skin, and whether the blood be fluid or coagulated, generally or partially; whether the soft parts below be lacerated or subjacent bones injured, and whether there be blood in contact with the lacerated surfaces. By these means the question may be settled whether the contusions were inflicted before or after death.

"37. In the case of wounds, too, the signs of vital action must be attended to, especially the adhesion of blood to their surfaces, or the injection of blood into the cellular tissue around, or the presence of the signs or sequelæ of inflammation.

"38. Where large arteries or veins are found divided, care must be taken to corroborate the presumption thus arising by ascertaining, in the subsequent dissection, whether the great vessels and membranous viscera be unusually free of blood.

"39. In the course of the dissection of the wounds, a careful search must be made for foreign bodies in them. Where firearms have occasioned them, the examination should not be ended before discovering the bullet, wadding, or other article lodged; and whatever is found must be preserved. Where the article discharged from firearms, or indeed any other weapon, has passed through and through a part of the body, the entrance wound and exit wound must be carefully distinguished by their respective characters.

"40. When wounds are situated over one of the great cavities, they ought not to be particularly examined until the cavity is laid open; and, in laying open the cavity, the external incisions should be kept clear of the wounds.

"41. The organs in the abdomen furnish the best source of information as to the sign of bloodlessness in presumed death by hemorrhage. [The state of the brain is also a good criterion."]

SECTION VI.—*Examination in cases of Poisoning.*

"42. In examining a body in a case of suspected poisoning, the inspectors should begin with the alimentary canal, first tying a ligature round the cardiac end of the stomach, and two round its pyloric end; then removing the stomach and whole intestines: next, dissecting out the parts in the mouth, throat, neck, and chest, in one mass; and, finally, dissecting the gullet, with the parts about the throat, from the other organs of the chest. The several portions of the alimentary canal may then be examined in succession.

"43. In all their operations they ought to make sure that the instruments, vessels, and bladders used are quite clean.

"44. In cases of supposed poisoning, a minute inquiry must, in the first instance, be made into the symptoms during life—their nature, their precise date, especially in relation to meals or the taking of any suspicious articles, their progressive development, and the treatment pursued. It is impossible to be too cautious in collecting such information; and, in particular, great care must be taken to fix the precise date of the first invasion of the symptoms and of the previous meals. The same care is required in tracing the early history of the case, where the inspector happens to visit

the individual before death; and if suspicion should not arise till his attendance has been going on for some time, he ought, subsequently to such suspicions, to review and correct the information gathered at first, especially as to dates. All facts thus obtained should be immediately committed to writing, and ought to form part of the narrative of the inspection to be delivered to the law authorities.—(See § 9, 10.)

"45. Before inspecting the bodies, the inspectors, after ascertaining the history of the case, should proceed, if they see cause, to search, in company with the proper law officer, for suspicious articles in the house of the deceased. These are suspected articles of food, drink, or medicine; the vessels in which they had been prepared or afterwards contained, the family stores, or the articles with which suspected food, &c., appears to have been made. All such articles must be secured, according to rules in § 13, for preserving their identity. In this examination, the body, clothes, bedclothes, floor, and hearth should not be neglected, as they may present traces of vomited matter, acids spirted out, or spilled, and the like.

"46. When a medical man is called to a case, during life, where poison is suspected, he ought as soon as possible to follow the instructions laid down for securing articles in which poison may have been administered.

"47. In the same circumstances, it is his duty to observe the conduct of any suspected individuals, were it for no other reason than to prevent the remains of poisoned articles from being put out of the way, and to protect his patient from further attempts.

"48. The whole organs of the abdomen must be surveyed, but particularly the stomach and whole track of the intestines, the liver, spleen, kidneys, and the bladder; and, in the female, the uterus and its appendages. The intestines should in general be slit up throughout their whole length; and it should be remembered that the most frequent seat of disease of the mucous membrane is in the neighborhood of the ileo-cœcal valve.

"49. In cases where the possibility of poisoning must be kept in view, the contents of the stomach should be preserved; also, sometimes, those of the great and small intestines, and occasionally even those of the gullet.

"50. It is generally necessary to ascertain whether any spirituous fluid [or opium] be contained in the stomach. This may sometimes be done by the order of its contents, but oftener not; so that, where the point is one of evident consequence, it may be necessary to search for alcohol by distilling the contents [if any], and examining the distilled liquid as directed in works on poisons.

"51. The intestines may be examined at once by laying open their whole course. The parts, where appearances are most frequently found in poisoning, are, the duodenum, upper part of the jejunum, lower part of the ileum, and rectum. Care should be taken to preserve their contents in a bottle, and the intestines themselves in a bladder, if they present any unusual appearance which will keep. The stomach should be taken out entire, and its contents emptied into a bottle. The smell proceeding from its contents should be observed when it is first laid open, as this often alters speedily. If the stomach present any remarkable appearance, its examination may be reserved, if convenient, till a future opportunity; but in every circumstance it must be preserved and carried away. The throat and gullet may be examined at once, and preserved with their contents, which, if abundant, may be kept apart in a bottle.

"52. No person ought to undertake an analysis in a case of suspected poisoning, unless he be either familiar with chemical researches, or have previously analyzed with success a mixture of organic substances, containing a small proportion of the poison suspected.

"53. The inspectors will learn from the law authorities, whether, in the event of the discovery of poisoning by them, it is probable that the opinion of some other person practised in toxicological researches may be required; and, in that case, they will take to use only one-half of the several articles preserved for analysis. They will remember

that the stomach itself is one of the articles for analysis, because poison may be found there, though not present in the contents. The identity of the subjects of analysis must be secured by the rules of § 13."

SECTION VII.—*Examination in cases of Suffocation.*

"54. In cases of suspected drowning, the inspectors will observe particularly whether grass, mud, or other objects are clutched by the hands, or contained under the nails; whether the tongue be protruded or not between the teeth; whether any fluid, froth, or foreign substances be contained in the mouth or nostrils, in the trachea or bronchial ramifications; whether the stomach contain much water; whether the blood in the great vessels be fluid. When water, with particles of vegetable matter or mud, is found within the body, these must be compared with what may exist in the water in which the body was discovered. Marks of injuries must be compared diligently with the objects both in the water and the banks near it.

"55. In cases of suspected death by hanging, strangling, or smothering, it is important to attend particularly to the state of the face as to lividity, compared with the rest of the body; the state of the conjunctiva of the eyes, as to vascularity; of the tongue, as to position; of the throat, chin, and lips, as to marks of nail scratches, ruffling of the scarf-skin, or small contusions; the state of the blood, as to fluidity; the state of the membranous organs in the abdomen, and of the lungs, as to congestion. The mark of a cord or other ligature round the neck, must be attentively examined; and here it requires to be mentioned, that the mark is often not distinct until seven or eight hours after death, and that it is seldom a dark livid mark, as is very commonly supposed, but a pale, greenish-brown streak, if made with a rope, representing in general no ecchymosis, but the thinnest possible line of bright redness at either edge, where it is conterminous with the sound skin. Nevertheless, effusions of blood and lacerations should be also looked for under and around the mark, in the skin, cellular tissue, muscles, cartilages, and lining membrane of the larynx and trachea. Accessory injuries in other parts of the body, more especially on the chest, back, and arms, must be looked for; as likewise the appearance of coagulated blood having flowed from the nostrils or ears, and the discharge of feces, urine, or semen."

SECTION VIII.—*Examination in cases of Burning.*

"56. In supposed death from burning, the skin at the edge of the burns should be carefully examined for redness, or the appearance of vesicles containing fluid."

SECTION IX.—*Examination in cases of Infanticide.*

"57. In cases of suspected infanticide, certain peculiarities must be borne in mind. The cavity of the head should be laid open with a pair of scissors. In opening the abdomen the incision may be carried through the whole parietes at once; and the navel should be avoided, so that the state of the vessels of the navel-string may be examined correctly.

"58. The inquiry in cases of infanticide should be conducted with a distinct reference to the five following questions: 1. The probable degree of maturity of the child. 2. How long it has been dead? 3. Whether it died before, during, or after delivery, and how long after? 4. Whether death arose from natural causes, neglect, or violence? 5. Whether the suspected female is the mother of the child?

"59. The points to be attended to for ascertaining the probable degree of maturity of the child, are the state of the skin, its secretions, and its appendages, the hair and nails; the presence or absence of the pupillary membrane; the length and weight of the whole body; the relative length of the body and its members; and the point on the abdomen corresponding with the middle of the length of the body; the relative size of the lungs and heart; the relative size of the liver, indicated by the position of

its margin; the situation of the meconium in the intestines; the position of the testicles in the case of males.

"60. The points of chief importance, in reference to the period which has elapsed after death, are those specified in the last clause of section 17.

"61. The circumstances which indicate whether the child died before or during parturition, and how long after it, are the signs of putrefaction within the womb; the marks of the crown, feet, buttocks, shoulders, &c., indicating presumptively the kind of labor; the state of the lungs, heart and great vessels, showing whether or not it had breathed; the nature of the contents of the stomach, and of the intestines; the presence or absence of urine in the bladder; the presence of foreign matters in the windpipe; the state of the umbilical cord, or of the navel itself, if the cord be detached.

"62. In order to examine properly the state of the lungs, heart, and great vessels, with a view to determine whether or not the child had breathed, the inspection should be made in the following order: Attend first to the situation of the lungs, how far they rise along the sides of the heart—to their color and texture—and whether they crepitate or not. Examine next, but without displacing them, the condition of the ductus venosus and umbilical vessels. Then secure a ligature round the great vessels at the root of the neck, keeping clear of the ductus arteriosus, and another round the vena cava above the diaphragm. Cut both sets of vessels beyond the ligatures, and remove the heart and lungs in one mass; which must be weighed and put in water to ascertain whether the lungs, with the heart attached, sink or swim. In the next place, put a ligature round the pulmonary vessels, close to the lungs, and cut away the heart by an incision between it and the ligature. Compare now the relation of the diameter of the ductus arteriosus to that of the pulmonary trunk and of the pulmonary branches, and look for any indication of partial contraction in the duct towards its aortal end. Lastly, ascertain the weight of the lungs; their relative weight to that of the whole body; whether they crepitate when handled; whether they sink or swim in water; whether blood issues freely or sparingly when they are cut into; whether any fragments swim in the instances where the entire lungs sink; and, in every instance of buoyancy, whether fragments of them continue to swim when well squeezed in a cloth.

"63. The points to be considered in relation to the cause of death, are the signs of natural death before parturition, and of natural, accidental, and violent death during parturition as well as after delivery. The most frequent forms of violent death during labor, are, puncture of the fontanelles, orbits, or nucha; twisting of the neck after delivery of the head; compression of the head; detruncation of the head; strangling and smothering. The chief varieties of violent death after delivery are: smothering by overlaying or otherwise; hemorrhage from the umbilical cord; simple exposure; starvation; injuries of the head from falls, blows, or compression; wounds of the throat; puncture of the fontanelles, nucha, orbits, cribriform plate, spine, ears, or heart; laceration of the great gut, or of the internal parts of the throat, by instruments thrust in the anus or mouth; drowning; poisoning; burning; strangling with the hand of a ligature; choking by foreign bodies thrust into the back of the throat, or by dividing the frænum linguæ and doubling back the tongue.

"64. The circumstances noticed in §§ 59, 61, 62, compared with the signs of recent delivery in the female, will lead to the decision of the question, whether the suspected female be the mother of the child. These are the signs of the degree of maturity of the child; the signs on the body of the kind of labor; the signs which indicate the date of its death, and the interval which elapsed both between its birth and death, and between its death and the inspection."—*Watson on Homicide.*

BOOK VI.

LEGAL RELATIONS OF HOMICIDE, FŒTICIDE, AND INFANTICIDE.

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(3.) Where there is a wanton exposure of an infant, without the intent to procure death, but with the expectation of shifting the support of the infant upon some third person, and death ensues after birth, it is manslaughter, § 1205.
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§ 1003. The learning of the law of homicide has been elsewhere abundantly set forth,(a) and neither the object nor the compass of the present treatise requires its exhibition in anything more than outline. Homicide may, in this light, be considered as follows:—

I. Murder:
II. Manslaughter:
III. Excusable Homicide:
IV. Justifiable Homicide:
V. Murder in the Second Degree.

§ 1004. The distinction between excusable and justifiable homicide, as will presently be seen, is one which, however well marked in theory, is, in this country, obliterated in practice, since here the uniform course is to acquit wherever either an adequate excuse or a justification is proved.

I. Murder.

§ 1005. Murder is where a person of sound memory and discretion unlawfully kills any reasonable creature in being, in the peace of the commonwealth, with malice, prepense or aforethought, either express or implied. The distinguishing feature in this definition, as will at once be seen, is that of *malice*. By this term, at common law, is meant to include not only special malevolence to the individual slain, but a generally wicked, depraved, and malignant spirit—a heart regardless of social duty, and deliberately bent on mischief. And, in general, says Sir Wm. Russell, any formed design of doing mischief may be called malice; and, therefore, not such killing only as proceeds from premeditated hatred or revenge against the person killed, but also, in many other cases, such killing as is accompanied with circumstances that show the heart to be perversely wicked, is adjudged to be of *malice prepense*, and consequently murder. Malice is *express* or *implied*. When one person kills another with a sedate, deliberate mind, and formed design, it is said to be *express*. Of this the usual evidence is circumstantial; such, for instance, as lying in wait, antecedent menaces, former grudges and concerted schemes to

(a) See Wharton on Homicide, and Wharton's Criminal Law, § 884 et seq.

do the party some bodily harm, and, in general, any deliberate, cruel act committed by one person against another, however sudden; as where a man kills another suddenly, without any, or without a considerable provocation, and where a man wilfully poisons another. And where one is killed in consequence of such a wilful act as shows the person by whom it is committed to be an enemy to all mankind, the law will infer a general malice from such a depraved inclination to mischief. Where the act is committed deliberately, and is likely to be attended with dangerous consequences, the malice requisite to murder will be presumed; for the law infers that the natural or probable effect of an act deliberately done is intended by its actor. The killing proved, even though nothing else be shown, it has been repeatedly held in Massachusetts that the offence is murder; the burden of extenuation being then thrown on the defendant—and such is undoubtedly the general rule. In Ohio, the presumption of killing alone is that of murder in the second degree, and so also is held to be the law in Virginia. In the latter State, however, it is said that where the mortal wound is given with a deadly weapon in the slayer's previous possession, there being no evidence of provocation, the case is *prima facie* murder in the first degree: and so also is the rule in Pennsylvania. Malice once ascertained is presumed to continue down to the fatal act. Thus, where it appeared that the deceased had threatened the prisoner about three weeks before that he would kill him, that they met in the street on a starlight night, when they could see each other, that the deceased pressed for a fight, but the prisoner retreated a short distance, that when the deceased overtook him the prisoner stabbed him with some sharp instrument which caused his death, and that at the time of this meeting the deceased had no deadly weapon; it was held that in such a case, to mitigate the offence from murder, it must appear, from the previous threats and the circumstances attending the rencontre, that the killing was in self-defence—the presumption being that the killing was malicious. Malice may be exerted against a party in his absence: as where A. lays poison for B. in his victuals, which B. afterwards takes, and dies. So where A. procures an idiot or lunatic to kill B., which he does. In both instances, A. is guilty of the murder as principal.

There may be a class of cases, to use the words of Chief Justice Shaw, "when, if reasonable doubt arises as to the matter of malice, the court will properly instruct the jury to find manslaughter; as where a mother exposed her infant child in a garden, and it was devoured by a kite, or where the death of a pauper was produced by constant shifting, on the part of the overseers of the poor, from parish to parish."(*b*)

§ 1006. Malice is either *general*, *individual*, or *collateral*, and will be considered successively in each relation.

1st. *General.*—When an action, unlawful in itself, is done with deliberation, and with intention of mischief or great bodily harm to particulars, or of mischief indiscriminately, fall where it may, and death ensue against or beside the original intention of the party, it will be murder. But if such an original intention doth not appear, which is a matter of fact, and to be collected from

(*b*) See Wharton on Hom. 35, and cases cited.

circumstances given in evidence, and the act was done heedlessly and incautiously, it will be manslaughter, not accidental death; because the act upon which death ensued was unlawful. Thus, if a person breaking in an unruly horse, wilfully ride him among a crowd of persons, the probable danger being great and apparent, and death ensue from the viciousness of the animal, it is murder. For how can it be supposed that a person wilfully doing an act so manifestly attended with danger, especially if he showed any consciousness of such danger himself, should intend any other than mischief to those who might be encountered by him. So, if a man mischievously throw from a roof in a crowded street, where passengers are constantly passing and repassing, a heavy piece of timber, calculated to produce death on such as it might fall, and death ensue, the offence is murder, at common law. And upon the same principles, if a man, knowing that people are passing along the street, throws a stone likely to do injury, or shoot over a house or wall with intent to do hurt to people, and one is thereby slain, it is murder on account of previous malice, though not directed against any particular individual: it is no excuse that the party was bent upon mischief generally. The line of this species of homicide is very important to preserve intact; for, as has been lately pointedly observed, "particular malice has the limited bounds of the person who is the object of it, and who may be on his guard against it: but general malice has a wider scope, and falls on the unsuspecting. Is a man who fires a pistol at an individual against whom he has ill-will, less criminal than one who fires a pistol at a crowd of an hundred people, against whom he has ill-will as a body, or as a part of the community? The absence of the personal animosity really aggravates the crime. In cases of particular malice, the sophistry of the passions often gives the act the character of a wild retribution, and the assassin persuades himself that he is getting rid of a monster who is a curse to society. This reasoning is perverse and dangerous; but is the state of mind less detestable in which no wrongs, real, exaggerated, or imaginary, inflame the passions against the individual, but in which the knife is driven home to his heart simply because he wears the form of a brother man? Which would argue the higher degree of depravity, the resolution—"I will kill A. and B., who have insulted or injured me," or "I will kill the first man I meet, be he who he may?"

§ 1007. 2d. *Individual*, which may be considered (1) in reference to the party killed, and (2) to a third party, when the blow falls on the deceased by mistake.

(1.) *In reference to the party killed.*

So far as concerns the individual killed, malice is either express or implied. Express malice is defined to be, where one person kills another with a sedate, deliberate mind, and formed design. Such formed design may be evinced by external circumstances, discovering the inward intention: as lying in wait, antecedent menaces, former grudges and concerted schemes to do the party some bodily harm. And malice is implied by law from any deliberate cruel act committed by one person against another, however sudden: thus, where a man kills another suddenly without any or without a considerable provocation, the law implies malice: for no person, unless of abandoned heart, would be

guilty of such an act upon a slight or no apparent cause. And, as will be seen presently, where one is killed in consequence of such a wilful act, as shows the person by whom it is committed to be an enemy to all mankind, the law will infer a general malice from such a depraved inclination to mischief. It may be indeed treated as a general rule, that all homicide is presumed to be malicious where an instrument, likely to cause death, is used.(*c*) It should not be forgotten in this connection, that the legal meaning of the term *malitia*, or malice, is different from its popular meaning, which makes it synonymous with spite. Thus, Lord Holt says: "Some have been led into mistakes by not well considering what the passion of malice is; they have construed it to be a rancor of mind, lodged in the person killing for some considerable time before the commission of the fact: which is a mistake, arising from the not well distinguishing between *hatred* and *malice*. *Envy*, *hatred*, and *malice*, are three distinct passions of mind.(*d*) Amongst the Romans, and in the civil law, *malitia* appears to have imported a mixture of fraud, and of that which is opposite to simplicity and honesty. Cicero speaks of it as,(*e*) "*versuta et fallax nocendi ratio:*" and in another work(*f*) he says: "*Mihi quidem etiam veræ hæreditates non honestæ videntur si sint malitiosis* (*i. e.*, according to Pearce a *malo animo profectis*), *blanditiis officiorum; non veritate sed simulatione quæsitæ.*" And in the Pandects,(*g*) in speaking of a banker or cashier giving his accounts, it is said: "*Ubi exigitur argentarius rationes edere tunc punitur cum dolo malo non exhibit. Dolo malo autem non edit, et qui malitiose edidit et qui in totum non edit.*" At common law, malice is a term of law importing directly wickedness, and excluding a just cause or excuse. Thus, Lord Coke, in his comment on the words, *per malitiam*, says: "If one be appealed of murder, and is found by verdict that he killed the party *se defendendo*, this shall not be said to be *per malitiam*, because he had a *just cause.*"(*h*) And where the statute speaks of a prisoner on his arraignment, standing *mute of malice*, the word clearly cannot be understood in its common acceptation of anger or desire, of revenge against another. Thus, where the 25 Hen. VIII. c. 3, says, that persons arraigned of petit treason, &c., standing "mute of malice or froward mind," or challenging, &c., shall be excluded from clergy, the word *malice*, explained by the accompanying words, seems to signify a wickedness or frowardness of mind, in refusing to submit to the course of justice: in opposition to cases where some just cause may be assigned for the silence, as that it proceeds from madness, or some other disability or distemper. And in the Statute 21 Edw. I., *De malefactoribus in parcis*, trespassers are mentioned, who shall not yield themselves to the foresters, &c., but "*immo malitiam suam prosequendo et continuando*," shall fly or stand upon their defence. And where the question of malice has arisen in cases of homicide, the matter for consideration has been, whether the act was done with or without just cause or excuse: so that it has been suggested, that what is usually called malice implied by law, would, perhaps, be expressed more intelligibly and familiarly to the under-

(*c*) Wh. C. L. §§ 930–950. (*d*) Kel. 127. (*e*) De Nat. Deor. Lib. 3, s. 30.
(*f*) De Offic. Lib. 3, s. 18. (*g*) Dig. Lib. 2, Tit. 13, Lex. 8.
(*h*) 2 Inst. 384.

standing, if it were called *malice in a legal sense.* Malice, in its legal sense, denotes a wrongful act, done intentionally, or without just cause or excuse.

§ 1008. Malice in this intent, may be considered under the following heads:—

(*a*) Intent to kill.

(*b*) Intent to do bodily harm.(*i*)

(a.) *Intent to Kill.*

§ 1009. This head admits of no question in its primary sense. Of course, where there is a deliberate intent to kill, unless it be in the discharge of a duty imposed by public authorities, the offence must be murder at common law.(*j*) And it should be observed that an intermediate provocation, immediately after the happening of which the offence occurred, forms no defence.(*k*) The reason of this is obvious, for if all that is necessary for a man to do to relieve himself from the guilt of murder is such provocation, there would surely not be a case of homicide without it.

In a leading case on this point, the prisoner, with the deceased and another brother, and some neighbors, were drinking in a friendly manner at a public house, till, growing warm in liquor, but not intoxicated, the prisoner and deceased began in idle sport to pull and push each other about the room. They then wrestled—one fell; and soon afterwards they played at cudgel by agreement. All this time no token of anger appeared on either side, till the prisoner, in the cudgel play, gave the deceased a smart blow on the temple. The deceased thereupon grew angry, and, throwing away his cudgel, closed in with the prisoner, and they fought a short space in good earnest; but, the company interposing, they were soon parted. The prisoner then quitted the room in anger, and when he got into the street was heard to say, "Damnation seize me if I do not fetch something and stick him;" and being reproved for using such expressions, he answered, "I'll be damned to all eternity if I do not fetch something and run him through the body." The deceased and the rest of the company continued in the room where the affray happened; and in about half an hour the prisoner returned, having put off a thin, slight coat he had on when he quitted the room, and put on one of coarse, thick cloth. The door of the room being open into the street, the prisoner stood leaning against the door-post, his left hand in his bosom, and a cudgel in his right, looking in upon the company, but not speaking a word. The deceased seeing him in that posture, invited him in to the company; but the prisoner answered, "I will not come in." "Why will you not?" said the deceased. The prisoner replied, "Perhaps you will fall on me and beat me." The deceased assured him he would not; and added, "Besides, you think yourself as good a man as me at cudgel; perhaps you will play at cudgels with me." "I am not afraid to do so, if you will keep off your fists." Upon these words the deceased got up and went towards the prisoner, who dropped the cudgel as the deceased was coming up to him. The deceased took the cudgel, and with it gave the

(*i*) See Wharton on Hom. 39.

(*j*) Wh. C. L. § 944.

(*k*) Ibid.; Russell on Crimes, 515.

prisoner two blows on the shoulder. The prisoner immediately put his right hand in his bosom, and drew out the blade of a tuck sword, crying, "Damn you, stand off, or I'll stab you;" and immediately, without giving the deceased time to step back, made a pass at him with the sword, but missed him. The deceased thereupon gave back a little, and the prisoner, shortening the sword in his hand, leaped forward towards the deceased, and stabbed him to the heart, and he instantly died. The judges unanimously agreed that there were in this case so many circumstances of deliberate malice and deep revenge on the defendant's part, that his offence could not be less than wilful murder. He owned that he would fetch something and stick *him*—to run *him* through the body. Whom did he mean by him? Every circumstance in the case showed that he meant his brother. He returned to the company, provided, to appearance, with an ordinary cudgel, as if he intended to try skill and manhood a second time with that weapon; but the deadly weapon was all the while carefully concealed under his coat, which, most probably, he had changed for the purpose of concealing the weapon. He stood at the door, refusing to come nearer, but artfully drew on the discourse of the past quarrel; and as soon as he saw his brother disposed to engage a second time at cudgels, he dropped his cudgel, and betook him to the deadly weapon, which till that moment he had concealed. He did, indeed, bid his brother to stand off, but he gave him no opportunity of doing so before the first pass was made. His brother retreated before the second; but he advanced as fast, and took the revenge he had vowed. The circumstance of the blows before the sword was produced, which probably occasioned the death, did not alter the case, nor did the preceding quarrel, because, all circumstances considered, he appeared to have returned with a deliberate resolution to take a deadly revenge for what had passed.(*l*)

Malice can never or rarely be directly proved, and the evidence of it therefore being circumstantial, any facts which go to afford an inference of its existence are admissible. But it would seem that the malice proved must be directed to the particular act for which the prisoner is tried, as otherwise the issue might become much encumbered. Thus it was held in Tennessee that, on a trial of an indictment for murder, evidence that the prisoner, a short time before the murder, had set fire to the house of the deceased in the night-time, was inadmissible for the purpose of proving that the prisoner had committed the murder; where, however, there is established a settled purpose of revenge on the part of the prisoner, such evidence would seem to be admissible if it appeared to be one of the manifestations of such spirit. Evidence that the prisoner had beaten his wife, and forced her to abandon the house and seek refuge under the protection of the deceased, has been held proper proof of malice prepense on the part of the prisoner. Malice of this kind, it is well stated by Mr. Greenleaf, may be shown from the circumstances attending the act—such as the deliberate selection and use of a lethal weapon, knowing it to be such; a preconcerted hostile meeting, whether in a regular duel with seconds, or in a street fight mutually agreed upon, or notified or threatened by

(*l*) Wharton on Homicide, p. 40.

the prisoner; privily lying in wait; a previous quarrel or grudge; the preparation of poison, or other means of doing great bodily harm or the like.(*m*)

(b.) *Intent to do Bodily Harm.*

§ 1010. At common law the intent to do bodily harm, followed up by homicide, constitutes murder; though such an offence falls in this country, in those States where the distinction exists, under the head of murder in the second degree. Homicides of this kind are numerous, and it is easy to suppose of homicide in a duel that may be so ranked, *e. g.* where the intention is to *maim*, and not to *kill*. The distinction in a case of this kind is undoubtedly very delicate; and where a statutory line must be drawn, it would perhaps be wiser to say that when the damage intended was such as would probably result in death, it is murder in the first degree, even though death may have been but incidental to the offender's purpose. Although A. intends only to beat B. in anger, from preconceived malice, and happens to kill him, it will be no excuse that he did not intend all the mischief that followed; for what he did was *malum in se*, and he must be answerable for its consequences. He beat B. with an intention of doing him some bodily harm, and is therefore answerable for all the harm he did. So if a large stone be thrown at one with a deliberate intent to hurt, though not to kill him, and by accident it kill him, or any other, it is murder. But the nature of the instrument, and the manner of using it as calculated to produce great bodily harm or not, will vary the offence in all such cases. In a more recent case it appeared that the deceased, being in liquor, had gone at night into a glass-house, and laid himself down upon a chest, and that while he was there asleep the prisoners covered and surrounded him with straw, and threw a shovel of hot cinders upon his belly, the consequence of which was that the straw ignited, and he was burnt to death. There was no evidence of express malice, but the conduct of the prisoners indicated an entire recklessness of consequences, hardly consistent with anything short of design. Patterson, J., adverted to the fact of there being no evidence of express malice, but told the jury that if they believed the prisoners really intended to do any serious injury to the deceased, although not to kill him, it was murder; but if they believed their intention to have been only to frighten him in sport, it was manslaughter.(*n*)

§ 1011. (2.) *In reference to a third party when the blow falls on the deceased by mistake.*—Where an injury, intended for one person, mortally affects another, as where a blow aimed at one person alights upon another, and kills him, the inquiry will be whether, if the blow had killed the person against whom it was aimed, the offence would have been murder or manslaughter. For, if a blow intended against A. and lighting upon B., arose from a sudden transport of passion, which, in case A. had died by it would have reduced the offence to manslaughter, the fact will admit of the same alleviation if it shall have caused the death of B.(*o*) And, on the same principle, A. having malice against B., strikes at and misses him, but kills C.; this is murder in A.: and

(*m*) Wharton on Homicide, p. 41. (*n*) See Wharton on Homicide, p. 42.
(*o*) Fost. 262.

if it had been without malice under such circumstances that, if B. had died, it would have been manslaughter, the killing of C. also would have been but manslaughter.(*p*) Again, A. having malice against B., assaults him and kills C., the servant of B., who had come in aid of his master; this is murder in A.; for C. was justified in attacking A. in defence of his master who was thus assaulted. In another case, where A. gave a poisoned apple to B., intending to poison her, and B., ignorant of it, gave it to a child, who took it and died, this was held murder in A. but no offence in B.; and this, though A., who was present at the time, endeavored to dissuade B. from giving it to the child.(*q*) So where Plummer and seven others opposed the king's officers in the act of seizing wool. One of those persons shot off a fusee and killed one of his own party. The court held, in giving judgment upon a special verdict, that, as the prisoner was upon an unlawful design, if he had in pursuance thereof discharged the fusee against any of the king's officers that came to resist him in the prosecution of that design, and by accident had killed one of his own accomplices, it would have been murder in him. As if a man, out of malice to A., shoot at him, but miss him and kill B., it is no less a murder than if he had killed the person intended. And, again, where the prisoner had fired a loaded pistol at a person on horseback, and declared that he did so only with the intention to cause the horse to throw him, and the ball hit another person and killed him, it was held that the crime was murder. If a man have a sudden quarrel and fight with A., by which his passions are strongly excited, and while his passions are thus excited, he, without any real or supposed provocation, kill B., who is an utter stranger to the whole affair, and has not interfered in the quarrel nor been in any way connected therewith, even in the party's own suppositions, it will be murder. But where the prisoner having had a quarrel with his wife, and aimed a blow at her with an axe which fell on the head of his infant son then in her arms, by which it was instantly killed, it being shown that the prisoner was ignorant of his child's position, and was at the time in the heat of blood, seeking to avenge himself on his wife for a supposed injury, it was held that as the case was to be considered as if the wife had been the victim, the same grade of homicide would attach to the killing of the child as it would have done to that of the wife, had she been killed. But in this, as in cases of malice prepense and express, if the blow intended for one would in law have amounted to manslaughter, it will still be the same, though by mistake or accident it kill another. Thus, in an old case, a quarrel arising between some soldiers and a number of keelmen at Sandgate, a violent affray ensued, and one of the soldiers was very much beaten. The prisoner, a soldier who had before driven a part of the mob down the street, with his sword in his scabbard, on his return, seeing his comrades thus used, drew his sword and bid the mob stand clear, saying he would sweep the street; and on their pressing on him he struck at them with the flat side, and as they fled pursued them. The other soldier in the mean time had got away, and

(*p*) 1 Hale, 379, 439, 466; Dyer, 128; Bd. 111, 112, 117; Pult de Pace, 1246; Foot, 261; 1 Hawk. C. 31, 542; State *v.* Cooper, 1 Green, N. J. R.; State *v.* Benton, 2 Dev. and Bat. 196.

(*q*) 1 Hale, 230; 2 Plowden's Com. 474.

when the prisoner returned he asked whether they had murdered his comrade; and being several times again assaulted by the mob, he brandished his sword and bid them keep off. At this time, the deceased, who from his dress might be mistaken for a keelman, was going along about five yards from the prisoner; but before he passed, the prisoner went up to him and struck him on the head with his sword, of which he presently died. This was holden manslaughter; it was not murder, because there was no previous provocation, and the blood was heated in the contest; nor was it self-defence, because there was no inevitable necessity to excuse the killing in this manner.(*r*)

A widow, finding that one of her sons had not prepared her dinner as she had directed him to do, began to scold him, upon which he made her some very impertinent answers, which put her in a passion, and she took up a small piece of iron used as a poker, intending to frighten him, and seeing she was very angry, he ran towards the door of the room, when she threw the poker at him, and it happened that the deceased was just coming in at the moment, and the iron struck him on the head and caused his death. Parker, J. A. J., said to the jury, "No doubt this poor woman had no more intention of injuring this particular child than I have, but that makes no difference in the law. If a blow aimed at an individual unlawfully—and this was undoubtedly unlawful, as an improper mode of correction—and strikes another and kills him, it is manslaughter; and there is no doubt if the child at whom the blow was aimed had been struck and died, it would have been manslaughter; and so it is under the present circumstances."(*s*)

Under this head may be classed the cases where medicine is administered or an operation performed with an intent to produce an abortion, and where the mother dies under the process. At common law this has been held to be murder. (*t*) If there is mixed up in the offence an intent to do bodily harm to the mother, the same result follows. (*u*) In a case in Maine, it has been said, that as the general principle of law is that homicide, with an intent to commit a misdemeanor, is but manslaughter, so in this case, if the destruction of the *fœtus* be but a misdemeanor, the offence is only manslaughter. (*v*) This, however, is not the received doctrine, (*w*) by which the offence is treated as murder, the destruction of an infant, *en ventre sa mere*, being, even at common law, in some respect felonious, and the act in its nature malicious and deliberate, and necessarily attended with great danger to the person on whom it is practised.

§ 1012. (3.) *From collateral malice.*—Malice may be said to be collateral when it is directed to an object other than that of human life or limb; as, for instance, when the object is to commit a felony or a misdemeanor, in the pursuit of which human life is incidentally taken. At common law, when a party in the attempt to perpetrate a felony takes life, he is guilty of murder, though the taking of life was the result of mere accident—*e.g.*, where he shoots a tame fowl with the intention of killing it, and the ball aimed at the fowl

(*r*) Wharton on Hom. 43.
(*s*) R. *v.* Couner, 1 C. & P. 438.
(*t*) 1 Hale, 90; Com. *v.* Chauncy, 2 Ashmead, 227; Smith *v.* State, 3 Redding, 48
(*u*) Ibid.
(*v*) Smith *v.* State, 3 Redding, 48.
(*w*) Wh. C. L. L. 3 ed. 537; 1 Hale, 90; Com. *v.* Chauncy, 1 Ashmead, 227.

strikes a child and kills it. By statutes which obtain in most of the States this principle, so far as concerns the higher grade of felonies, has been definitely established, it having been enacted that all murder committed in the perpetrations of, or the attempt to perpetrate any burglary, rape, robbery, or arson, shall be murder in the first degree. Where, at common law as well as under these statutes, the unlawful act to which death is incidental is a mere misdemeanor, the homicide is but manslaughter. Thus, if the attempt is to poach on another man's premises for the purpose of shooting wild game, and a stranger is accidentally killed, this is but manslaughter; and so if death ensue in the prosecution of an unlawful game.

II. Manslaughter

§ 1013. Is the unlawful and felonious killing of another, without any malice either express or implied.(*x*) Manslaughter differs from murder in this, that, though the act which occasions the death be unlawful, or likely to be attended with bodily mischief, yet the malice either express or implied, which is the very essence of murder, is presumed to be wanting, the act being imputed to the infirmity of human nature; and the punishment is proportionately lenient.(*y*) It is no defence to an indictment for manslaughter that the homicide therein alleged appears by the evidence to have been committed with malice aforethought, and was therefore murder; but the defendant in such a case may notwithstanding be properly convicted of the offence of manslaughter.(*z*)

Manslaughter at common law is of two kinds. 1st. Voluntary manslaughter, which is the unlawful killing of another without malice, on sudden quarrel or in heat of passion. Where, upon sudden quarrel, two persons fight, and one of them kills the other, this is voluntary manslaughter, and so if they, upon such occasion, go out to fight in a field; for this is one continued act of passion. So, also, if a man be greatly provoked by any gross indignity, and immediately kills his aggressor, it is voluntary manslaughter, and not excusable homicide, not being *se defendendo;* neither is it murder, for there is no previous malice. In these and such like cases, the law, kindly appreciating the infirmities of human nature, extenuates the offence committed, and mercifully hesitates to put on the same footing of guilt, the cool deliberate act and the result of hasty passion.

§ 1014. 2d. Involuntary manslaughter, where a man doing an unlawful act, not amounting to felony, by accident kills another. It differs from homicide excusable by misadventure, in this: that misadventure always happens in the prosecution of an lawful act, but this species of manslaughter in the prosecution of an unlawful one. Where a person does an act lawful in itself, but in an unlawful manner, this excepts the killing from homicide excusable

(*x*) 1 Hale, 449; 1 Hawk. c. 30, s. 3; Parker J., Selfridge's Trial, 158; State *v.* Norris, 1 Hay. 429.

(*y*) *Ex parte* Taylor, 5 Carver, 51; King *v.* Com. 2 Ma. Cas. 78; Com. *v.* Bob, 4 Dall. 125; State *v.* Lorkey, 2 Kell. 8 C. Dig. 104; Penn *v.* Levin, Addison, 279; State *v.* Travers, 2 Wheel. C. C. 506; Com. *v.* Mitchell, 1 Va. Cas. 716; Parker, J., Selfridge's Trial, 158; 1 Hale, 449, 450, 466; 3 Inst. 55; 1 Hawk. c. 30, s. 2, *vide* R. *v.* Mawgridge, Kel. 124; Fost. 290, *vide* Lord Cornwallis' case, Dom. Proc. 1678; 2 St. Tr. 730.

(*z*) Com. *v.* McPike, 3 Cush. 18.

per infortunium and makes it involuntary manslaughter. In general where an involuntary killing happens in consequence of an unlawful act, it will be either murder, or manslaughter, according to the nature of the act which occasioned it: if it be in prosecution of a felonious intent, or in its consequences naturally tended to bloodshed, it will be murder; but if no more was intended than a mere civil trespass, it is manslaughter.(*a*)

§ 1015. III. EXCUSABLE HOMICIDE is of two kinds: 1st. Where a man doing a *lawful* act, without any intention to hurt, by accident kills another; as for instance, where a man is hunting in a park, and unintentionally kills a person concealed. This is called homicide *per infortunium*, or by misadventure. 2d. *Se defendendo* or in self-defence, which exists (to adopt the definition of Mr. Greenleaf),(*b*) where one is assaulted upon a sudden affray, and in the defence of his person, where certain and immediate suffering would be the consequence of waiting for the assistance of the law, and where in such case, there being no other means of escape, he kills the assailant. To reduce homicide in self-defence to this degree, it must be shown that the slayer was closely pressed by the other party, and retreated as far as he conveniently or safely could, in good faith, with the honest intent to avoid the violence of the assault. The jury, as will be presently seen more fully, must be satisfied that unless he had killed the assailant, he was in imminent and manifest danger of either losing his own life, or of suffering enormous bodily harm.(*c*) By the older text-writers, this species of homicide is sometimes called chance medley, or *chaud medly*, words of nearly the same import; and closely borders upon manslaughter. In this case, as well as that of manslaughter, the theory is, that passion has kindled on each side, and that blows have passed. The distinction, however, is that in manslaughter, it must appear that either the parties were actually in mutual combat when the mortal stroke was given, or that the slayer was not at that time in imminent danger of death; but that in homicide excusable in self-defence, it must appear, either that the slayer had not begun the fight, or that, having begun, he endeavored to decline any further struggle, and afterward, being closely pressed by his antagonist, he killed him, to avoid his own destruction.(*d*) The same right of self-defence is extended to the relations of master and servant, parent and child, and husband and wife; and to those cases where homicide is unavoidably committed in the defence of the possession of one's dwelling-house, against a trespasser, who, having entered, cannot be put out otherwise than by force; and where no force is used, and where no instrument or mode is employed than is necessary and proper for that purpose. Under the same general head of excusable homicide may also be enumerated that class of cases, where two persons are reduced to the alternative, that one or the other or both must certainly perish, as, where two

(*a*) 4 Bl. Com. 191. (*b*) 3 Greenleaf Ev. § 116.

(*c*) Bl. Com. 182; 1 Russ. on Crimes, 666, 661; Whart. Am. Crim. Law, § 1019, &c. Qui cum, aliter tueri se non possunt, damni culpam dederint, innoxii sunt. Vim enim vi defendere omnes leges omniaque jura, permittant.—Dig. lib. 9, tit. 2, l. 45, § 4. Is, qui aggressorem vel quemcunque alterum in dubio vitæ discrimine constitutus occiderit, nullam ob id factum calumniam meruere debet.—Cod. lib. 9, tit. 16, l. 2.

(*d*) 4 Bl. Com. 184; 1 Russ. on Crimes, 661; State *v* Hill, 4 Dev. & Batt. 491.

shipwrecked persons are on one plank which will not hold them both, and one thrust the other from it, so that he is drowned, the survivor is excused.

§ 1016. The distinction, in result, between justifiable and excusable homicide is now practically exploded. In former times, in the latter case, as the law presumed that the slayer was not wholly free from blame, he was punished, at least by forfeiture of goods. But in this country, this rule is not known ever to have been recognized; it having been the uniform practice here, as it now is in England, where the grade does not reach manslaughter, for the jury, under the direction of the court, to acquit.

§ 1017. IV. JUSTIFIABLE HOMICIDE(*e*) is that which is committed either, 1st. By unavoidable necessity, without any will, intention, or desire, or any inadvertence or negligence in the party killing, and, therefore, without blame; such as, by an officer, executing a criminal, pursuant to the death-warrant, and in strict conformity to the law in every particular; or, 2dly. For the advancement of public justice; as, where an officer in due execution of his office, kills a person who assaults and resists him; or where a private person or officer attempts to arrest a man charged with felony and is resisted, and in the endeavor to take him, kills him; or if a felon flee from justice, and in the pursuit he be killed, where he cannot otherwise be taken; or, if there be a riot, or a rebellious assembly, and the officers or their assistants, in dispersing the mob, kill some of them, where the riot cannot be otherwise suppressed; or, if prisoners in jail, or going to jail, assault or resist the officers, or their aids, in repelling force by force, kill the party resisting; or, 3dly. For the prevention of any atrocious crime, attempted to be committed by force; such as murder, robbery, house-breaking in the night time, rape, mayhem, or any other act of felony against the person.(*f*) But in such cases, the attempt must not be merely suspected, but apparent, and the danger must be imminent, and the opposing force or resistance necessary to avert the danger or to defeat the attempt.(*g*)

V. MURDER IN THE SECOND DEGREE.

§ 1018. As already observed, statutes exist in most of the United States, dividing murder as it stood at common law into two degrees, to the first of which is attached the penalty of death, and to the second imprisonment. The origin of this distinction was the reluctance felt to attach death to any other

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(*e*) United States *v.* Wiltberger, 3 Washburn, 515. And see State *v.* Rutherford, 1 Hawks. 457; State *v.* Roane, 2 Dev. 58.

(*f*) 4 Bl. Com. 182; 1 Russ. on Crimes, 657–660.

(*g*) The above definition is taken from Mr. Greenleaf (3 Greenl. on Evid. 315), who refers to 4 Bl. Com. 178–180; 1 Russ. on Crimes, 660; Whart. Am. Crim. Law, § 1026, &c. The Roman civil law recognized the same principles. Qui latronem (insidiatorem) occederit, non tenetur, utique si aliter periculum effugere non protest.—Inst. lib. 4, tit. 3, § 2. Furem nocturnum, si quis occiderit, ita demum impune feret, si parcere ei sine periculo suo non potuit.—Dig. lib. 48, tit. 8, l. 9. Qui stuprum sibi vel suis per vim inferentem occidit, dimmittendum.—Dig. lib. 48, tit. 8, l. 1, § 4. Si quis percussorem ad se venientem gladio repulerit, non ut homicida tenetur; quia defensor propriæ salutis in nullo pecasse videtur.—Cod. lib. 9, tit. 16, l. 3. In the cases mentioned in the text, if the homicide is committed with undue precipitancy, or the unjustifiable use of a deadly weapon, the slayer will be culpable.—See Alison's Crim. Law of Scotland, p. 100; Id. 132–139.

offences than those in which death was intended. The *Lex Talionis*, as well as the necessities of human society, would require, it was thought, a continuance of capital punishment in cases of deliberate homicide; but it seemed hard, as well as unnecessary, to take the life of the offender where the offence for which he was tried was one which he had never premeditated. To obviate these difficulties the statutes were passed, which, while they differ among themselves in phraseology, unite in the general principle that where murder is *intentional*, or where it is committed in the perpetration or the attempt to perpetrate any burglary, arson, rape, or robbery, or where it is by poison, it is murder in the *first* degree; when not falling under either of these heads, murder in the *second* degree.

§ 1019. By judicial interpretation the following propositions may be considered as established:—

1st. *A specific intent to take life* is the distinguishing test by which murder in the first degree may be determined. Where it exists the capital offence is consummated. Where it is wanting, no matter how long may have been the premeditation, how decided the wilfulness, or how pointed the malice, it is but murder in the second degree. Thus, if a man designedly beat another to a jelly, from which death results, this is but murder in the second degree, if it appear that the intent was merely to inflict bodily harm. And so if in a riot, in the wildness of collision, fire-arms are discharged with intent merely to maim an antagonist, or to redress some imaginary wrong, and life is taken, it is but murder in the second degree.(*h*)

§ 1020. 2d. Homicide by poison is not necessarily murder in the first degree. The statutes, it should be recollected, use the term, all "*murder*," (not all "*homicide*,") by poison, &c., is murder in the first degree. Hence, if the poisoning would have been manslaughter or misadventure at common law, it will not be raised to murder in the first degree by the mere force of the statute. Thus, if poison be laid for the purpose of unlawfully killing game, or for the purpose of effecting any other misdemeanor, or if a poisonous drug be negligently administered by a quack, and death result, this would be manslaughter at common law; and not being "murder," is not affected by the statute which applies to "murder" alone.(*i*) Hence, a verdict of murder in the second degree will not be disturbed, even though it appear that the case was one of deliberate poisoning.(*j*)

§ 1021. 3d. When the murder is collateral to any arson, rape, robbery, or burglary,—and in Tennessee, larceny,—it is necessarily murder in the first degree.

§ 1022. 4th. When in the pursuit of the life of A., B. is unintentionally killed, the general opinion is, this is murder in the second degree, though as to this there has been some doubt.(*k*)

§ 1023. 5th. The specific intent to take life, which is the distinguishing feature of murder in the first degree, may be inferred from the same circumstances from which design in other cases is presumed. If one man shoot

(*h*) Wharton on Hom. 386.
(*i*) Ibid. 359.
(*j*) Ibid. 359, 360.
(*k*) Ibid. 362, 463.

another through the head with a musket or pistol ball—if he stab him in a vital part with a sword or dagger—if he cleave his skull with an axe or the like—it is almost impossible for a reflecting and intelligent mind to come to any other conclusion than that the perpetrators of any such acts of deadly violence intended to kill. Where the defendant deliberately procured a butcher's knife, and sharpened it for the avowed purpose of killing the deceased; where he concealed a dirk in his breast, stating shortly before the attack that he knew where the seat of life was; where he thrust a handspike deeply into the forehead of the deceased; the presumption was held to exist that the killing was wilful. But it is not necessary, to warrant a conviction of murder in the first degree, that the instrument should be such as would necessarily produce death. Thus, where the weapon of death was a club, not so thick as an axe-handle, the jury, under the charge of the court, rendered a verdict of murder in the first degree, it appearing that the blow was induced by a deliberate intention to take life. The same presumption of intention is drawn with still greater strength from the declared purpose of the defendant, which is always admissible in evidence for such a purpose. Thus, where the prisoner, a negro, said he intended "to lay for the deceased, if he froze, the next Saturday night," and where the homicide took place that night; where it was said, "I am determined to kill the man who injured me;" where the prisoner declared, the day before the murder, that he would certainly shoot the deceased; where, in another case, the language was, "I will split down any fellow that is saucy;" where the prisoner rushed rapidly to the deceased, and aimed at a vital part; where a grave had been prepared a short time before the homicide, though the deceased was not ultimately placed in it, the whole plan of action being changed; in each of these cases it was held murder in the first degree.

B.—Corpus Delicti.(*l*)

§ 1024. I. That a death took place.

"I would never," said Lord Hale, "convict any person of murder or manslaughter, unless the fact were proved to be done, or at least the body found dead."(*m*) The civilians are no less emphatic. "Diligenter cavendum est judici, ne supplicium præcipitet, antequam de crimine consteterit."(*n*) "De corpore interfecti necesse est ut constet."(*o*) Numerous cases attest the necessity of this check. Thus we are told of a Frenchman who was convicted on his own confession, of the murder of a widow, who, two years afterwards, returned to her home, and had never received any injury whatever. And as Bunyan tells us: "Since you are entered upon stories, I also will tell you one, the which, though I heard not with my own ears, yet my author I dare believe. It is concerning one old *Tod* that was hanged about twenty years ago, or more, at *Hartford*, for being a thief. The story is this: At a Summer Assize, holden at *Hartford*, while the judge was sitting upon the bench,

(*l*) See as to Identification of Dead Body, *ante*, § 473, &c.
(*m*) 2 Hale, P. C. 290, and see Tyner *v.* State, 5 Humph. 383.
(*n*) Matth. de Crim. in Dig. lib. 48, tit. 16, ch. 1.
(*o*) Matth. Probat. ch. 1, n. 4, p. 9.

comes this old *Tod* into the court, clothed in a green suit, with his leathern girdle in his hand, his bosom open, and all in a dung sweat, as if he had run for his life; and being come in he spake aloud as follows: *My Lord*, said he, *here is the veryest rogue that breathes upon the face of the earth; I have been a thief from a child; when I was but a little one, I gave myself to rob orchards, and to do other such like wicked things, and I have continued a thief ever since. My Lord, there has not been a robbery committed this many years, within so many miles of this place, but I have either been at it, or privy to it.* The judge thought the fellow was mad; but after some conference with some of the justices, they agreed to indict him, and so they did, of several felonious actions; to all of which he heartily confessed guilty, and so was hanged with his wife at the same time." And yet, in this case, the guilt, if not imaginary in fact, was so in law, so far as concerned all the purposes of the trial.

§ 1025. A case occurred at Ratisbon, in 1849,(*p*) of which the following is a brief abstract: A girl 20 years of age was arrested on the supposition that she had committed infanticide. Being brought before the examining magistrate, a few days after the alleged commission of the crime, she made the following statement: "I was a domestic in the house of the brewer L., but was dismissed from his service on account of being far gone in pregnancy, and near my confinement. After returning to my home in the country, I came back to the town to get my clothes. But on the way, as I came near the bridge, I felt severe pains, and soon became sure that labor had commenced. My situation was distressing; I was entirely alone and helpless. Meanwhile it became dark, the pains became more and more severe, and about midnight I was delivered of a boy. The child was living when it came into the world, for it cried, and when I put my finger in its mouth it sucked; in truth, at first, I had great joy over the child; soon, however, I could not bear to look at it; the fear of shame and exposure, and the thought that perhaps I would never be able again to obtain a situation, got the better of me; I ran, without further hesitation to the bridge, with the child in my arms, and threw it over into the deepest part of the river, where it soon disappeared." She afterwards gave still more minute details, relative to her pregnancy and the birth of the child, all of which were perfectly consistent and natural. Upon the physical examination (which is directed by the Bavarian penal code), it was discovered that she had not been pregnant! She was taken to the hospital and leeches freely applied to her head, under which treatment she soon recovered her reason and her usual bodily health. Very probably the delusion might have become a fixed one, had this rational treatment not been adopted at the proper time.(*q*)

(*p*) Henke's Zeitschrift, E. H. 41.

(*q*) See *ante*, § 473, &c. I am indebted to Mr. Wm. B. Reed for the following note: In the case of Margaret Shreves, tried for infanticide in the Oyer and Terminer of Philadelphia, in October, 1855, there was a striking illustration of the rule as to the *corpus delicti*, and of the necessity of accurate observation on the part of the coroner on the inspection of doubtful remains. The daughter of the prisoner was delivered of a female illegitimate child on 7th June, at 10 A. M. The infant was handed to the grandmother (the prisoner) on its birth. It was neither washed nor dressed. At 6

§ 1026. An equally singular case in this country is that of two brothers, named Boorns, who, on being charged with the murder of another, were convicted and sentenced to death, chiefly on their admissions, but were fortunately relieved from execution by the reappearance of their alleged victim. To the same effect is a case in Illinois, in 1841, where three brothers, named Trailor, were arrested on the charge of murdering a man named Fisher, who, when last seen, had been in their company. Strong circumstantial evidence was produced, showing the traces of a death struggle, where the homicide was alleged to have been committed; and the case was fortified by expressions alleged to have been subsequently used by one of the brothers as to his having become legatee of the deceased's property. The examination had scarcely finished before one of the three defendants made a confession, detailing circumstantially the whole transaction, showing the previous combination, and ending with a direct statement, under oath, of the homicide. "To the amazement of the whole country, however, the deceased made his appearance in just time enough to intercept a conviction; and the only way of accounting for the confession which had been produced, was, that the party who made it, in the desperation of impending conviction, took this method of cutting short suspense."(r)

P. M., the prisoner was seen in the street at some distance from her home with the infant, still undressed, wrapped in a shawl. It was raining heavily. The child was blue, and moaned, making a noise as if in a spasm. The prisoner said laudanum had been given, which was proved to be false. At a late hour the prisoner was again seen with the child alive but moaning. She tried to leave it at the Foster Home, but was refused. The child was never again seen alive. Two weeks afterwards, the conduct of the prisoner being in the mean time very mysterious, and she being detected in many falsehoods, on the 14th, the body of a female new-born infant was found in the prisoner's privy, very much decomposed. The identity of the remains was in question. The attending physician testified he had at the delivery tied the cord with common sewing thread. The string around the cord of the infant found in the privy *was said* to resemble thick twine rather than thread, but there was difference of opinion about it. It may have swelled and altered by the action of liquid. The production of the string would have determined this, *but this the coroner failed to preserve.* The court (Thompson, P. J.) held it necessary to establish—1. The identity of the remains beyond doubt. 2. That the infant had not died accidentally, possibly by neglect, and was not merely concealed in the privy. The jury properly acquitted the prisoner. Here no element of proof as to the corpus delicti was clear. For other cases, see *post*, § 1274 *et seq.*

(r) In the Philadelphia Evening Bulletin, for July 4, 1860, appeared the following very curious communication in reference to this case:—

MESSRS. EDITORS: An article in your issue of the 2d inst., from the Cleveland Plaindealer, entitled, "False Personation at a Critical Moment," attracted my attention. It purports to be a confession of a notorious counterfeiter, by the name of Boorn, that he killed a man by the name of Cobley, forty years ago, in Vermont, and escaped by producing a man from New Jersey so much resembling Cobley as to induce the belief that he was the very man, and so cleared him from the gallows, and let him and his brother go free.

Perhaps I can cast some light upon this most singular transaction. More than forty years since, a deranged man came to my father's house, near Tuckerton, New Jersey, hungry, ragged, and dirty. He was cared for during the night. He said that he had been murdered in Vermont, and never would return there again. It was winter, and extremely cold. He walked across the bay on the ice, and lounged about the neighborhood for weeks; said his name was Russell Colvin, and his people lived in Vermont. He travelled up shore a few miles above Toms River, to the house of a Mr. Polhamus. The family so pitied him as to give him a home with them during the balance of his life. I have been there several times, and always have seen him attending to pigs and poultry about the farm. A number of years after he came there—say some fifteen years or less, I can't recollect—two men were tried, I think it was in

§ 1027. To the general rule, however, two qualifications may be recognized. In the first place, when the decease is proved by eye witnesses, inspection of

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Burlington, Vermont, for the murder of this same man. One was found guilty of murder in the first degree, and sentenced to be hanged; the other was sentenced to imprisonment for life.

A lawyer, connected with the trial, deemed the case a most singular one, and inserted a notice in the paper inquiring if any one knew the said Russell Colvin, giving withal a description of the man. This caught the eye of a brother of Mr. Polhamus, at whose house the man Colvin was living. He forthwith wrote to said lawyer, detailing the above facts. Polhamus and the lawyer were soon on the way to New Jersey to see the murdered man. They found him there, and Colvin knew the lawyer, and called him by name at first sight. After some persuasion, his reluctance to go to Vermont was overcome, and all three started north. When they arrived in Burlington, the court-house was soon filled with an excited community, all anxious to see the dead man. Officers were soon collected, the prisoners were brought in, and they, as well as the community, recognized Colvin at once. The prisoners were discharged of course. Colvin's wife and two sons came to see him, and used every endeavor to induce him to go home and remain with them. All entreaty proved useless and vain; return to New Jersey he would and did, and lived many years after at the house of Mr. Polhamus.

A pamphlet was published of the trial and all the facts therein stated, which I was reading one evening at the house of Mr. Polhamus, and in the presence of Mr. Colvin. He muttered all the time I was reading, until I had to lay it aside, as he was getting angry at the sight of it. Mrs. Polhamus said the sight of the book always enraged him.

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A Newspaper Account of the Affair.—Mr. Barna Boorn, and his aged partner, were respectable inhabitants of Manchester, in the State of Vermont. They were the parents of a son and two daughters, beside the unhappy Stephen and Jesse, who figure in the story we are about to narrate.

Sally, one of the daughters, became the mother of several children, all of whom were dispersed among their relatives, owing to the mental derangement of their father, which rendered him incapable of attending to his family concerns, and of providing for them a necessary support.

Mr. Colvin was in the habit of frequently absenting himself, without giving any previous information, and rambling in various parts of the country. At one time he was absent as long as nine or ten months, after which he was found in the State of Rhode Island.

About eleven years after his marriage to Miss Boorn, he was again missing; which at the time caused little or no alarm, as it was expected that he would return as on former occasions. But after a lapse of several years, nothing having been heard of him, surmises were circulated that he had been murdered; and suspicion rested upon his brothers-in-law, Stephen and Jesse Boorn, as his murderers. This suspicion was created by a reference to the frequent altercations that had taken place between Colvin and the Boorns previous to the disappearance of the former, and to some unguarded expression of the latter afterwards, intimating that Colvin was dead, and by their occasionally showing some signs of compunction.

A Mr. Boorn, uncle to Stephen and Jesse, a gentleman of respectability and unimpeachable character, dreamed that Russel Colvin came to his bedside and told him that he had been murdered, and he must follow him and he would lead him to the spot where he was buried. This was repeated three times. The deposit was a place talked of previous to the dream, which was where a house had formerly stood, and under it was a hole about four feet square, which was made for the purpose of burying potatoes, and then filled up. This pit was opened, and nothing discovered but a large knife, a penknife, and a button. Mrs. Colvin, anterior to their being presented to her, described them accurately, and on seeing them, said they belonged to her husband, excepting the small knife.

A lad, walking from Mr. Barna Boorn's, a small distance, with his dog, a hollow stump standing near the path engaged the notice of the spaniel, which ran to the place and back again several times, lifting up his feet on the boy, with whining notes, as though to draw the attention of his little master to the place, which had the effect. A cluster of bones were drawn from the roots of the stump by the dog's paws. Further examination was made, and in the cavity of the stump were found two toe-nails, to appearance belonging to a human foot; others were discovered in a crumbled state, which to appearance had passed through the fire. It was now concluded by many that some fragments of the body of Russel Colvin were found. The cluster of bones were brought before the Court of Inquiry. They were examined by a number of phy-

the body is unnecessary. Thus, in a case in England, the prisoner, a seaman on board of the ship Eolus, was charged with the murder of his captain.

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sicians, who thought them to be human; one of the profession, however, thought otherwise. A Mr. Salisbury, about forty years previous, had his leg amputated, which was buried at the distance of four or five miles. The limb was dug up, and, by comparing, it was universally determined that the bones were not human. However, it was clear that the nails were human, and so appeared to all beholders. The bones were in a degree pulverized, but some pieces were in a tolerable state of preservation. Suspicions were excited that the body was burnt, and some part not consumed cast into the stump, and other bones put among them for deception. Some time after the departure of Colvin, a barn belonging to Mr. Barna Boorn was consumed by fire, accidentally; it was conjectured that the body was taken up and concealed under the barn, and mostly consumed. About that time a log heap was burnt by the Boorns, near the place where the body was supposed to be deposited; it was thought by some that it was consumed there.

The subject occupied the attention of almost every mind in the neighborhood.

Previous to the general excitement, Stephen Boorn, with his family, moved to Denmark, County of Lewis, in the State of New York, about two hundred miles from the place of his nativity, where they were comfortably settled; while Jesse remained in Manchester, where he was arrested and frequently brought before a Court of Inquiry. He at first boldly asserted his innocence; but, after several days' confinement, and after every art made use of to induce him to criminate himself and his brother, and being told that a confession would probably be the means of obtaining his liberty, as strange and unaccountable as it may appear, he did confess that his brother Stephen had told him that he (Stephen) had given Colvin a blow, and laid him aside where no one could find him. Upon this, the authority issued a warrant to apprehend Stephen. Capt. Truman Hill, grand juryman for the town of Manchester, Squire Raymond, and Mr. R. Anderson, set out for Denmark, and arrived there in three days. They called on Mr. Eleazer S. Sylvester, innkeeper, who, in the night, together with a Mr. Orange Clark and Mr. Hooper, belonging to the town, accompanied them to the house of the supposed criminal. Mr. Clark went in first, and began some conversation about temporal concerns; the others surrounded the house, and he was easily taken. The surprise and distress of Mrs. Boorn on this occasion are not easily described; they excited the compassion of those who had come to take away her husband, and they made her some presents. The prisoner was put in irons and brought to Manchester. He peremptorily asserted his innocence, and declared that he knew nothing about the murder of his brother-in-law. The prisoners were kept apart for a time, and assigned to separate cells. Nothing material transpired, and they were afterwards confined in one room.

Stephen denied the evidence brought against him by Jesse, and treated him with severity. Both the prisoners were repeatedly admonished to pay the strictest regard to truth. Many days were taken up in public examinations of the reputed criminals. Circumstantial evidence was brought forward, which was much against them, and they were bound over to await their trial at the sitting of the Supreme Court, to be held at Manchester on the third Tuesday of September, 1819.

Jesse Boorn, after an interview with his brother, denied that Stephen ever told him that he killed Colvin, and that what he reported about him was false. For some time they both continued to assert their innocence; but being told that they would undoubtedly be convicted upon the testimony already against them, and hopes of pardon being held out if they would confess the crime, at last Stephen wrote a statement of what he said were facts, in which he acknowledged he killed Colvin, deposited him in the place where the knife and button were found; that he took the bones from that place and put them under his father's barn, which was soon after burned, and the body principally consumed.

A person in jail with them for perjury, testified to a full confession of the murder, made to him by Stephen and Jesse, and it was so artfully framed, so corroborated by other facts, that it had great weight with the court and jury, though it was wholly false. But he had his end answered—he got bail by this means, and went off.

During the interval, the prisoners were frequently visited by the Rev. Mr. Haynes, in his official capacity, but they did not discover any symptoms of compunction, persisting in declaring their innocence, with appeals to heaven. Stephen particularly, at times, appeared absorbed in passion and impatience. One day Mr. Haynes introduced the example of Christ under suffering as a pattern worthy of imitation. He exclaimed, "I am as innocent as Jesus Christ!" for which extravagant expression he was reproved. He replied, "I don't mean that I am as guiltless as he was; I know I am a great sinner; but I am as innocent of killing Colvin as he was." The court sat in

The first count of the indictment alleged the murder to have been committed by a blow from a large piece of wood, and the second by throwing the deceased into the sea. It appeared in evidence that, while the ship was lying off the coast of Africa, where there were several other vessels near, the prisoner was seen one night to take the captain up in his arms and throw him into the sea, after which he was never seen or heard of; but that near the place on the deck where the captain was seen, was found a billet of wood, and the deck and part of the prisoner's dress were stained with blood. On this, it was objected by the prisoner's counsel that the *corpus delicti* was not proved, as the

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September, and a judicious and impressive charge was given to the grand jury by his honor Judge Doolittle, and a bill of indictment was presented against Stephen and Jesse Boorn; but as it was not a full court, the trial could not commence.

The court was accordingly adjourned to the 26th of October, 1819. It was with much difficulty that a jury was obtained.

The court ruled that Stephen and Jesse Boorn should be jointly tried for the murder of Russel Colvin.

About fifty witnesses were successively examined, but they were only corroborative of each other, all tending to prove the leading facts, and too voluminous for this brief sketch.

The jury retired, and within about one hour returned, and, in compliance with a request of Mr. Skinner, they were severally inquired of whether they had agreed upon a verdict, and each agreed that they had found both of the prisoners guilty of the murder charged against them. The verdict was then publicly read by the clerk. After a short recess his honor Judge Chase pronounced the sentence, that the prisoners be remanded back to prison, and that, on the 28th day of January, between the hours of 10 and 2 o'clock, they should be hung by the neck until they were dead!

Mr. Taber Chadwick, of Shrewsbury, Monmouth County, N. J., brother-in-law of Mr. William Polhamus, of Dover, in the same State, where Colvin had lived ever since April, 1813, seeing the account of the trial of the Boorns at Manchester, wrote that Colvin was still alive, and with his brother-in-law, Polhamus, in Dover, about forty miles from Shrewsbury. When the letter came to town, every one was struck with consternation. A few partly believed, but the main doubted.

"It cannot be that Colvin is alive," was the general cry. Mr. Chadwick's letter was carried to the prison and read to Stephen; the news was so overwhelming that, to use his own language, "nature could scarcely sustain the shock;" but as there was some doubt as to the truth of this report, it tended to prevent an immediate dissolution. He observed that he "believed had Colvin then made his appearance, it would have caused immediate death; even now a faintness was created that was painful to endure." Soon a letter was received from New York, stating that the man who was supposed to be murdered was probably still alive.

Mr. Whelply, formerly of Manchester, and who was intimately acquainted with Colvin, had actually gone to New Jersey in quest of him. Thus there was increasing evidence in confirmation of the letter. As soon as Mr. Whelply had returned to New York, he immediately wrote that he "had Colvin with him." A New York paper announced his arrival also, and that he would soon set out for Vermont. Notwithstanding all this, many gave no credit to the report, but considered it a mere deception. Large bets were made. Colvin was unwilling to return to Vermont with Mr. Whelply, who was obliged to have recourse to stratagem. A young woman of Colvin's acquaintance agreed to accompany him, pretending that she only designed a visit to New York. While there she was missing, which excited some uneasiness in the mind of the exile.

While staying a few days at New York, to prevent his returning, Mr. Whelply told him there were British men-of-war lying in the harbor, and unless he kept within doors he would be kidnapped. This had the desired effect. Colvin, when he set out for Manchester, concluded that he was on his way home to New Jersey, and never perceived the deception until he came to Bennington, where he arrived on the 22d of December, and saw many people with whom he had formerly been acquainted, which filled him with surprise.

The county court being then in session, all were filled with astonishment and surprise. The court suspended business for some hours, to gaze upon one who, in a sense, had been dead and was alive again.

Stephen related the facts amid great excitement and rejoicing, and Jesse was soon at liberty.

captain might have been taken up by some of the neighboring vessels; but the court, although they admitted the general rule of law, left it to the jury to say, upon the evidence, whether the deceased was not killed before the body was cast into the sea, and the jury being of that opinion, the prisoner was convicted and executed.

§ 1028. So also when it is shown that the body was destroyed by any chemical or mechanical agents it is, of course, unnecessary that the existence of the remains should be proved. Mr. Bentham very naturally asked whether Lord Hale's rule would not have necessarily to be relaxed whenever a part of the guilty plot was the decomposition of the body in lime, or in any of the other known chemical menstrua, or of its being submerged in an unfathomable part of the sea. And the late trial of Dr. Webster furnishes an apposite answer to this inquiry. Some portions of the deceased's body, it is true, were in this case recovered, and these enough to insure its identification, but had this not been the case, and had there been adequate positive evidence of the fact of guilt *elsewhere*, it is not likely that the result would have been different. That an entire destruction of the body is practicable was lately illustrated by a case but too familiar to the professional mind in this country. A gentleman of much respectability was accidentally caught under the rafters of a burning building, and when, a few hours after, his remains were sought for, nothing could be found that afforded the slightest index of identity. And still more complete would be the obliteration of this species of evidence by the method suggested by Mr. Bentham, of submerging in an unfathomable part of the sea. Murders on shipboard must generally be of this class, and yet the books abound with cases where this species of homicide has been punished. And the testimony taken in the Webster case, which will in a moment be reported in full, shows that by means of chemical *menstrua* there could be an entire immunity secured to guilt if the production of the remains were insisted on. Thus Dr. Jackson said "that the flesh of a human body, if cut up into small pieces and boiled in potash, might be dissolved in two or three hours. Next to this the best substance to use in dissolving or disposing of a human body would, I think, be nitric acid, and the difficulty or danger attendant upon it use, so far as the evolution of noxious vapor is concerned, would depend upon the degree of heat applied." Since then the destruction of the body is practicable, and since, if the production of the body be necessary to conviction, the worst species of homicide would go unpunished, it is obvious that the continued existence of the body cannot be considered, as is popularly supposed, essential to the judicial establishment of guilt. And, in fact, an examination even of Lord Hale's dictum, which is most relied on for the contrary opinion, shows that the "finding of the body dead" is only given as an alternative to "proving" that the fact was done. But when the *fact of death* is not positively and indisputably shown, there should be the severest scrutiny applied and the most conclusive evidence afforded, in order to make a conviction justifiable.

§ 1029. If the circumstances connected with the homicide of Dr. Parkman by JOHN W. WEBSTER do not of themselves place that case in the front rank of those in which the value and nature of indicatory testimony are determined,

the admirable manner in which the case was tried, both by the prosecution and the defence, and the elaborate and perspicuous character of the report published by Mr. BEMIS, combine to secure to it that position. (*s*) According to the introductory summary by the Attorney-General, in which the evidence as subsequently developed is stated with great exactness and fairness, Dr. George Parkman, a well-known and highly respectable citizen of Boston, was living in that city in good health and cheerful spirits, on the twenty-third day of November, 1849, and was engaged in his usual occupation on that day, up to fifteen minutes before two o'clock, at which time he was last seen alive entering the Medical College in Grove Street. He did not return to his dinner on that day; a fact which, on account of his well-known habits of punctuality, was of itself calculated to excite uneasiness in his family. It will appear that he had, at that time, an invalid daughter to whom he was tenderly attached; and upon that day, with a view, probably, of procuring a delicacy agreeable to her taste, he had purchased a quantity of lettuce—a rare plant at that season—which he left at a shop near the Medical College, with the intention, as the evidence indicates, of returning and taking it home with him upon going to his dinner. At the Medical College, the defendant, Dr. Webster, was then possessed of apartments used by him as a laboratory, and offices connected with his professorship. At that shop he made certain purchases, went from thence towards the Medical College, saying he would return in a few moments. He did not return. His family and his friends became alarmed. They waited, however, until the next morning before making any public movement in relation to his absence. On that day, which was Saturday the 24th, his relatives, those who had been in his employment, those who knew him and knew his habits, were informed of his disappearance, and a general search, though conducted with somewhat less of publicity than was afterwards resorted to, was commenced.

§ 1030. The police were applied to, to aid in that search; and in the evening papers of Saturday, notices were published, calling the attention of the public to the fact of his disappearance. Rumors of his having been seen were rife. When brought to the knowledge of those who conducted the search, they were promptly traced out, and were found in every instance to be entirely unfounded. His friends and the police heard so many confident statements of his having been seen in different parts of the city, that in one of the advertisements which was published at a very early period after his disappearance, he was represented by them as having been seen in or near Washington Street on Friday afternoon at five o'clock.

§ 1031. On tracing this rumor and others like it to their source, it was satisfactorily ascertained by those who had the deepest interest in following up this search with assiduity, vigilance, and care, that the persons from whom these rumors proceeded, in every instance, were either mistaken in respect to the time when he was seen, or the identity of the person. The entire police force of the city were brought into requisition; handbills were issued offering the most liberal rewards; one of them a reward of three thousand dollars.

(*s*) Rept. of case J. W. Webster, Boston, 1850.

When these rewards were offered to the public, and no tidings of him were obtained, whatever might have been the hopes and expectations of those who had looked for his reappearance, those hopes and expectations gave way; and the apprehensions which had begun to be entertained by his friends, the police, and the public, deepened into certainty that he was no longer in the land of the living. In the course of Sunday, the day following the first publications in the newspapers, the family of Dr. Parkman learned from Dr. Webster that, on the Friday previous, Dr. Parkman had been in his company, at the Medical College, at half-past one o'clock.

§ 1032. The search was continued through Monday, Tuesday, Wednesday, Thursday, and up to Friday of the week following his disappearance; and although those who were engaged in it did occasionally hear, as I have already remarked, that he had been seen after the time when he was represented by the prisoner to have been in his rooms at the Medical College, and although they pursued every report, and followed up diligently every rumor which came to their knowledge—going to Salem, East Boston, to different parts of the city where he was reported to have been seen—yet no reliable information could be obtained respecting him. Handbills were circulated in every direction. The river was dredged.

1033. The yards, the out-buildings, the dwelling-houses in the west part of the city, where he was known to have had a large property, were thoroughly and faithfully searched. And beyond the city, for an extent of sixty miles throughout the adjacent towns, the most diligent inquiries were set on foot by the chief of police. And although there was some floating evidence that Dr. Parkham had been seen after he had entered into the Medical College, upon a critical examination of this evidence it was found to rest on no such data, as to time, as to secure for it any confidence. On Monday and Tuesday there was a search at the Medical College; but, while in other portions of the building the search was prosecuted with extreme thoroughness, the examination of Dr. Webster's apartments was a mere formal one—no suspicion on the part of the police then having attached to him; and such a suspicion, of course, being very unlikely, unless upon some strong grounds, to be fastened upon him by any one. On Friday, the thirtieth of November, in a vault of the privy connected with the prisoner's laboratory at the Medical College, were found certain parts of a human body answering to the description of Dr. Parkman. They consisted of a pelvis (or the hips and the portion of the body included between them) of the right thigh, from the hip to the knee, and of the left leg from the knee to the ankle; and with them were found certain towels marked with the initial of the prisoner's name, and similar to those used by him in his laboratory. On Friday evening and Saturday morning were also found in an assay furnace of the laboratory, fused with slag and cinders, a great number of fragments of human bones, and certain blocks of mineral teeth; portions of the bones fused in with the residuum of the coal, still adhering to the sides of the furnace—thus demonstrating that they had been subjected to the action of the fire in that furnace.

§ 1034. Small quantities of gold which had been melted, and other substances, including a shirt button, were also found in the same place, the details

of which will be disclosed to you by the testimony. In the course of the day on Saturday, there was found in a remote corner of the laboratory, in a place which had been noticed but not examined on the Tuesday previous, by one witness, who will state the circumstances under which he observed it, a tea-chest, containing imbedded in a quantity of tan, and covered with minerals, the thorax or chest of a human body, the left thigh, from the hip to the knee, and a hunting knife of a peculiar description. Around the bone of the thigh was tied a piece of twine or marline, with a ball of the same species of twine found in one of the private drawers of the prisoner. These remains of a human body, found in the privy and tea-chest, were subjected to the examination of competent medical and scientific men. They were put in apposition with each other, and were found to resemble, in every respect, *and in no respect to differ from*, the corresponding portions of the body of Dr. Parkman. There were missing from this human body, when thus placed in apposition, the head, the arms, the hands, the feet, and the right leg from the knee to the ankle. The evidence showed that they belonged to a person about the age of Dr. Parkman, which was sixty years.

§ 1035. The height of this body, five feet ten and a half inches, corresponded to the height of Dr. Parkman, which was precisely five feet ten and a half inches. The evidence shows that he was of a peculiar form and shape, and that this body had the same peculiarities, and that the hair on these remains was similar to his. Of the bones found in the furnace, not a fragment was discovered, which is a duplicate of any one found in the vault or tea-chest; showing, that unless there existed a miraculous coincidence, the bones found in the furnace, the parts found in the tea-chest, and the parts found in the vault, all constituted portions of one human body. There was also some evidence that some of the bones of the cranium, found in the furnace, were fractured before they had been subjected to the action of fire.

§ 1036. A block of mineral teeth was found in the furnace, resting upon the grate, so near the bottom of the furnace, that it took the current of cold air, whereby its original form was singularly preserved. This block of teeth, two accomplished dentists, Dr. Keep, and his assistant, Dr. Noble, testified, were the teeth of Dr. Parkman, made for him in 1846, upon an occasion which they distinctly remember. Dr. Keep had in his possession, and produced before the jury, an exact mould of the entire jaws of Dr. Parkman, taken at the time he had made this set of mineral teeth. By that mould it appeared that Dr. Parkman's jaws had a peculiar conformation; so peculiar, that unless through some caprice of nature, their precise counterpart could not exist. It also appeared, that these mineral teeth must have been thrown into the furnace, and subjected to the action of the fire in connection with the head. Beyond this there was exhibited to the jury the bones of the right lower jaw, found in that furnace, with the broken and serried edges, which will be put together, showing that they belonged to one and the same jaw; and the conformation of that jaw, when the fragments are thus put together, was found precisely corresponding in all its striking peculiarities with the mould of Dr. Parkman's jaw taken by Dr. Keep. The thorax found in the tea-chest exhibited a perforation as to which there was evidence tending to show that it

was a wound which penetrated between the ribs, severing a portion of the membrane that covers them, and entering the region of the heart.

§ 1037. It appeared that there had been chemical applications of strong alkalies made to these remains, as demonstrated by an accomplished chemist. The inference was, that these were not the remains of a subject for dissection in the medical college, for two reasons: one, that there was no injection of the veins with any preservative fluid, which is the invariable mode of treating such subjects there; and secondly, that all such subjects are accounted for independently of this, by the Demonstrator of Anatomy, who keeps an accurate record of them. Evidence was then introduced to show the relations subsisting between the prisoner and the deceased: beginning mainly with a loan in 1842 of money, made by Dr. Parkman to Dr. Webster. Since that time, Dr. Webster had been always embarrassed in his financial affairs, and often reduced to great straits for money. On the other hand, Dr. Parkman was a large property holder, accustomed to making loans to others. He was a liberal man in his donations, and kind, benevolent and considerate towards those whom misfortune rendered unable to meet their engagements with him. At the same time he was scrupulously just in all his business dealings, and severe in cases of any suspected imposition.

§ 1038. In 1842 he loaned the prisoner $400, for which he took his note, secured by a mortgage on certain personal property. This note was unpaid in 1847, at least not paid in full, when Dr. Parkman made one of a number to loan Dr. Webster a certain sum of money, to meet demands then pressing against him, arising out of, or connected with these transactions. Dr. Parkman, in January, 1847, took from Dr. Webster a note for $2,432, secured by a mortgage on all his personal property, including his household furniture and his cabinet of minerals. This note was for the amount of advances then made by Dr. Parkman and others, and embraced also a balance of $342 83, then due on the note of 1842. In April, 1849, a friend of Dr. Webster had an interview with Dr. Parkman, and subsequently furnished Dr. Webster a statement, showing that the amount then due to Parkman, on the mortgage note, was $456 27, while a further amount of about $600 was also due upon it to the other parties who had contributed in making the advances for which it was originally given. About this period Dr. Webster made an application to Robert G. Shaw, Esq., a brother-in-law of Dr. Parkman, to raise money, representing his necessities to be so great, that an officer was about entering his house to attach his household furniture, and offered to sell to Mr. Shaw those very minerals which were then under mortgage to Dr. Parkman. Mr. Shaw, commiserating his condition, and having no knowledge that his brother-in-law had a mortgage on the property, agreed to advance Dr. Webster the sum of $1,200. He did advance this amount, partly in cash, and partly by his note, which was discounted for Dr. Webster at the Charles River Bank: and received from Dr. Webster a clear bill of sale of the cabinet of minerals. Dr. Parkman, learning subsequently, that these minerals had been conveyed to Mr. Shaw, was greatly incensed at what he considered an act of fraud, on the part of Dr. Webster, and avowed his determination to compel him to pay his debt.

§ 1039. From this period it appeared that Dr. Parkman pursued Dr. Webster, as a creditor who felt that his confidence had been violated, and who regarded his debtor as a dishonest and fraudulent man. The evidence was, that he not only entertained this opinion, but that very recently before his disappearance he had communicated it in a message to Dr. Webster himself. It also appeared that Dr. Webster obtained further delay from Dr. Parkman, under a promise that he would pay him from the proceeds of the sales of tickets to the lectures at the Medical College.

§ 1040. Dr. Webster's connection with the Medical College was independent of his professorship in the University at Cambridge. He was a professor in both. His compensation for services in the Medical College depended upon the sale of his lecture tickets to the students. The professors had made an arrangement with a Mr. Pettee, a clerk in one of the banks in Boston, to collect for them the moneys paid for these lecture tickets. These lectures commenced on the 7th of November. On the 9th, Dr. Parkman having in view the purpose he had avowed of compelling Dr. Webster to pay his debt, and having also in his memory the promise of the latter to pay it from the proceeds of the sales of his tickets, called on Dr. Webster, and insisted on the payment. Dr. Webster stated that he had not then received the money for his tickets, and requested Dr. Parkman to wait a further period. At that time Dr. Webster had in fact received a considerable portion of his money, which had been appropriated to other purposes than the payment of his debt to Dr. Parkman.

§ 1041. There were other debts hanging over him; one of which, a note to Dr. Bigelow, one of the medical professors, for about $230, was paid from this fund. Not satisfied with his statement, Dr. Parkman, on the 12th of November, called on Mr. Pettee, the collecting agent, to ascertain what was the condition of Dr. Webster's funds in his hands. Two days afterwards he again called, and threatened a trustee process, or spoke of one to Mr. Pettee, as the only mode of getting his pay from Dr. Webster, and then sent a message by Mr. Pettee to Dr. Webster, that he considered him a dishonorable and dishonest man. On Monday evening, the 19th, after these repeated subterfuges on the part of Dr. Webster, he called on him again, and declared with some asperity that "to-morrow something must be done." On the next morning, Dr. Webster sent to Dr. Parkman a note, the contents of which did not transpire. On Thursday, the day before his disappearance, the latter rode out to Cambridge to have another interview with Dr. Webster.

§ 1042. Such were the relations of these parties on the morning of Friday the 23d of November. The one party being an incensed and, perhaps, remorseless creditor, the other a fraudulent debtor, perfectly willing to evade and dupe, but unable to pay. At about eight o'clock on that morning, Dr. Webster called at the residence of Dr. Parkman in Walnut Street, and there made an appointment for Dr. Parkman to call at the Medical College to receive his pay at half past one o'clock. He did not call at Dr. Parkman's house to pay him there, but to appoint a meeting at the Medical College at a time when his rooms would be vacated by the students, between the hours of one and two, his lecture terminating at one. About nine o'clock on that morning, Mr.

Pettee, anxious to get out of his hands the balance of money due to Dr. Webster, in consequence of Dr. Parkman's threats of a trustee process, which he wished to avoid, waited upon Dr. Webster and paid him a balance of ninety dollars, in a check on the Freeman's Bank. He then informed Dr. Webster of Dr. Parkman's repeated inquiries respecting the state of his funds, and his threats of a trustee process. Dr. Webster thereupon remarked to Mr. Pettee, "You will have no further trouble with Dr. Parkman, *for I have settled with him.*" It appeared that not one dollar of that money could have gone to Dr. Parkman, the $90 check received on the morning of the day of the disappearance, was in the prisoner's possession the next day, and was deposited by him to his own credit in the Charles River Bank.

§ 1043. Dr. Webster's lecture days were Tuesday, Wednesday, Thursday, and Friday; the longest interval during the week when his official engagements did not call him to the college, was between Friday and Tuesday. It appeared that on Friday the 23d, he remained at the college until after candle-light; that he was there on Saturday, and again on Sunday, which was unusual; that all the doors of his rooms, which ordinarily had been left unfastened when he was absent from the college, were fastened; and that the key of one door which he had kept deposited in a certain place up to that period, and to which one witness, who had occasion frequently to go to his rooms, had access, was carried away by Dr. Webster from the building; and that on Saturday, which is cleaning day in the college, the janitor who had charge of the rooms, went into Dr. Webster's back rooms and attempted to go down into the laboratory for the purpose of cleaning, when Dr. Webster ordered him out through the lecture-room door. It appeared that Dr. Webster received one of the papers containing the advertisement which has been already noticed. His relations to certain members of the family of Dr. Parkman were somewhat intimate.

§ 1044. He had been a parishioner of the Rev. Dr. Francis Parkman, a brother of the deceased. A short time previous to this event the latter visited Dr. Webster's family to perform a pastoral office of friendship, and their families had been on terms of considerable intimacy. The first disclosure that an interview had taken place between Dr. Webster and Dr. George Parkman—the first intimation of that interview received by the family, although they had been in a state of intense anxiety from the Friday previous—was made by Dr. Webster to Dr. Francis Parkman, about four o'clock on the afternoon of Sunday. The manner of making that communication was such as to excite the surprise of Dr. Francis Parkman and his family.

On the afternoon of Sunday, Dr. Webster made a similar communication, differing however in some particulars, to several other persons. Substantially his statement was, that Dr. Parkman came to the Medical College by appointment at half past one o'clock on Friday, to receive payment of his debt; that he came into the lecture-room, where Dr. Webster paid him the money, stating the precise amount; that he received it and started immediately to go out, without leaving any evidence of the note having been paid, or that the mortgage was cancelled; that, on Dr. Webster's reminding him of this, he turned back and dashed his pen over the signature on the note, telling Dr. Webster

that he would see to the cancelling of the mortgage at Cambridge; that he then went out with the money in his hand, going up the stairway two steps at a time; and that he (Dr. Webster) had no recollection of the denomination or amounts of the bills which he paid him. Some evidence was then submitted showing contradictory statements by the defendant as to the character of the notes by which the payment was made. Thursday, the 29th of November, was Thanksgiving-day. It was a week of vacation at the college, no lectures having been given after Tuesday; yet, during that week, Dr. Webster was at the college, locked into his rooms, daily, and at unusual hours. He directed that no fires should be made in his room that week, and yet he had fires kindled by himself, of a more intense heat than had ever been made there before.

§ 1045. On Tuesday, he purchased several large fish-hooks, which were afterwards found upon the premises under circumstances which probably connected them, to some extent, with the remains; they were made into a grapple, being fastened to a staff by a peculiar species of twine or marline, a ball of which was also found in one of his private drawers, and around the thigh-bone found in the tea-chest, was tied a piece of the same description of twine, the identity of which with that found upon the grapple was testified of by an expert in its manufacture. On Tuesday, Mr. Kingsley, the business agent of Dr. Parkman, went through Dr. Webster's rooms with several police officers, and Mr. Littlefield, the janitor, accompanied by Dr. Webster. The officers, when asking about the privy, were replied to by Mr. Littlefield, in the presence of Dr. Webster, that it was the private privy of Dr. Webster's, who had the key of it in his possession; that thereupon they suffered themselves to be called off from the privy by Dr. Webster to another room, they entertaining no suspicion of him, and having, indeed, already informed him that their examination was a mere matter of form.

§ 1046. It was proved that there was a fire in the assay furnace at the time, and that the tea-chest, in which the remains were found imbedded in tan, was then observed by one of the witnesses, with the minerals upon it. On Monday, Dr. Webster gave instructions to the Cambridge express man, who had always before had free access to his apartments, and had been used to deposit all the packages which he brought *inside of the laboratory*, to carry certain fagots, a box, and a bag of tan, from Cambridge to the college, and leave them in the entry *outside the door of the laboratory;* and on Wednesday the same express man, Mr. Sarvin, carried two boxes to the college, and left them in like manner, outside the door, being unable to find the key in the place where Dr. Webster had usually kept it.

§ 1047. In the course of that week, Dr. Webster, in conversation with several persons, endeavored to impress them with the belief that Dr. Parkman had been seen going over to Cambridge, after the time when it was stated by him that he had been at the Medical College, and went so far as to urge upon one of the witnesses, Mrs. Coleman, the declaration that she saw Dr. Parkman on the afternoon of Friday; she having stated to him that it was on Thursday. On Friday morning he went to a respectable mechanic in Boston, and ordered a tin box to be made very strong, in such a manner that he could solder it up himself perfectly tight; and in the course of his interview with this mechanic,

he stated that it had been discovered by certain mesmeric agencies, that Dr. Parkman's body had been carried off in a cab, and that the cab had been found saturated with blood. On Thursday, in consequence of suspicions which had been conceived in the mind of Mr. Littlefield, the janitor of the college, certain steps were taken by him to make an examination of the privy vault under the laboratory.

§ 1048. During the previous examination of the Medical College by the police officers, on Tuesday, it had been ascertained that there was no mode of access to this vault, except through the privy above, of which Dr. Webster himself kept the key. On Thursday, Littlefield attempted to open that vault, which, with the exception of Dr. Webster's private room, was the only part of the building that had not been examined, and to which there was no access save through the laboratory, where Dr. Webster himself was locked in a larger portion of the time. He commenced breaking through the wall on Thursday, and found it much more difficult than he had anticipated; he continued it, however, till he had penetrated through two or three courses of brick, there being five or six courses in all. On Friday morning he communicated his purpose to two of the professors, Drs. Jackson and Bigelow; and following up their suggestions, he continued his labor. While at work he set his wife to watch for Dr. Webster's approach to the building, and to notify him of it by a certain signal; but directed no one to disturb him if any of the professors came.

§ 1049. At one time Mrs. Littlefield having mistaken another person for Dr. Webster, gave the appointed signal, and he suspended his operations. On discovering the mistake he resumed his work, and near the close of the day, on Friday, effected an opening into that vault, and there discovered a portion of the remains. That night and the following day the discovery was followed by others of more importance, made by the police, without the aid of Mr. Littlefield; namely, the bones and mineral teeth in the furnace, and the other portions of the remains in the tea-chest. In Dr. Webster's private room were found a pair of pantaloons, marked with his name, and a pair of slippers, which, on examination by a scientific expert, were shown to have been spotted with blood. There were towels nearly new, marked with the initial letter of his name, found in the privy vault where the tide ebbed and flowed, which gave ingress to the sea, but not to any solid substance.

§ 1050. A large number of skeleton keys were found in his laboratory, fitting nearly every door in the college, which he had stated he had found in the street, and carried to his own room. There was found on his person at the time of his arrest the key of the privy; though when asked by one of the officers where that key was, he pointed to one hanging upon a nail in his private room, saying, "There it is;" which, on being tried, did not fit the lock of the privy door. After his commitment by the Police Court, he wrote a note to a member of his family, which, according to the usage at the jail, could not be sent to its destination without inspection by the proper officers; and which, upon examination, was found to contain an injunction to another member of his family, not to open a certain bundle which he had deposited with her, but to keep it just as she received it. This suggested to the police a suspicion that what he sought to conceal might be important; and a mes-

senger was immediately dispatched to his residence at Cambridge, who obtained the package. It was found to contain the two notes given by Dr. Webster to Dr. Parkman, in 1842 and 1847, and the paper, showing the amount of Dr. Webster's indebtment to Dr. Parkman, in April, 1849, with a statement of interest upon that amount in pencil, in Dr. Webster's own handwriting, which made the aggregate amount of his indebtedness the sum of $483.64.

There was also testimony tending to show that certain letters were written by the prisoner after the disappearance of Dr. Parkman, calculated to draw the public off from the Medical College to other places, and to divert public opinion in other directions.

The following passages from the medical testimony, as given to the jury, are of general interest :—

Winslow Lewis, Jr., sworn. Examined by Mr. Bemis.—I am a practising physician in this city. I was called on the Saturday afternoon succeeding Dr. Webster's arrest, to the Medical College, to examine some portions of a human body which had been found there. I found Dr. Martin Gay and Dr. Charles O. Jackson there. I was sent for by Coroner Pratt. I think I had got there at three o'clock. I called on Dr. George H. Gay and Dr. James W. Stone, to aid me in the matter; and also advised the coöperation of Professor Jeffries Wyman. We met next day, Sunday, in the morning. It was arranged that Drs. Gay and Jackson should make the necessary chemical investigations; Professor Wyman should take charge of the bones, and the articles supposed to have spots of blood on them; and Drs. Gay, Stone and myself should prepare a detailed report upon the fleshy portions of the body which we particularly examined. We accordingly drew up such a report, and made it in writing under oath, to the coroner's jury.

[The report was here produced, and read to the jury by Mr. Bemis, and explained by Dr. Lewis as he proceeded, by means of a diagram prepared by Professor Wyman. The same diagram was used in connection with Professor Wyman's testimony. It was a drawing of the human skeleton, exhibiting, by means of various coloring, the parts of the body covered with flesh, the bones found in the furnace, and the absent parts not accounted for. Questions of explanation were also asked of Dr. Lewis, as he proceeded, by the counsel for the government, in connection with different parts of the report.]

§ 1051. *Report of the Medical Committee.*—Winslow Lewis, Jr., George H. Gay, and James W. Stone, having been directed to make a post-mortem examination, at the Medical College in North Grove Street, attended to that duty December 2d, 1849, at ten o'clock A. M., and examined five portions of a human subject, viz: a thorax, a pelvis, two thighs, and a left leg. The thorax and thigh were discolored apparently with tan and some caustic substance. The three remaining ones were white, fair, and appeared as if they had been soaked in water. The cartilage on the head of the left thigh-bone was colored black.

The following is a description of the five portions separately :—

1st. *Remains of thorax*, and parts attached to it: which consisted of all the bones, except the sternum or breast bone. Fracture of the fifth right rib, apparently recent, and about four inches from the junction of this rib with the

sternum. Both clavicles and scapulæ present: the clavicles large. Both lungs present, but collapsed: left lung had pleural adhesion: structure of lungs apparently healthy. Anterior thoracic muscles, cut up from the ribs, about six inches from the centre, on each side, and with the skin thrown back: posterior portion of the integuments, from left scapula to right lumbar region, of a dark mahogany color, and hardened: remaining portions of integuments, generally of a natural appearance, except a little greenish under the right axilla (probably from commencing decomposition), and some blueness under the left axilla—leaving the skin soft, and easily broken, through artificial action exerted upon the hair and skin, as far forward as the section in the median line. An opening slightly ragged, about one and a half inches in length, under the left nipple, between the sixth and seventh ribs, extending into the cavity of the chest. Remains of thoracic aorta and thoracic œsophagus, present. Heart and diaphragm wanting. Trachea divided through cricoid cartilage. Spleen contracted, externally granulated, and internally red. Left kidney, in its natural position, and contracted. No liver, right kidney, pancreas, stomach or intestines.

Nota bene.—The right kidney, much contracted and discolored, was discovered on the next day, and given to us.

Sixteen vertebræ present—consisting of three lumbar, twelve dorsal, and the greater portion of the seventh cervical, which appeared to have been sawed through the upper part.

2d. *Pelvic portion*—consisting of the bones of the pelvis, two of the inferior lumbar vertebræ, all the integuments, muscles, organs of generation, and the pelvic viscera, generally. All the intestines remaining were about six inches of the rectum, through the anterior and external portion of which a section had been made, and the mucous coat separated from it, four or five inches, throughout the whole circumference, but not cut off at the lower end. Hair upon this portion, of a sandy gray. Both thighs severed from it in a very irregular manner. Integuments and muscles divided down to the pubis, in the median line. On placing the pelvic portion in apposition with the thoracic, the third and fourth lumbar vertebræ corresponded precisely.

§ 1052. The spinous process of the third lumbar vertebra, with a portion of the transverse processes of the same, was absent from the thoracic portion, but was found attached to the fourth lumbar vertebra which was on the pelvic portion.

3d. *Right thigh*—on being placed in apposition to the pelvic portion, the bones, muscles, and skin corresponded perfectly. Good muscular development, with but little of fatty matter. Patella attached; some ossification of femoral artery.

4th. *Left thigh*—had a string about two and a half feet long, tied just above the condyle, leaving loose ends. Patella attached. On being placed in apposition with the pelvis, the bones corresponded; but some portion of the skin and flesh appeared to have been removed, or contracted from artificial means. On the anterior surface of the thigh, and somewhat on outer parts, there were the appearances of the action of fire or some caustic matter.

§ 1053. 5th. *Left leg*—of natural appearance—fair size; and on being placed in apposition with the left thigh the articulation corresponded.

MEASUREMENTS.

	Inches.	Inches.
Thoracic portion (length)		17¼
" circumference below axilla	30	
Pelvic portion (length)		9¾
" circumference below crest of ilium	30½	
Both thighs (of the same length)		18
" circumference of the largest part of each	18¾	
Left leg (length to outer malleolus)		16
" circumference of largest part	12¾	
Total		61
Deduct distance from bottom of pelvis to top of acetabulum		3¾
		57¼
All the parts being placed in apposition, the distance from the top of the seventh cervical vertebra to the outer malleolus		57½
Difference		¼
Total length of parts discovered		57½
Distance from sole of foot to the outer malleolus on another subject		3
Distance from top of head to seventh cervical vertebra		10
Total height—five feet, ten and a half inches, or		70½

The foregoing described portions appeared to belong to a person between fifty and sixty years of age. The muscular system was well developed, and there was very little of adipose matter.

WINSLOW LEWIS, JR.
GEORGE H. GAY.
JAMES W. STONE.

Attest: J. L. ANDREWS, Secretary.

§ 1054. *Dr. Lewis, resumed.*—The head had been separated from the trunk just below what is called Adam's apple, by sawing through the upper vertebra. The external granulation or roughness of the spleen showed the application of some chemical agent; and the internal redness that the application had penetrated to the interior. All the bowels and stomach were gone. I should not think that the dissection of the thigh from the hip necessarily evinced the possession of anatomical knowledge on the part of the person dissecting this body; but think that a degree of anatomical skill would have been requisite to have separated the sternum (or breast-bone) from the collar-bone. The ossification of the artery would serve somewhat to designate the age of the subject, but not within ten years, with precision.

I had known Dr. Parkman for many years. There was nothing in these remains dissimilar from what I should have expected to find in his body.

There was nothing in the mode of separation of the parts, which indicated that it had been done for anatomical purposes; nor was there anything in the condition of the bloodvessels, which showed that it had been a subject for dissection. If it had been such a subject, I should have expected to find some of the preserving fluid, which anatomists use to inject them with. These preparations affect the color of the vessels; and I saw in these parts no such alteration in color. There is not the least doubt, that the five parts belonged to one and the same human body.

Coroner Pratt handed me a block of mineral teeth, perhaps two inches long. I kept them at my house that night; and next day, when Dr. Keep, the dentist, my neighbor, returned to town, I handed them to him.

§ 1055. *Cross-examined by Mr. Sohier.*—I had known Dr. Parkman thirty years, I should think, and quite intimately. If I had not been told that he was missing, I should not have spontaneously conceived the idea that this was his body. There were no peculiar marks, that I discovered, about the remains. The original height of the body in a case of this kind can be ascertained very nearly;—within half an inch. I could not say that the hole in the left side was a stab. It was in the region of the heart; but the muscles and flesh had been much affected by some chemical application. It was in a friable state, easy to be torn, and the opening might have been made by pushing a finger through. I could not say whether it had been made before or after death. I discovered no signs of the use of a knife: and we looked pretty carefully at the hole.

A body of the size of Dr. Parkman might contain two gallons of blood when alive; after death, perhaps two quarts might be found in the cavities. I cannot say how long it would take to consume a human head by fire in such a furnace as that in the laboratory, where the bones were found:—perhaps two hours. But this would depend upon the kind and quantity of fuel used. As to the time requisite for consuming the remaining portions of the body, it would be impossible to tell with any accuracy. There were no marks to fix the age of the subject, any nearer than I have stated, within some ten years. There was more muscular development of the lower extremities of the body than I should have expected to find, from the size of the other portions. While the upper part of the body was thin and narrow, the lower limbs were full and round, and showed that they had been well developed by exercise.

To the Attorney-General.—If the person had been stabbed through the hole in the side, he would have been more likely to bleed internally than externally. I make the statement in regard to the time requisite for burning up the head, with very great hesitation, and as worthy of but little reliance. The flow of blood from the arteries ceases very shortly after death: from the veins, in perhaps twenty-four hours.

§ 1056. *George H. Gay, sworn. Examined by Mr. Bemis.*—I signed the report which has just been read, and concur in it, generally.

§ 1057. *Woodbridge Strong, sworn. Examined by Mr. Clifford.*—I am a practising physician in this city, and have been such since 1820.

I have always given a special attention to the subject of anatomy. When I was a student (with the late Dr. Nathan Smith), I took every oppor-

tunity to practise dissection ; and, after commencing practice for myself, when not much engaged, devoted a good deal of time to the pursuit of that branch of the profession. One winter, in particular, I occupied most of my time in dissecting, sometimes continuing at it from eight o'clock in the morning till twelve at night. I have had a subject on my table for three months together. For several years I attended the hospital ; also other medical institutions ; have taken part in numerous post-mortem examinations ; and, in general, I may say, have had a good deal of taste for the study of anatomy. In the pursuit of my anatomical studies, I have had considerable experience in burning up, or getting rid of human remains by fire. When I had my office, at an early day, in Cornhill, I had poor accommodations for dissecting, and it was frequently necessary to burn up the remains of a subject. Once, in particular, I had a pirate given me by the United States Marshal for dissection ; and, it being warm weather, I wanted to get rid of the flesh and only preserve the bones. He was a muscular, stout man, and I began upon it one night, with a wood fire, in a large, old-fashioned fireplace. I built a rousing fire, and sat up all night piling on the wood and the flesh, and had not got it consumed by morning. I was afraid of a visit from the police, and by eleven o'clock they gave me a call, to know what made such a smell in the street. I finished it up, somehow, that forenoon ; but I look upon it as no small operation, to burn up a body. It needs the right sort of fuel to begin with. Wood is better than coal ; and the lighter the kind of wood the better. Pine kindlings would be good for the purpose. You need frequently to stir the fire up; and you must have something that the flesh will not quench or put out. There is always a difficulty in getting rid of human remains by fire, on account of attracting suspicion by the smell. I have been called upon by my neighbors or the police, several times, on this account.

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I never burned up a body in a furnace; but I think the intensity of the heat would be as great in a stove as in the furnace which I saw in Dr. Webster's laboratory. That appeared to me the most inconvenient place for such a purpose. The stove which I saw in the same room would have answered better. I have used a common cylinder stove, with an anthracite coal-fire, to consume human flesh when dissecting; but do not think that coal is so good a fuel as wood for that purpose. I have overloaded my fire, at times, with pieces of flesh so as to extinguish it, and have been obliged on that account to rekindle it.

Death might ensue immediately from such a wound as I supposed to have occasioned the hole, and the bleeding have been wholly internal. This might follow from the shape of the wound, which might collapse; and also by the sudden stopping of the circulation of the blood, such as would follow the cutting of the aorta.

§ 1058. *Charles T. Jackson, sworn. Examined by Mr. Bemis.*—I am a chemist by profession; have given attention to the science of chemistry and its practical application for many years. I was called to the Medical College after the discovery of the remains. I went there on Saturday afternoon, December 1st, with the late Dr. Martin Gay, and met Dr. Winslow Lewis, Jr.,

with whom we made an arrangement for conducting the examination. Dr. Gay and myself undertook the chemical part. There were shown to us parts of a human body, and the contents of a small assay-furnace, about ten inches square. The parts of the body were turned over to the other gentlemen. I am, myself, acquainted with anatomy, having had a medical education. I took some notice of the remains. I saw no indication of their having been used for anatomical purposes. I thought, also, that they indicated the possession of anatomical knowledge on the part of the person who had dissected them. The manner of opening the body, and the separation of the sternum, showed some skill on the part of the operator. The latter had been done by a clean cut. There was no hacking, also, about the thighs; they had been disarticulated neatly. I have heard the report made upon the remains by Dr. Lewis and others, and coincide generally with their conclusions.

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The time requisite for dissolving a human body by means of potash, if a suitable apparatus could be had, would depend upon circumstances. The flesh, if cut up into small pieces, and the potash boiled, might be dissolved in two or three hours. For this, it would take of potash, half of the weight of the body, I should think; and, if the whole were done at once, a very large kettle. I examined Dr. Webster's laboratory, when there, after his arrest, but with no special reference in seeing what vessels were there. The largest kettle which I saw was a tin boiler with a copper bottom, such as is used for washing clothes —some twelve or fifteen inches square. I did not see this at first, but have taken notice of it more recently. I have seen nothing larger than this about the premises. That would not have been of sufficient size to hold a body, unless it were the mere flesh all cut off from the bones, and would not admit of a thorax, or even a thigh, in its original state.

Potash would be the best substance to use in dissolving or disposing of a human body, because it could be used in common vessels. Next to this, I should think, would be nitric acid. This would require, however, a vessel of porcelain or glass, or some material which would not be acted upon by it. To dissolve a body—bones and all—in this acid, I should think it would take about an equivalent weight of acid. The difficulty or danger attendant upon such an operation, so far as the evolution of noxious vapor is concerned, would depend upon the degree of heat applied. If a gentle heat were used, very little nitrous acid gas would be given off; but if the acid were boiled, there would be a great deal. The dissolution of the body would be most rapid at a boiling temperature. The odor of this gas is very disagreeable, and noxious to health if inhaled in any quantity. I think an open vessel might be used for the purpose in question, if connected with a proper draught of a chimney. I saw no apparatus about the laboratory large enough to dissolve any considerable quantity of matter. I noticed some nitric acid, and also muriatic acid, in several bottles, by the window in the lower laboratory; but think that, altogether, there was not more than ten pounds of nitric acid.

§ 1059. I noticed when at the Doctor's apartments, on the sides of the walls, particularly on the staircase leading to the lower laboratory, green drops of fluid, and spots. They were still liquid, and stood out from the wall. I

sent and got some filtering paper, and Dr. Gay absorbed into the paper, from the walls, a quantity of this green fluid, and carried it away. Since I have had the things in my possession which Dr. Gay took from the Medical College, I have examined this paper (which I recognize), and find the green fluid to be nitrate of copper. These spots were very abundant, and extended all down the staircase, from top to bottom. They have since dried, but when I saw them were fluid.

There were also dark spots or stains on the stairs, and these green spots seemed to correspond to the stains. That is, wherever there was a spot there would be a spattering of this green fluid; and this was more abundant at the bottom, or towards the lower landing, than at the top. It had the appearance of having been spilt on each stair separately, and then of having spattered back upon the sides above; it did not seem to have been spilt at the top and then to have run down. [The witness pointed out, on the model, the locality of these spots, which had previously been called to the attention of the jury on the view.]

The nitrate of copper is a deliquescent salt, contracting moisture from the air, and will remain moist and fluid a long time. The taste is astringent, like verdigris and caustic. I have been requested to make some observations on the effect of this salt upon human blood, but have referred the subject to Dr. Wyman.

I was at the college, on Sunday afternoon, I think, when a pair of pantaloons and a pair of slippers were discovered, with what seemed to be blood on them. I told the officer who found them to keep them and hand them over to Dr. Wyman, as I considered the microscope the best means of discovering the actual presence of blood. I was there afterwards, when Dr. Wyman cut pieces from the pantaloons and slippers, which had spots on them resembling blood, for the purpose of making the examination. The punch-pieces, or pieces of copper found in the ash-hole, which appear to have been originally refuse pieces, punched in making holes at the coppersmith's, are the same article as those found new in the drawers of the back room up stairs. Those taken from the ash-hole have, undoubtedly, been used for the purpose of making nitrate of copper, as they show the action of the acid by their thinness, and still bear marks of its presence. [The witness here produced several of these pieces, of about the size of a quarter of a dollar, with the nitrate of copper still adhering to them.]

I cannot now find the pearl shirt button, though I am positive of having once seen it before it went into Dr. Gay's possession.

The quantity of gold which I found in a portion of the contents of the furnace submitted to me, was	45.6 grains.
Found by Dr. Gay	47. "
And in a piece brought to me by Mr. J. L. Andrews, Secretary of the Coroner's inquest,	81.05 "
Total	172.65 "

The market value of this gold, at four cents a grain, would be $6.94.

[The blocks of teeth afterwards testified of by Drs. Keep and Noble, were here exhibited to the witness.] The presence of fused gold is also visible in the melted mass of mineral teeth and cinders shown to me. There is a further quantity of gold to be obtained from the ashes, by a more careful sifting than I adopted. [The attention of the witness was here called again to the blocks of teeth, and he was asked to point out any indications which he could detect of the proximity of gold to the teeth when both were in a state of great heat.]

There is a pink color about the teeth, resembling that noticeable in other parts of the slag and cinders where the globules of gold were found—showing the effect, as I think, of the oxide of gold. When the gold and teeth were fused together, this oxidation took place. The bones and cinders, in the state in which they were found, showed, in other respects, the application of great heat. I should think that a piece of the natural bone is now adhering to the block.

[The sheath-knife, with silver hilt, was here exhibited to the witness.] I recognize this knife as the one I have often seen in Dr. Webster's possession, at his rooms at the old Medical College in Mason Street. I have known the Doctor for twenty-five years; attended his lectures when a medical student, and have since been in the habit of frequently calling on him. When this knife was first shown to me, at the Medical College, immediately after his arrest, it bore the appearance of having been recently cleaned. I scraped off some of the substance which had apparently been used for that purpose, and found it to be whiting, moistened with oil. The oil was still fresh, and the mixture was as soft as putty.

Dr. Parkman was about my height; I should think a little taller. I am five feet eleven inches in height.

The furnace in the laboratory would have carried off the odor of burning flesh if any had been consumed there. The draught is a strong one, and the soapstone cover fits tightly over the top.

§ 1060. *Cross-examined by Mr. Sohier.*—It was the nitrate, and not any other salt of copper, upon the wall.

If I had not heard that Dr. Parkman was missing, I should not have been led to suppose that the parts of the body were his. The thorax had not the appearance of having been boiled, but had been singed by fire. I am confident that it showed the action of fire. It did not appear to have been decomposed except where the potash had been applied; and this was on the top, the bottom, and the left side; also on the back. It is impossible to tell how long it had been subjected to the potash. The thigh, found inside of the thorax, had been exposed to the heat of fire, and also to the potash, I think. The head of the bone was smoked and the skin softened, as if by the joint action of the two.

The time it would take to dissolve a human body in nitric acid would depend on the mode in which it was cut up. If the bones were taken out and the flesh cut into fine pieces, I should think that, with the proper quantity of acid, it might be entirely dissolved in half a day, so as to become a dense, yellow liquid. The quantity of acid I should fix at the weight of the body.

We absorbed the green fluid from the walls spoken of, on Monday or Tuesday after the arrest. It was then liquid, but might have been there two weeks. The whiting which I saw on the yataghan, or sheath-knife, was close to the handle. The slag in the furnace was produced from anthracite coal. I saw a part of the ashes taken out. There were wood ashes and charcoal among them.

Direct resumed.—I omitted to mention that I have tried the experiment of applying nitrate of copper to Norway pine, such as the stairs leading to the laboratory are made of, and find that it produces a stain similar to that noticed there. [Pieces of pine thus experimented on were here submitted by the witness to the inspection of the court and jury.]

§ 1061. The following passages from the charge of CHIEF JUSTICE SHAW, are all which the limits of the present chapter will permit to be here transcribed. It may not be improper to state, however, that the law as here stated derives peculiar weight not only from the long experience and the great judicial ability of the judge by whom it was delivered, but from the fact that it was assented to by the whole of the Supreme Judicial Court of Massachusetts, whose joint views it may be held to embrace: "But, in a case of circumstantial evidence, where no witnesses can testify directly to the fact to be proved, you arrive at it by a series of other facts, which by experience we have found so associated with the fact in question, as in the relation of cause and effect, that they lead to a satisfactory and certain conclusion; as where foot-prints are discovered after a recent snow, it is certain that some animated being has passed over the snow since it fell; and from the form and number of the foot-prints it can be determined with equal certainty, whether it was a man, a bird, or a quadruped. Circumstantial evidence, therefore, is founded on experienced and observed facts and coincidences, establishing a connection between the known and proved facts, and the fact sought to be proved. The advantages are, that, as the evidence commonly comes from several witnesses, and different sources, a chain of circumstances is less likely to be falsely prepared and arranged, and falsehood and perjury are more likely to be detected, and fail of their purpose. The disadvantages are, that a jury has not only to weigh the evidence of facts, but to draw just conclusions from them; in doing which they may be led by prejudice or partiality, or by want of due deliberation and sobriety or judgment, to make hasty and false deductions; a source of error not existing in the consideration of positive evidence.

"From this view, it is manifest, that great care and caution ought to be used in drawing inferences from proved facts: it must be a fair and natural, and not a forced or artificial conclusion: as when a house is found to have been plundered and there are indications of force and violence upon the windows and shutters, the inference is that the house was broken open, and that the persons who broke open the house plundered the property. It has sometimes been enacted by positive law, that certain facts proved shall be held to be evidence of another fact; as where it was provided by statute, that if the mother of a bastard child give no notice of its expected birth, and be delivered in secret, and afterwards be found with the child dead, it shall be presumed that it was born alive and that she killed it.

"This is a forced and not a natural presumption, prescribed by positive law, and not conformable to the rule of common law. The common law appeals to the plain dictates of common experience and sound judgment; and the inference to be drawn from all the facts must be a reasonable and natural one, and, to a moral certainty, a certain one. It is not sufficient that it is probable only, it must be reasonably and morally certain.

§ 1062. "It has been sometimes said by judges that a jury ought never to convict in a case of homicide unless the dead body be found and identified. This, as a general proposition, is undoubtedly true and correct, and disastrous and lamentable consequences have resulted from disregarding the rule. But, like other general rules, it is to be taken with some qualification. It may sometimes happen that the dead body cannot be produced, although the proof of the death is clear and satisfactory. As in the case of a murder at sea, where the body is thrown overboard in a dark and stormy night, at a great distance from land or any vessel; although the body cannot be found, nobody can doubt that the author of that crime is chargeable with murder.

§ 1063. "But if the body can be found and identified, it goes conclusively to one of the facts necessary to be proved—the death of the person alleged to have been killed. Such proof is relied on in the present case. It is for the jury to judge of it.

"It appears, then, from the evidence, that after the disappearance of Dr. Parkman, and an extensive and unsuccessful search elsewhere, and after several examinations of other parts of the medical college by police officers and others, in a vault under a privy connected with the lower laboratory several limbs and a part of a human body were discovered on Friday, a week after such disappearance; and that on the next day (Saturday), on a further search in the lower laboratory, other parts of a human body were found in the furnace, in the form of bones partly calcined, and still other parts in a tea-chest covered with tan, with a covering of minerals or fossils on top of the tan. I refer to places and parts of the building familiarly, because the jury, having taken a view of the building, will easily understand these references. They will recollect that what is called the vault of the privy is, in fact, a corner only of the section of the cellar of the building, and connected with the privy above by the aperture in the seat; the whole section being entirely separated from the residue of the cellar by a solid brick wall, and including within its limits the dissecting vault, which is also walled in with its own independent walls; the privy vault having thus no separate walls of its own.

§ 1064. "Were these parts of one and the same human body, and were they so placed and disposed of as to indicate a studied or designed concealment? If they were, in fact, designedly concealed in order to keep them out of view, as the person who had a motive to conceal one part would have the same motive to conceal the others, the natural conclusion would be that all was done by the same person. If the parts did not correspond with each other, they could not have been parts of one body; they might perhaps have been the remains of anatomical subjects. Indeed, from finding parts of a dead body in or about a medical college, where the study of anatomy is pursued, a very natural im-

pression would be that they were parts of a body or of bodies used for dissection. Is this, in your judgment, negatived by the evidence?

§ 1065. "Two physicians, Dr. Wyman and Dr. Holmes, have testified as to the manner in which this body appears to have been dismembered, and are of opinion that the operation does not appear to have been performed in the manner in which it would have been by an anatomist for the purpose of demonstration. Dr. Ainsworth says that it is his business to keep an account of all subjects brought to the college for anatomical purposes; and that the institution having now the sanction of the law for being furnished with the means of obtaining subjects, it is necessary to keep an accurate record of them, and that they, in fact, do so. He also says that all subjects received at the college up to that time are accounted for without including these remains. He also testifies that it is a uniform custom, when a subject is first brought to the college, and before dissection, to prepare the body by injecting the vessels with some chemical fluid which will tend to preserve it.

§ 1066. "With a view, therefore, of ascertaining whether these remains were parts of an anatomical subject, the attention of the medical witnesses who were called to examine them was turned to the inquiry whether the vessels had been so injected, because it was said this could be ascrtained by chemical analysis. Portions of the bloodvessels were taken out and committed to the examination of Dr. C. T. Jackson, and that late eminent chemist, Dr. Gay, and to Dr. Crossley. In consequence of the lamented death of Dr. Gay, his examinations were not finished, but have since been concluded by Dr. Jackson and Dr. Crossley. They have testified that, in their opinion, the vessels of this body had not been so injected. Besides, there is evidence showing that there was a distinct vault, designed and adapted for the purpose, into which all remains of anatomical subjects were thrown, and in which these remains, if parts of an anatomical subject, would naturally have been placed.

§ 1067. "Then as to their being parts of the same body. If those portions found in the cellar, those found in the tea-chest, and the calcined portions of bone in the furnace all coincided with each other as one body, although it would not be conclusive evidence of that fact, it would be consistent with it, and not repugnant to it. This leads to the more direct and material question whether these were, in fact, the remains of Dr. Parkman.

§ 1068. "There was evidence tending to show that when these parts were brought together and laid in juxtaposition, measuring those which were found, and estimating the size of those which were missing, they corresponded in height and figure with those of Dr. Parkman. The results of this analysis and admeasurement are given in the testimony of the medical witnesses, especially of Dr. Wyman, and the report which, without objection, was submitted to you. Mr. Shaw, a relative of Dr. Parkman, who had known him long and intimately, examined these remains, and says they very much resemble those of Dr. Parkman. They corresponded in height and size, and in the color of the hair on the breast and leg, and there was nothing dissimilar about them from what he knew of Dr. Parkman, and he took charge of them as his remains.

§ 1069. "Here is one of those cases to which the rules of evidence apply, to which I called your attention in speaking of circumstantial evidence. If

this testimony had alone been relied on as proof of identity, though tending to create a strong probability, it would have left that fact still doubtful; because parts of the body are wanting, such as the head, including the features and countenance—the parts by which the identity of the person is usually established. But certainly this is not the only mode in which identity may be proved; and in this case, had there been marks upon the portions of the body found, and they could have been shown to be natural or artificial marks, existing upon the body of Dr. Parkman, they would have tended to make out that point. Then the evidence arising from the teeth is relied on; and if the proof derived from this source is of a more conclusive kind, to establish the identity of these remains, with those of Dr. Parkman, then the fact that the remains corresponded in height, figure, color, and general appearance, with the person of Dr. Parkman, though not specific and direct enough of itself to prove identity, yet being consistent with, and not repugnant to it, would, to that extent, tend to make out that point and corroborate the identification.

§ 1070. "You are next called to consider the proof arising from the remains of a set of artificial teeth, found in the furnace, as bearing on this same matter of identity.

"I have already turned your attention to the question, whether these different remains were parts of one body, and whether their condition and their situation were such as to indicate designed concealment: and, if so, whether proof of the identity arising from one portion does not tend in an equal degree, to prove the identity of the others. The fleshy portions, as well as the bones of the head and other extremities, and the artificial teeth, which we are now about more particularly to consider, were all found, as you will recollect, in the same apartment, or in the appurtenances connected with it: I mean the lower laboratory. From the furnace standing in that apartment, the coroner and the police officers, as they have told you, took out portions of bone, some partially calcined, and chiefly belonging to the head, together with parts of certain blocks of artificial mineral teeth. In the same place, intermingled with the slag, ashes, and the calcined bones, they also found a quantity of gold, so far as separated from the other substances by chemical processes, amounting to about a hundred and fifty grains.

§ 1071. "It is certainly an interesting inquiry, whether teeth under such circumstances can be identified by those who have constructed and fitted them. The investigation is, in some respects, like that of fossil remains, the study of which has led to such wonderful discoveries. Through the pursuit of comparative anatomy, such a minute and exact knowledge of the peculiarities of the lower orders of animals has been attained, that persons are able, from the examination of a single bone, to determine the character of the animal to which it belonged. This is carried still further in human anatomy; and it has been testified to you by Dr. Wyman, who has a high reputation in this branch of science, that, from a small piece of bone, it is practicable to determine the part of the head or body to which it belonged. He has exemplified this by placing together and showing, in the manner which he has particularly described to you, the connection of many of the small pieces of bone, belonging to the human head, especially the parts of the jaw, found in the furnace.

§ 1072. "In connection with a similar kind of inquiry, your attention may now be properly called to an examination of the evidence arising from the discovery of these mineral teeth. It comes mainly from Dr. Keep and Dr. Noble.

"Dr. Keep testifies, that about three years ago, he made and fitted a set of teeth for Dr. Parkman, a set for each jaw, consisting of manufactured artificial teeth, formed in combinations of three blocks to each jaw, and set upon gold plates, fitted and adjusted to the jaws. He states that several natural teeth and stumps remained, to which, as well as to the natural shape and peculiarities of the jaws, it was necessary that the plates should be adjusted and fitted. The gold had melted away; but the teeth, composed of a material not easily acted on by fire, remained, preserving more or less of their original shape. Dr. Keep had also retained, and has produced here, marked with Dr. Parkman's name, the metallic moulds in which the plates were formed.

"But it is not necessary to restate Dr. Keep's testimony particularly. The question is, whether he is able, by these means, and by his own memory, to identify them as the teeth which he fitted for Dr. Parkman. He is of opinion that he can; and he gives you the means which he used, and generally, the ground and reasons for his opinion that these are the teeth of Dr. Parkman. You will judge of their weight, and of the credit due to this testimony. If it satisfies you beyond reasonable doubt that they were the teeth worn by Dr. Parkman, it would have a strong tendency to prove the identity of the remains. You will recollect the fact that Dr. Keep saw him wearing them within a week or two of his disappearance, and the evidence arising from the condition of the teeth when they were found, tending to show that they had not been exposed suddenly to the action of heat, but that they were placed in the fire surrounded by some other substance, and heated gradually; an inference tending to prove, in connection with other circumstances, that the head was placed in the furnace with the teeth then in it.

§ 1073. "Dr. Noble was an assistant of Dr. Keep at that time, and worked on the teeth which he made for Dr. Parkman; and as far as he goes he confirms Dr. Keep. Dr. Morton was called on the other side: and on the whole, is of opinion that there is not enough in these blocks of teeth to enable a dentist who made them to identify them. Drs. Harwood, Codman, and Tucker, all dentists, are of a contrary opinion, and believe that the maker could identify such teeth. They all respectively give you the reasons for their opinions, which you will duly weigh and consider. You are to determine from all the evidence whether those were the teeth of Dr. Parkman, worn by him at the time when he entered the college, and whether they belonged to the same body, with the other remains. If you should be of opinion that they did so belong, it will have a strong tendency with the other evidence before you to prove the fact of the death of Dr. Parkman.

§ 1074. "The other positions taken by the prosecution in regard to the proof of the *corpus delicti* are, that Dr. Parkman entered the college apparently well, intending to return immediately, and take the parcel at the grocery, on his way home to his dinner; and that, if he came to his death at the college, it was not by accident or the visitation of Providence, because there would have been no motive on the part of anybody to prevent an imme-

diate knowledge of the fact, or to conceal the body. It appears to us, therefore, that proof of the *corpus delicti*, or actual death of the party by an act of violence in the present case, must depend principally upon proof of the identity of these remains. If this is not made out to the satisfaction of the jury, beyond reasonable doubt, then there is no sufficient proof that the dead body found was that of Dr. Parkman, and the proof of the *corpus delicti*, as offered by the prosecution, fails."

§ 1075. The defence taken by the prisoner's counsel—who, whatever may have been the popular feeling at the time among those who did not understand the difficulties of their position, have been shown by the subsequent developments to have discharged their most arduous task with consummate ability—was chiefly a denial of the efficiency of the commonwealth's evidence to convict, coupled, however, with the alternative that if the jury should be against them on this point, there was such evidence of provocation as to raise the question of degrees between manslaughter and murder. The prisoner, however, was convicted of murder, and immediately after conviction applied to the Executive for a rehearing, accompanying the application by a statement, in his own handwriting, in which he asseverated his innocence under the most solemn sanctions. This being denied, and the motion for a writ of error before the court having been refused, he then presented a petition for a commutation of his sentence, in which he contented himself simply with averring that the necessary ingredients of the crime of murder, viz., malice and premeditation, had never been found against him by the jury. He then proceeded to lay before the governor and council the following statement, which is of interest, so far as it throws light on the circumstantial evidence on which the conviction was had. Beyond this, however, it is entitled to very little credit.

§ 1076. *Professor Webster's Confessional Statement, as reported to the Council by Rev. Dr. Putnam.*

"On Tuesday, the 20th of November, I sent the note to Dr. Parkman, which, it appears, was carried by the boy Maxwell. I handed it to Littlefield, unsealed. It was to ask Dr. Parkman to call at my rooms on Friday the 23d, after my lecture. He had become of late very importunate for his pay. He had threatened me with a suit, to put an officer into my house, and to drive me from my Professorship, if I did not pay him. The purport of my note was simply to ask the conference. I did not tell him in it what I could do, or what I had to say about the payment. I wished to gain, for those few days, a release from his solicitations, to which I was liable every day, on occasions and in a manner very disagreeable and alarming to me, and also to avert, for so long a time at least, the fulfilment of recent threats of severe measures. I did not expect to be able to pay him when Friday should arrive. My purpose was, if he should accede to the proposed interview, to state to him my embarrassments and utter inability to pay him at present, to apologize for those things in my conduct which had offended him, to throw myself upon his mercy, to beg for further time and indulgence for the sake of my family, if not for my own, and to make as good promises to him as I could have any hope of keeping.

§ 1077. "I did not hear from him on that day or the next (Wednesday);

but I found that on Thursday he had been abroad in pursuit of me, though without finding me. I feared that he had forgotten the appointment, or else did not mean to wait for it. I feared he would come in upon me at my lecture hour, or while I was preparing my experiments for it, therefore I called at his house on that morning (Friday) between eight and nine o'clock to remind him of my wish to see him at the college at half-past one—my lecture closing at one. I did not stop to talk with him then; for I expected the conversation would be a long one, and I had my lecture to prepare for. It was necessary for me to save my time, and also to keep my mind free from other exciting matters. Dr. Parkman agreed to call on me, as I proposed.

§ 1078. "He came, accordingly, between half-past one and two. He came in at the lecture-room door. I was engaged in removing some glasses from my lecture-room table into the room in the rear, called the upper laboratory. He came rapidly down the steps and followed me into the laboratory. He immediately addressed me with great energy: 'Are you ready for me, sir? Have you got the money?' I replied, 'No, Dr. Parkman;' and was then beginning to state my condition, and make my appeal to him. He would not listen to me, but interrupted me with much vehemence. He called me 'scoundrel' and 'liar,' and went on heaping upon me the most bitter taunts and opprobrious epithets. While he was talking, he drew a handful of papers from his pocket, and took from among them my two notes, and also an old letter from Dr. Hosack, written many years ago, and congratulating him (Dr. P.) on his success in getting me appointed professor of chemistry. 'You see,' he said, 'I got you into your office, and now I will get you out of it.' He put back into his pocket all the papers, except the letter and the notes. I cannot tell how long the torrent of threats and invectives continued, and I now can recall to memory but a small portion of what he said. At first I kept interposing, trying to pacify him, so that I might obtain the object for which I sought the interview. But I could not stop him, and soon my temper was up. I forgot everything. I felt nothing but the sting of his words. I was excited to the highest degree of passion, and while he was speaking and gesticulating in the most violent and menacing manner, thrusting the letter and his fist into my face, in my fury I seized whatever thing was handiest—it was a stick of wood—and dealt him an instantaneous blow with all the force that passion could give it. I did not know, nor think, nor care where I should hit him, nor how hard, nor what the effect would be. It was on the side of his head, and there was nothing to break the force of the blow. He fell instantly upon the pavement. There was no second blow. He did not move. I stooped down over him and he appeared to be lifeless. Blood flowed from his mouth, and I got a sponge and wiped it away. I got some ammonia and applied it to his nose, but without effect. Perhaps I spent ten minutes in attempts to resuscitate him; but I found he was absolutely dead. In my horror and consternation I ran instinctively to the doors, and bolted them—the doors of the lecture-room and of the laboratory below. And then, what was I to do?

§ 1079. "It never occurred to me to go out and declare what had been done, and obtain assistance. I saw nothing but the alternative of a successful removal and concealment of the body, on the one hand, and of infamy and

destruction on the other. The first thing I did, as soon as I could do anything, was to drag the body into the private room adjoining. There I took off the clothes, and began putting them into the fire that was burning in the upper laboratory. They were all consumed there that afternoon—with papers, pocket-book, or whatever else they may have contained. I did not examine the pockets nor remove anything except the watch. I saw that, or the chain of it, hanging out; and I took it and threw it over the bridge as I went to Cambridge. My next move was to get the body into the sink, which stands in the small private room. By setting the body partially erect against the corner, and getting up into the sink myself, I succeeded in drawing it up. There it was entirely dismembered. It was quickly done, as a work of terrible and desperate necessity. The only instrument used was the knife found by the officers in the tea-chest, and which I kept for cutting corks. I made use of no Turkish knife, as it was called at the trial. That had long been kept on my parlor mantlepiece, at Cambridge, as a curious ornament. My daughters frequently cleaned it; hence the marks of oil and whiting found on it. I had lately brought it into Boston to get the silver sheath repaired.

§ 1080. "While dismembering the body, a stream of Cochituate was running through the sink, carrying off the blood in a pipe that passed down through the lower laboratory. There must have been a leak in the pipe, for the ceiling below was stained immediately around it.

"There was a fire burning in the furnace of the lower laboratory. Littlefield was mistaken in thinking there never had been a fire there. He had probably never kindled one, but I had done it myself several times. I had done it that day for the purpose of making oxygen gas. The head and viscera were put into that furnace that day, and the fuel heaped on. I did not examine that night to see to what degree they were consumed. Some of the extremities, I believe, were put in there on that day. The pelvis and some of the limbs, perhaps all, were put under the lid of the lecture-room table, in what is called the WELL, a deep sink lined with lead. A stream of Cochituate was turned into it and kept running all Friday night. The thorax was put into a similar well in the lower laboratory, which I filled with water, and threw in a quantity of potash, which I found there. This disposition of the remains was not changed until after the visit of the officers on Monday.

"When the body had been thus all disposed of, I cleared away all traces of what had been done. I took up the stick with which the fatal blow had been struck. It proved to be the stump of a large grape-vine, say two inches in diameter, and two feet long. It was one of two or more pieces which I had carried in from Cambridge, long before, for the purpose of showing the effect of certain chemical fluids in coloring wood, by being absorbed into the pores. The grape-vine being a very porous wood, was well suited to this purpose. Another longer stick had been used as intended, and exhibited to the students. This one had not been used. I put it into the fire. I took up the two notes either from the table or the floor—I think the table—close by where Dr. P. had fallen. I seized an old metallic pen lying on the table, dashed it across the face and through the signatures, and put them into my pocket. I do not know why I did this rather than put them into the fire; for I had not consi-

dered for a moment what effect either mode of disposing of them would have on the mortgage, or my indebtedness to Dr. P. and the other persons interested; and I had not yet given a single thought to the question, as to what account I should give of the objects or results of my interview with Dr. Parkman.

§ 1081. "I never saw the sledge-hammer spoken of by Littlefield, and never knew of its existence: at least, I have no recollection of it.

"I left the college to go home, as late as six o'clock. I collected myself as well as I could, that I might meet my family and others with composure. On Saturday, I visited my rooms at the college, but made no change in the disposition of the remains, and laid no plans as to my future course.

"On Saturday evening I read the notice in the Transcript, respecting the disappearance. I was then deeply impressed with the necessity of immediately taking some ground as to the character of my interview with Dr. P., for I saw that it must become known that I had such an interview, as I had appointed it, first, by an unsealed note on Tuesday, and on Friday had myself called at his house, in open day, and ratified the arrangement, and had there been seen, and probably overheard, by the man-servant; and I knew not by how many persons Dr. P. might have been seen entering my rooms, or how many persons he might have told, by the way, where he was going. The interview would, in all probability, be known; and I must be ready to explain it. The question exercised me much; but on Sunday my course was taken. I would go into Boston and would be the first to declare myself the person, as yet unknown, with whom Dr. P. had made the appointment. I would take the ground that I had invited him to the college to pay him money, and that I *had* paid him accordingly. I fixed upon the sum by taking the small note and adding interest, which it appears I cast erroneously.

"If I had thought of this course earlier I should not have deposited Pettee's check for $90 in the Charles River Bank on Saturday, but should have suppressed it, as going so far towards making up the sum which I was to profess to have paid the day before, and which Pettee knew I had by me at the hour of the interview. It had not occurred to me that I should ever show the notes cancelled in proof of the payment. If it had, I should have destroyed the large note, and let it be inferred it was gone with the missing man; and I should have only kept the small one, which was all that I could pretend to have paid. My single thought was concealment and safety. Everything else was incidental to that. I was in no state to consider my ulterior pecuniary interest. Money, though I needed it so much, was of no account with me in that condition of mind. If I had designed and premeditated the homicide of Dr. P. in order to get possession of the notes and cancel my debt, I not only should not have deposited Pettee's check the next day, but I should have made some show of getting and having the money the morning before. I should have drawn my money from the bank, and taken occasion to mention to the cashier that I had a sum to take out that day for Dr. P., and the same to Henchman, when I borrowed the $10. I should have remarked that I was so much short of a large sum I had to pay to Parkman. I borrowed the money of Henchman, as mere pocket money for the day.

§ 1082. "If I had intended the homicide of Dr. P., I should not have made

the appointment with him twice, and each time in so open a manner that other persons would almost certainly know of it. And I should not have invited him to my room at an hour when the college would have been so full of students and others, and an hour when I was most likely to receive calls from others; for that was an hour—just after the lecture—at which persons having business with me, or in my rooms, were always directed to call.

"I looked into my rooms on Sunday afternoon, but did nothing.

"After the first visit of the officers, I took the pelvis and some of the limbs from the upper well, and threw them into the vault under the privy. I took the thorax from the well below, and packed it in the tea-chest, as found. My own impression has been, that this was not done until after the second visit of the officers, which was on Tuesday; but Kingsley's testimony shows that it must have been done sooner. The perforation of the thorax had been made by the knife at the time of removing the viscera.

"On Wednesday, I put on kindlings and made a fire in the furnace below, having first poked down the ashes. Some of the limbs—I cannot remember what ones or how many—were consumed at that time. This was the last I had to do with the remains. The tin box was designed to receive the thorax, though I had not concluded where I should finally put the box. The fish-hooks, tied up as grapples, were to be used for drawing up the parts in the vault, whenever I should determine how to dispose of them. And yet, strange enough, I had a confused double object in ordering the box and making the grapples. I had before intended to send such things to Fayal; —the box to hold plants and other articles which I wished to protect from salt water and the sea air—and the hooks to be used in obtaining coralline plants from the sea. It was this previously intended use of them that suggested and mixed itself up with the idea of the other application. I doubt, even now, to which use they would have been applied. I had not used the hooks at the time of the discovery. The tan that was put into the tea-chest was taken from a barrel of it that had been in the laboratory some time. The bag of tan brought in on Monday, was not used nor intended to be used. It belonged to a quantity obtained by me a long time ago for experiments in tanning, and was sent in by the family to get it out of the way. Its being sent just at that time was accidental.

"I was not aware that I had put the knife into the tea-chest.

"The stick found in the saucer of ink was for making coarse diagrams on cloth.

"The bunch of 'filed' keys had been long ago picked up by me in Fruit Street, and thrown carelessly into a drawer. I never examined them, and do not know whether they would fit any of the locks of the college or not. If there were other keys fitting doors with which I had nothing to do, I suppose they must have been duplicates, or keys of former locks, left there by the mechanics or janitor. I know nothing about them, and should never be likely to notice them amongst the multitude of articles large and small, and of all kinds, collected in my rooms. The janitor had furnished me a key to the dissecting rooms for the admission of medical friends visiting the college; but I had never used it.

§ 1083. "The nitric acid on the stairs was not used to remove spots of blood, but dropped by accident.

"When the officers called for me on Friday, 30th, I was in doubt whether I was under arrest, or whether a more strict search of my rooms was to be had; the latter hypothesis being hardly less appalling than the former. When I found that we went over Cragie's Bridge, I thought the arrest most probable. When I found that the carriage was stopping at the jail, I was sure of my fate, and before leaving the carriage I took a dose of strychnine from my pocket, and swallowed it. I had prepared it in the form of a pill before I left my laboratory on the 23d. I thought I could not bear to survive detection. I thought it was a large dose. The state of my nervous system probably defeated its action, partially. The effects of the poison were terrible beyond description. It was in operation at the college, and before I went there; but more severely afterwards.

"I wrote but one of the anonymous letters produced at the trial—the one mailed at East Cambridge. The little bundle referred to in the letter detained by the jailer, contained only a little bottle of citric acid for domestic use. I had seen it stated in a newspaper that I had purchased a quantity of oxalic acid which it was presumed was to be used in removing blood-stains. I wished the parcel to be kept untouched, that it might be shown, if there should be occasion, what it really was I had purchased.

"I have drawn up in separate papers an explanation of the use I intended to make of the blood sent for on Thursday, the 22d, and of the conversation with Littlefield about the dissecting-vault.

"I think that Pettee, in his testimony at the trial, put too strongly my words about having settled with Dr. Parkman. Whatever I did say, of the kind, was predicated on the hope I entertained that I should be able to pacify Dr. Parkman, and make some arrangement with him; and was said in order to quiet Pettee, who was becoming restive under the solicitation of Dr. Parkman."

The petition was unsuccessful, and the defendant was executed on August 30th, 1850.

II. That the death was from violence.

1st. Poisoning.

§ 1084. (*a.*) *Measures to be taken by the prosecution when poisoning is suspected.*—There should be a careful observation of the condition of the corpse, and of the peculiar indications upon it. Here it is that the services of an experienced and capable physician are most needed.(*a*)

Everything in which the poison could have been brought to the deceased, or in which it could have been retained, must be examined. All parts of the dwelling should be searched, in reference to glasses, boxes, or papers, in which poison, or the refuse of poison, may have been placed. This search should include utensils in which medicines taken by the deceased were placed.

(*a*) See *ante*, §§ 501, 503, 514, 522, 563, 582, 622, 646, 700, 772.

The evacuations of the deceased, whether through vomiting or the stool, and particularly his urine, should be carefully preserved and tested. Arsenic, as has already been shown, frequently passes into the urine, and its presence there is a proof that the poison has entered into the system. So, also, towels or linen on which these evacuations may have dried, should be examined.

Those parts of the body through which the poison may have passed, *e. g.*, the mouth or sexual organs, and those on which it may have acted directly or by resorption, *e. g.*, the stomach or liver, should be the object of examination. Particular poisons should be looked for in the organs which they may peculiarly touch, *e. g.*, the bones, into which quicksilver and arsenic pass.

§ 1085. In view of the expected medical and chemical examination, it is necessary to carefully separate and preserve all parts of the body in which poison may be traced, so that when the chemical analysis takes place, the parts may be kept free from foreign admixtures. The stomach, liver, and spleen should be separated and kept in distinct vessels. Should this precaution not be observed, poison, which may have merely touched the mouth, may be imbibed after death by other members, *e. g.*, the liver or spleen, so as to produce the belief that the whole system was pervaded by the poison, and from this, that a very large quantity had been administered.

The vessels in which these parts of the body are placed, preparatory to examination, should be carefully cleansed, and should be closed and sealed, so as to prevent the interference of third parties. The orifices should be carefully closed so as to prevent evaporation, or the disturbance consequent on the intrusion of air.

It is important that the parts retained for examination should be as large is practicable. If only small fragments are kept, the materials for a broad analysis are narrowed, and the opportunity for a second or third examination prevented.

§ 1086. In respect to the examination several cautions should be kept in mind.

It is desirable, in the choice of experts, by whom the examination is to be made, to avoid mere neophytes, and to confine the selection to those who have kept up with the advance of science, who have the proper instruments and materials at their command (*e. g.* utensils and pure tests which can act as reagents), and who possess competent experience and skill. It is peculiarly important that the chemical examination should be committed to one who has made that department his specialty.

Much embarrassment has arisen from confusing the provinces of the physician and the chemist. According to Barse,(*b*) the cases have been frequent where there is an apparent conflict of testimony produced by the fact that the chemist, when examined on the trial, speaks from one stand-point, and the physician from another. The first is to be asked—

(1.) Whether the substance given to him to analyze contains an agent which belongs to the class of poisons :

(*b*) Manuel de la Cour d'Assizes, p. 224, as quoted by Mittermaier in his das Verbrechen der Vergiftung, &c.

(2.) What kind of poison it is:

(3.) In what quantity it exists, though it is difficult and dangerous to decide in what quantity it was originally administered:

(4.) How it may have been administered, which chemical analysis may sometimes determine as in the prosecution against the priest Maineri, where the question was whether the crime could be effected through poisoned cigars:

(5.) Whether the poison was administered purely, or in common with other agents:

(6.) Whether the substance analyzed could have come into the body through natural causes (*e. g.*, as phosphorus through food).

§ 1087. The physician's province includes more particularly the question, whether the poison in the particular case, could have produced death. With this are connected the presumptions to be drawn from the discovery of substances in the body which are used sometimes for medical purposes, sometimes for poisoning.(*c*)

(*c*) Each new examination bears out the important conclusion, *that a substance whose poisonous properties are in themselves active, may, through contact with other substances, either entirely, or in great part, lose its peculiar properties.* This may happen in various ways: (1.) When, in the case of certain sorts of poison, the poisonous substance becomes inactive by uniting with substances which either neutralize its strength or form with it insoluble compounds; though it is to be observed that some poisons become more intense upon uniting with other substances, those, for example, which, by being externally applied, facilitate the entrance of the poison into the body, or which increase the excitement of the tissues by which it is diffused through the system. (2.) When the poison, after being administered, meets with antidotal substances. This may happen when the poisoned person, either a short time before or immediately after the administration of the poison, has taken, as is often the case in food, substances which may act upon the poison so as to render it inactive. All these principles are important, not only in the investigation of the fact of poisoning, as whether the poison was the cause of death, if it appears that the union of the poison with other substances must have rendered it inactive; but also in the settlement of the question how far criminal attempt is suppposable in the case.

We subjoin a recent case which illustrates this point:—

A girl of fifteen years of age was tried before the Criminal Court of Verona, for a malicious attempt to poison her servant-woman with sulphuric acid. She mixed the poison in a glass in which some brandy was standing, which the woman was in the habit of taking before going to bed. Although the altered color of the liquid in the glass arrested the woman's attention, she nevertheless took a swallow of it, but immediately spit it out when she perceived its burning taste, as did also another woman who tried the mixture. The girl confessed her crime, at first with the declaration that she had intended to kill her servant, but afterwards that she had only wished to give her a pain in the stomach. It appeared that 83 grains of sulphuric acid and 241 grains of brandy were in the glass. According to the opinion of the experts (two chemists and two physicians), the concentrated sulphuric acid, by being mixed with the brandy, had considerably lost its strength, being in great measure converted into *acidum Halleri*, which is used as a medicine. The investigation in relation to the matter of fact hinged principally upon the inquiry how far, in the mixture of sulphuric acid with a much greater proportion of liquor, the poisonous properties of the former would be destroyed or weakened through the influence of the essential oil of the brandy. On this point there is great difference of opinion, but it is to be remarked that never before, perhaps, in the annals of medical jurisprudence, have these points been so thoroughly discussed. The effect of the time during which the poison was subjected to the action of the diluting mixture was also a point of dispute, as also the determination of the condition under which the health of the poisoned person might be injured notwithstanding that the detection of the poison was so easy, and that she must have been warned against the mixture by its offensive taste. We may notice here the importance of the *individuality* of the servant-woman, and especially whether her sense of smell was delicate; whether she was in the habit of swallowing the liquor at a draught or of drinking it with pauses; also whether she took the liquor

§ 1088. The chemical examination, to be satisfactory, must go to show that the reägents employed in the detection of the poison were pure, and contained no elements likely to deposit the poison they were employed to discover. Sometimes the presence of the poison is produced by the reägent. It is important, also, to show that the examination was adapted to the particular kind of poison which was sought. Poisons are very various in their action, some working the most energetically when they come to the stomach, some when they touch a place where the skin is removed, some at the spot they first reach, others only upon the system generally. The local effect also greatly varies. Mineral acids so disorganize the part that its whole structure is destroyed. Metallic poisons inflame and irritate, without immediately destroying the texture. Others—*e. g.*, nicotine—without perceptible changes of structure, merely operate upon the sensitive parts of the organs with which they come in contact. These points should be kept in mind in directing the examination of a chemical witness.

§ 1089. In the examination of medical witnesses, the points are more numerous. The main question is of course whether the derangement under consideration was caused by poison. This involves the consideration, (1) of the chemical examinations, (2) of the symptoms of the malady, and (3) the appearances on the corpse.

The symptoms of the malady fall within the physician's peculiar province, and have been already discussed (*ante*, § 493, &c.). On the second of these points, the journal or note-book of the physician may be brought in as corroborating evidence, though it should be remembered that a physician in large business, when he makes his notes at the close of a day in which he has made many visits, is very apt to fail in a delicate discrimination of symptoms, and is at all events, where he suspects no imposition, likely to be influenced by the talk of those surrounding the patient.

The testimony of persons attending the patient, though not in themselves experts, may be introduced as supplementary to that of the physician. It should be observed, however, that such witnesses are very easily deceived, and are apt to take strong prejudices, sometimes against the hypothesis of poisoning, either to avoid the disgrace falling on the family, or from false sympathy with the accused, sometimes from passion or excitement, or the desire to shift the blame, in favor of that hypothesis.

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oftener in the dark, or near a light where its changed appearance would put her on her guard. The theory was advanced that the attempt was made with absolutely unfit, not to say inadequate means, and hence should be classed under the head of criminal attempt in the second degree. The Criminal Court, however, laying aside this theory, took the matter-of-fact view of the case, and sentenced the accused to five years' severe imprisonment for attempt at murder by poison. The Court of Appeals of Venice, on the contrary, held that from the circumstances, the possibility of death should not be assumed, since according to the testimony of the experts, it could not have followed unless the poisonous drink had been taken in greater quantity. In this view the court acquitted the accused of attempt at murder, but condemned her to two years imprisonment, for an attempt to inflict severe bodily harm. It is to be remarked in connection with this case, how important it is in a trial for poisoning to attend to the circumstance that the original nature of the poison may become changed by the medium in which it is administered, and especially that the *time* during which it is subjected to the action of the substance used for the mixture, and of the atmospheric air, may materially alter its poisonous properties.

§ 1090. Other facts should be noticed in this connection, such as complaints of the patient as to burning in the intestines, redness of the face, sweating, which symptoms should be always noticed.

According to Mittermaier, from whose essay on the Crime of Poisoning (das Verbrechen der Vergiftung) we have reduced some of the above points, inquiries on the following topics should be submitted to the medical witnesses :—

(1.) The condition of health of the deceased at the time when the poison was administered, involving the absence of sickness or of constitutional disease capable of producing death, down to this period.

(2.) The conditions preceding the alleged poisoning, as whether the patient was in the habit of taking strong drinks, whether this occurred on the day when the disease broke out, what food he had been taking, and how far the same indications would have been produced if he had been overheated or caught cold, or had fallen into a violent passion.

(3.) Those peculiar circumstances which from their rarity and general association with poisoning are supposed to have produced the latter, *e. g.*, the sudden illness after eating or drinking of a person previously in good health. It should be observed, however, that such attacks often follow meals when the food was perfectly healthy, and that on the other hand poison in many cases does not work until some time after it has been received into the frame.

(4.) The medicines, which the patient had taken, and particularly the antidotes, must be inquired into, since poisonous substances are often introduced through the antidotes themselves.

(5.) Such circumstances as tend to show the possible agency of a natural disease, *e. g.*, cholera.

(6.) There should be a jealous scrutiny of any facts tending to show that poison may have been introduced by means of prior external and innocent applications. Madame Lacoste's case is cited by Mittermaier as an illustration of the importance of this caution. In that case the appearance of arsenic was explained by the fact that the deceased had been for some time in the habit of using externally a salve, through which it is possible the poison may have been worked in.

§ 1091. (7.) Appearances at the time of death, and changes in the corpse. Those who lay out the dead are often more observant and accurate, so far as extraordinary appearances are concerned, than casual observers. But it is not enough, to raise a rational presumption of poisoning, that the signs heretofore mentioned, *e. g.*, blotches, perforations, &c., should be noticed. These are the accompaniments of several natural diseases. On the other hand, these features should not be neglected, since there are many of them which tend to individuate the poison, as in the case of strychnine, where there is an extraordinary rigidity and long continued contraction of the muscles. The absence of these signs argue the non-administration of the particular poison.

The microscopic methods of discovering poison has been already discussed. It is not necessary to do more now than to call the practitioner's attention to them, as an important test.

§ 1092. (*b.*) *Chemical proof of the existence of poison in the stomach in sufficient quantities to have caused death, though important, is not essential to*

conviction.(*d*)—If the indictment charges poisoning, the administering of poison must be shown, either directly or inferentially. It is true that proof of the existence of poison in the body is an important item in such proof, but independently of the fact that such existence can be proved in other ways than by the absolute detection of the ingredient itself (*e. g.* by moribund appearances and peculiar pathological symptoms), the *fact* that poison was administered can be satisfactorily shown by proof of the potion being given, though there be no *post-mortem* examination at all. The case may be likened to that of a gunshot wound, received by a party on board ship, who is knocked overboard by the shock and whose body is lost. If the gun is found to have been levelled—if it is shown to have been loaded—if upon the discharge the party falls—it is not necessary to show the ball in his body, or even to prove the wound. It is true that the non-production of this species of proof can only be excused by necessity: but such necessity occasionally exists in death by poisoning, as well as death from gunshot wounds. When therefore a chemical analysis is unattainable, the rule is—as will be seen from an examination of the cases cited hereafter, particularly that of Tawell—that it is not indispensable to a conviction when there is satisfactory evidence of guilt *aliunde.*(*e*) And this rule peculiarly applies where those charged with guilt are the agents by whom the prevention of a post-mortem was effected. Hitzig gives us a pregnant illustration of this in the case of a woman in Brussels, who, in order to cause the symptoms of the projected poison to create as little surprise as possible, gave out from time to time, beforehand, that her imbecile husband, who was the intended victim, was subject to "fits," of very much the same nature as those which she expected the poison to produce. Her object, as it afterwards appeared, was to produce in his family, who saw him but rarely, the impression that this case, when it occurred, was merely a repetition of former attacks: and she followed this up by the attempt to prevent a *post-mortem.* Of course, such efforts as these, instead of *protecting* the criminal, expose him to a new and most formidable class of suspicions; for there is no *item* in indicatory evidence in cases of poisoning so strong as that which arises from an attempt to obliterate the indicia of guilt.

§ 1093. On the other hand, if it is in the power of the prosecution to produce before the court the opinion of experts as to the contents of the deceased's stomach, an omission to do this is a culpable neglect, which becomes the more mischievous from the fact that it is a general rule of law, that secondary evidence is inadmissible when primary can be obtained. And even if this strict rule does not apply to cases where, instead of an examination of the stomach, which could have been had, less positive tests are offered—and the tendency of authority is, that as a technical bar it does not—yet the defendant, who has been excluded from this opportunity by the exclusive control of the law, can with great force ask the jury to infer that had this final test been referred to, it would have demonstrated his innocence.

(*d*) This position is fully sustained in Palmer's case, to be hereafter considered, *post*, § 1110.

(*e*) See as to nature and character of post-mortem, *ante*, §§ 501–505, 515–523, 537, 646–679, 748–772, 942–962.

§ 1094. "The moral evidence from the conduct of the accused," says Mr. Wills,(*f*) from whose summary we have drawn the statement of several of the following cases, "his antipathies and other motives—his possession of the means of death, especially if unexplained by any circumstance to account for it upon an innocent hypothesis—his declarations—his falsehoods, subterfuges, and evasions to prevent examination of the body, or to induce premature interment—and many other suspicious circumstances, constitute very material parts of the *res gestæ*, and furnish a clue to the explanation of facts which would otherwise be inexplicable. It is perfectly clear that by the law of England all such facts afford a competent and relevant evidence, from which can be inferred the criminal administration of poison."

§ 1095. (*c.*) *Summary of reported cases.*—The first common law case in which the subject was minutely considered is that of John Donellan, an English gentleman of respectability, who was tried at Warwick Spring Assizes in 1781, before Mr. Justice Butler, for the murder of Sir Theodosius Boughton, his brother-in-law, a young man possessed of an estate of about two thousand pounds per annum, which, on his death without issue, descended to the defendant's wife. The evidence was, that the deceased, until the illness which resulted in his death, had been enjoying good health and spirits, his only complaint being a slight ailment, for which he occasionally took a laxative draught. The family, including Mrs. Donellan, the deceased's sister, and Lady Boughton, his mother, lived together at Lawford Hall, the family mansion.

For some time before the death of Sir Theodosius, the prisoner had on several occasions falsely represented his health to be very bad, and his life to be precarious. On the 29th of August, the apothecary sent him a mild and harmless draught, to be taken the next morning. In the evening the deceased went out fishing, and the prisoner told his mother that he had been out with him, and that he had imprudently got his feet wet, both of which representations were false. When he was called the following morning, he was in good health; and about seven o'clock his mother went to his chamber for the purpose of giving him his draught, of the smell and nauseousness of which he immediately complained, and he remarked that it smelt like bitter almonds. In about two minutes he struggled very much, as if to keep the medicine down, and Lady Boughton observed a gurgling in his stomach; in ten minutes he seemed inclined to dose, but in five minutes afterwards she found him with his eyes fixed, his teeth clenched, and froth running out of his mouth; and within half an hour after taking the draught, he died. Lady Boughton ran down stairs to give orders to a servant to go for the apothecary, who lived about three miles distant: in less than five minutes the prisoner came into the bedroom, and after she had given him an account of the manner in which Sir Theodosius had been taken, he asked where the physic-bottle was, and she showed him the two bottles. The prisoner then took up one of them, and said, "Is this it?" and being answered, "Yes," he poured out some water out of the water-bottle, which was near with the phial, and shook it, and then

(*f*) Circumstantial Evidence, 187.

emptied it into some dirty water which was in a wash hand-basin. Lady Boughton said, "You should not meddle with the bottle;" upon which the prisoner snatched up the other bottle and poured water into that also, and shook it, and then put his finger in and tasted it. Lady Boughton asked him what he was about, and said he ought not to meddle with the bottles; on which he replied that he did it to taste it, though he had not tasted the first bottle. The prisoner ordered a servant to take away the basin, the dirty things, and the bottles, and put the bottles in her hands for that purpose; she put them down again on being directed by Lady Boughton to do so, but subsequently removed them, on the peremptory order of the prisoner. On the arrival of the apothecary, the prisoner said that the deceased had been out on the preceding evening, fishing, and had taken cold; but he said nothing of the draught which he had taken. The prisoner had a still in his own room, which he had used for distilling roses; and a few days after the death of Sir Theodosius, he brought it, full of wet lime, to one of the servants to be cleaned. The prisoner made several false and inconsistent statements to the servants as to the cause of the young man's death; and on the day of his death he wrote to Sir William Wheeler, his guardian, to inform him of the event, but made no reference to its suddenness. The coffin was soldered up on the fourth day after the death. Two days afterwards, Sir William Wheeler, in consequence of the rumors which had reached him of the manner of Sir Theodosius's death, and that suspicions were entertained that he had died from the effect of poisons, wrote a letter to the prisoner requesting that an examination might take place, and mentioning the gentlemen by whom he wished it might be conducted. The prisoner accordingly sent for them, but did not exhibit Sir William Wheeler's letter, alluding to the suspicion that the deceased had been poisoned, nor did he mention to them that they were sent for at his request. Having been induced by the prisoner to suppose the case to be one of ordinary sudden death, and finding the body in an advanced state of putrefaction, the medical gentlemen declined to make the examination, on the ground that it might be attended with personal danger. On the following day, a medical man who had heard of their refusal to examine the body, offered to do so; but the prisoner declined the offer on the ground that he had not been directed to send for him. On the same day the prisoner wrote to Sir William Wheeler a letter, in which he stated that the medical men had fully satisfied the family; and endeavored to account for the event by the ailment under which the deceased had been suffering: but he did not state that they had not made the examination. Three or four days afterwards, Sir William Wheeler having been informed that the body had not been examined, wrote to the prisoner, insisting that it should be done; which, however, he prevented by various disingenuous contrivances, and the body was interred without examination. In the mean time, the circumstances having become known by the coroner, he caused the body to be disinterred and examined on the eleventh day after death. Putrefaction was found to be far advanced; and the head was not opened nor the bowels examined, and in other respects the examination was incomplete. When Lady Boughton, in giving evidence before the coroner's inquest, related the circumstance of the prisoner having rinsed the bottles, he was observed to

take hold of her sleeve, and endeavored to check her; and he afterwards told her that she had no occasion to have mentioned that circumstance, but only to answer such questions as were put to her; and in a letter to the coroner and jury, he endeavored to impress them with the belief that the deceased had inadvertently poisoned himself with arsenic, which he had purchased to kill fish. Upon the trial, four medical men—three physicians and an apothecary were examined on the part of the prosecution, and expressed a very decided opinion—mainly grounded upon the symptoms, the suddenness of the death, and the *post-mortem* appearances, the smell of the draught, as observed by Lady Boughton, and the similar effects produced by experiments upon animals—that the deceased had been poisoned with laurel-water; and one of them stated that, on opening the body, he had been affected with a biting, acrimonious taste, like that which affected him in all the subsequent experiments with laurel-water. An eminent surgeon and anatomist, examined on the part of the prisoner, stated a positive opinion that the symptoms did not necessarily lead to the conclusion that the deceased had been poisoned, and that the appearances presented upon dissection explained nothing but putrefaction. The prisoner was convicted and executed.(*g*)

§ 1097. A surgeon and apothecary, named Donnall, was tried at Launceston Spring Assizes, in 1817, before Mr. Justice Abbott, for the murder of Mrs. Elizabeth Downing, his mother-in-law. The terms on which the parties lived were such as to supply no presumption, and the only motive that could be assigned was, that the deceased was possessed of a little property, which the prisoner, who was in somewhat straitened circumstances, would receive on her death. On the 19th of October, the deceased drank tea at the prisoner's house, and returned home much indisposed, retching and vomiting, with a violent cramp in her legs, from which she did not recover for several days. On Sunday, the 3d of November, after returning from church, she dined at home on boiled rabbits, smothered with onions, and, upon the invitation of her daughter, drank tea in the evening at the prisoner's house, with a family party. The prisoner handed to the deceased cocoa and bread and butter, proceeding towards her chair by a circuitous route; and while she was drinking the second cup, she complained of sickness and went home, where she was seized with retching and vomiting, and attended with frequent cramps; and then a violent purging took place, and at eight o'clock the same morning she died. To a physician called in two or three hours before her death, he stated that she had an attack of *cholera morbus*. The nervous coat of the stomach was found to be partially inflamed, or stellated in several places, and the villous coat was softened by the action of some corrosive substance; the bloodvessels of the stomach were turgid; and the intestines, particularly near the stomach, inflamed. The contents of the stomach were placed in a jug, in a room to which the prisoner (to whom at that time no suspicion attached) had access; and it appeared that he had clandestinely tampered with those contents, by throwing them into another vessel containing a quantity of water. The prisoner proposed that the body should be interred the following Wednes-

(*g*) Wills' Circumstantial Evidence, 197.

day, assigning as a reason, for so early an interment, that, from the state of the corpse, there would be danger in keeping it longer. This representation was entirely untrue. He also evinced much eagerness to accelerate the preparations for the funeral, urging the person who had charge of it, and the men who were employed in making the vault, to unusual exertions. The physician called in to the deceased, concluded from the shortness of the illness, and the morbid appearances, that she had died from the effects of some active poison; and in order to discover the particular poison, supposed to have been used, he applied to the contents of the stomach the chemical tests of the ammoniacal sulphate of copper, or common blue vitriol and the ammoniacal nitrate of silver or lunar caustic in solution, which severally yielded the characteristic appearances of arsenic: the ammoniacal sulphate of copper producing a green precipitate, whereas a blue precipitate is formed if no arsenic be present; and the ammoniacal nitrate of silver producing a yellow precipitate, instead of a white precipitate resulting, if arsenic be not present. He stated that he considered these tests infallible, and that he had used them because they would detect a minuter portion of arsenic; on which account he considered it to be more proper for the occasion, as, from the appearance of the tests, he found there could not be much. Concluding that bile had been taken into the stomach, he mixed some bile with water and applied some tests, but found no indication of the presence of arsenic: from which he inferred that the presence of bile would not alter the conclusion which he had previously drawn Having been informed that the deceased had been eating onions, he boiled some in water; and after pouring off the water in which they were boiled, he poured boiling water over them, and left them stand for some time, after which he applied the same tests to the solution thus procured, and ascertained that it did not produce the characteristic appearances of arsenic. The witness, upon his cross-examination, admitted that the symptoms and appearances were such as might have been occasioned by some other cause than poisoning; that the reduction test would have been infallible; and that it might have been adopted in the first instance, and might also have been tried upon the matter which had been used for the other experiments. Upon his re-examination he accounted for his omission of the reduction test, by stating that the quantity of matter left after the frequent vomitings and the other experiments would have been too small, and that it would not have been so correct to use the matter which had been subjected to the preceding experiments, and that the tests he used would detect a more minute quantity of arsenic. It was clear, therefore, that no sufficient reason existed, why, if arsenic had been contained in the stomach, it had not been reproduced either by an original experiment, or experiments upon the matter to which the other tests had been applied, and that its dilution had not rendered the experiment by reduction impracticable, but only more dilatory and troublesome. It was deposed by several medical witnesses, called on the part of the prisoner, that the symptoms and morbid appearances, though they were such as might, and did commonly denote poisoning, did not exclude the possibility that death might have been occasioned by *cholera morbus* or some other disease; that the tests actually resorted to

were fallacious, and produced the same characteristic appearances upon their application to innocent matter, viz: the ammoniacal sulphate of copper producing the green, and the ammoniacal nitrate of silver producing the yellow precipitate, in being applied to an infusion of onions; and that the experiment with the bile was also fallacious, since, from the presence of phosphoric acid, which is contained in all fluids of the human body, the same colored precipitate would be thrown down by putting lunar caustic into a solution of phosphate of soda. It was to no purpose to urge that a decoction of onions was not the same thing as that particular preparation of onions of which the deceased had partaken, and that in the hands of the witness for the prosecution this experiment had been attended with a different result. The facts adduced by the prisoner's witnesses conclusively proved that the appearances, produced by the tests employed, might have been produced by some other cause than the presence of arsenic, and therefore, that they were fallacious and inconclusive, while an infallible test might have been resorted to. Mr. Justice Abbott told the jury that "these were two important questions; first, did the deceased die of poison, and if they should be of opinion that she did, then, whether they were satisfied from the evidence, that the poison was administered by the prisoner or by his means? There were some parts of the evidence which appeared to him, equally applicable to both questions, and those parts were what related to the conduct of the prisoner during the time of the opening and inspection of the body; his recommendation of a shell and the early burial; to which might be added the circumstances, not much to be relied upon, relative to his endeavors to evade his apprehension." The learned judge also said, "If the evidence as to the opinions of the learned persons who have been examined on both sides, should lead you to doubt whether you should attribute the death of the deceased to arsenic having been administered to her, or to the disease called *cholera morbus*—then, as to this question, as well as the other question, the conduct of the prisoner is most material to be taken into consideration; for he being a medical man could not be ignorant of many things, as to which ignorance might be shown in other persons; he could hardly be ignorant of the proper mode of treating *cholera morbus*—he could not be ignorant that an early burial was not necessary; and when an operation was to be performed, in order to discover the cause of the death, he should not have shown a backwardness to acquiesce in it; and when it was performing, and he attending, he could not surely be ignorant that it was material for the purposes of the investigation that the contents of the stomach should be preserved for minute examination." He continued, "the conduct of the prisoner, his eagerness in causing the body to be put into a shell, and afterwards to be interred speedily, was a circumstance most material for their consideration with reference to both the questions he had stated; for, although the examination of the body in the way set forth, and the experiments that were made, might not lead to a certain conclusion as to the charge stated, that the deceased got her death by the poison administered to her by the prisoner, yet, if the prisoner as a medical man, had been so wicked as to administer that poison, he must have known that the examination of the body would divulge it."

§ 1098. In a case reported by Mr. Wills(*h*), a woman whose name is not given by him, was tried in 1835, before the Recorder of Bristol, for the murder of a widow about 60 years of age, who was possessed of considerable property in money, and after living in lodgings in various places for several years went to live with the prisoner, who kept a lodging-house in Bristol. The evidence was, that in October, 1833, the deceased became indisposed from a cold, and in the evening of the 26th of that month, the prisoner gave her some gruel, into which she was observed by a young woman, hired to wait on the deceased, to put some pinches of yellow powder, which she stated to be to relieve her from pain, taking care, however, to afterwards twice wash her hands. She then told the servant not to take anything out of the vessels used by the deceased, falsely representing her to be dirty in her habits, and cautioned her not to tell the deceased that she had put anything in her gruel, representing that if she knew there was anything in it she would not take it. The prisoner carried away what was left of the gruel; and a few minutes after the deceased had taken it she complained of being poorly, and in half an hour became ill, vomiting, purging, and violent pain ensued, and in about two hours she expired. The prisoner had employed a man about six days previously to purchase arsenic to poison rats, a pretext which was proved to be groundless. The deceased was buried on the 28th of October, and her friends did not hear of her death until many months afterwards. From the change which took place in the prisoner's habits and mode of living immediately afterwards, from her denial that the deceased had left any property, and from some other circumstances, suspicions were excited, and the corpse was disinterred and examined on the 24th of December, 1834, and found to be in a remarkable state of preservation.

§ 1099. "The mucous membrane of the stomach and duodenum," says Mr. Wills, "was smeared very thickly with a large quantity of yellow substance, which penetrated in patches the coats of the stomach and intestines; and where the spots had penetrated, the inside of the intestinal canal was stained to a much greater extent than the outside, so that it must have penetrated from the interior to the exterior, as would be the effect of the matter having been taken into the stomach. The yellow powder found in the stomach was submitted to various experiments. Having been dried, some of it was triturated with carbonate of soda and charcoal, and introduced into a reducing tube, and immediately a volatile metallic body was formed, which was metallic arsenic; the metallic arsenic was then oxidized, when it sublimed into a white volatile oxide, which was characteristic of arsenious acid; a solution was then made of the oxide in two drops of water and a small portion of ammoniacal nitrate of silver was added, when there was formed the characteristic lemon yellow precipitate. In another portion a minute quantity of ammoniacal sulphate of copper was put, which immediately produced the green precipitate of Scheele. Afterwards a larger quantity was reduced, and a stream of sulphuretted hydrogen gas passed through it, and the original orpiment or sulphurate of arsenic reproduced. These various experiments were repeated five or six times, and uniformly with the same results. The stomach was then

(*h*) Circumstantial Evidence, 196.

washed in water, and the substance allowed to precipitate and dried up, was weighed and found to contain seventeen grains. Lastly, the animal matter was destroyed and the arsenic dissolved, and the sulphur turned into sulphuric acid and precipitated by sulphuretted hydrogen gas, which reproduced sulphuret of arsenic. From thirteen grains of the mixed matter were obtained four grains of sulphuret of the arsenic; and there was still some portions adhering to the stomach which could not be washed off; and some had been evacuated by vomiting,"(*i*) The prisoner was convicted and executed.

§ 1100. In 1831, Lucretia Chapman, otherwise called Lucretia Espos y Mina, and Lino Amalie Espos y Mina, were tried in Bucks County, Pennsylvania, before Judge Fox, the county judge, for the murder, by poisoning, of William Chapman, the former husband of the female defendant. Mrs. Chapman, which was the name that she continued to bear during the trial, notwithstanding her intermediate marriage with Mina, her co-defendant, was a woman about forty years of age, of respectable family and acquirements, a native of Massachusetts, and for many years a resident of Pennsylvania. In her earlier life she had been engaged as a teacher in one or two private schools in Philadelphia, but marrying the deceased, who was an Englishman, and who was possessed of a very successful method of curing persons having obstructions of the speech, they opened together in that city a school for this purpose, which they afterwards removed to a place called Andalusia, near the Delaware, about twelve miles north of Philadelphia. For several years before her husband's death she had assumed the main management of the institution; and the evidence showed that she had been accustomed to domineer over him with some asperity. He was then approaching sixty years of age, of good character and good habits, and possessed of generally good health. They had several children, the oldest of whom was a girl, about fifteen years old. The remaining defendant, Lino Espos y Mina, as he called himself at the time, though he had borne one or two aliases, was scarcely more than twenty-two, and made his first appearance in America, as far as could be traced, in the Philadelphia County prison, where he had been sent in 1830 for some small larcenies. After remaining there nearly a year, he was pardoned by the Governor, on a recommendation from the inspectors, chiefly induced by his own representations; and he proceeded at once—it was the month of May—to take up his journey northward on foot. Late in the evening he arrived at Mr. Chapman's house, where he knocked and begged food and lodging. Mr. Chapman at first refused to receive him, but Mrs. Chapman, who appeared to be a woman of kindly disposition so far as relieving the distressed was concerned, obtained permission for him to remain during the night. In the mean time, by a most absurd and yet showy system of lies, he succeeded in gaining the confidence of both husband and wife, and in due season the passionate attachment of both. Had his hosts possessed any discernment, or made any inquiry, they would soon have discovered the fraud; but so easy was the temper of the husband, and so infatuated was the wife, that they fell at once into toils which certainly were neither strong nor subtle. He told them that his father was

(*i*) Wills on Circumstantial Evidence, 198.

General Mina, Governor of California—that he had been educated in the city of Mexico, by a grandfather—that his mother was immensely rich, owning a gold mine—that he had been sent to Europe to travel with a physician, a friend of the family, who had died suddenly, leaving him without the means to find his way back—that he was reduced in this way to the greatest straits—that his want of education was to be attributed to the manner of his bringing up, having been over-indulged by a grandfather, himself illiterate—and that immense means were at his command, if he could only obtain a temporary home to remain at until he could hear from his friends. The cupidity of Mrs. Chapman was first appealed to by a promise of several thousand dollars, as a consideration for her teaching him English; and then, when an unnatural passion was excited in her, her duty to her husband gave way before a determination to surrender herself to the object of her infatuated desires, cost what it may. Among other tricks to enforce upon her credulity and that of her husband, he resorted to the following: He induced Mrs. Chapman to drive him to the city, for the purpose of visiting the Mexican Consul, Colonel Cuesta, a gentleman of undoubted character. He managed matters so as to obtain an invitation to dinner from the latter, using his attendance on Mrs. Chapman as a pledge of his respectability, and using his invitation to dinner to impress on Mrs. Chapman a continued belief in the accuracy of his story. Stepping into a drug store, he persuaded a gentleman there, who spoke Spanish, to write a letter for him, and giving his own name as Cuesta, he dictated, in the latter character, a letter to Mr. and Mrs. Chapman, thanking them for their kindness to his "unfortunate countryman" Don *Lino y Mina*. The result was, if the usual presumptions to be drawn from this species of circumstantial evidence were to be applied, and if Mina's subsequent declarations are to be credited, a sexual intimacy between Mina and Mrs. Chapman, which was accompanied by a change in her feelings to her husband from love to disgust and hatred. On the 16th of June, in the same year, scarcely six weeks after his first acquaintance with the family, Mina proceeded to Philadelphia, nominally on other business, but when there bought a quarter of a pound of arsenic, the object avowed by him being the preparation of birds. The next day after his return, Mr. Chapman was taken sick. At first the illness was so slight that the physician who was called in did not at the time deem it necessary to visit him again. He grew better, and on the 20th, Mrs. Chapman prepared for him some chicken soup, which she took from the kitchen to the parlor, for the purpose, as she said, of seasoning it. When the soup was taken to the parlor she and Mina were the only persons left in the room. Mr. Chapman took a small quantity, and the remainder was thrown into the yard. It was a remarkable feature in the case, that it appeared in evidence that a party of about forty ducks belonging to a neighbor, visited Mr. Chapman's yard on that day, and with the exception of four, who could not get over the fence, all died. Immediately after taking the soup Mr. Chapman grew worse, complaining of burning heat in the stomach. A friend calling and seeing him in this distressed situation, advised the calling in of a physician, which the wife resisted. On the 22d he seemed much worse, and on the evening of that day a physician was called in, but ineffectually. The next day he died. On July

5th his wife and Mina were married, though privately. The fact, however, having leaked out, and other circumstances attracting suspicion, the body was disinterred, and a chemical examination had, under the direction of Dr. J. K. Mitchell, who thus stated the result:—

"On the 22d of September, 1831, Dr. Hopkinson brought to my library, in Philadelphia, a jar containing a stomach, and about six inches of the intestine nearest the stomach, called the *duodenum*, which he told me was the stomach of Mr. Chapman, which he had disinterred somewhere on the Bristol road. In his and Mr. Clemson's presence, an examination of this stomach and intestine was made. The exterior appearance of the stomach differed much from that of the duodenum. The duodenum was nearly that of a white color, such as a healthy duodenum appears. The stomach was much darker, and had a reddish tint—it might be said to be a dark gray, tinged with red. The larger vessels of the stomach could be traced by a stronger red color, but of the same description of color. The smell of the whole was very peculiar, such as I have never before perceived. Upon consultation, we came to the conclusion that it most resembled the smell of dried Scotch herring. We proceeded then to open the stomach, which was tied at its upper orifice, a string being applied likewise to the other end of the intestine, so as to include the contents of the stomach. Upon laying open the stomach and intestines, we found them empty; there being nothing in them but a thin layer of matter, which was attached to the sides of the stomach. Through this adhesive mucus, which lined the stomach, we could, in many places, perceive the color of the lining coat, or the internal membrane of the stomach, which, wherever it showed itself, appeared of a red color. In some places the course of larger vessels than those that give the general color could be traced by a more distinct redness. It appeared as if the blood had spread from the sides of these vessels, the deepest color being in the middle line, gradually fading until the color became that of the walls of the stomach generally. Nothing appeared remarkable in the duodenum, except the pale straw-yellow color of its internal surfaces. As Mr. C. had been said to be poisoned by arsenic, and as the most usual arsenical preparation used in poisoning is not very soluble in water, I passed my finger over the whole internal lining, feeling the mucus which lined it, for the purpose of ascertaining if anything gritty could there be found. In this manner and by examination with the eye, we failed to discover any solid body or particle, in any part of the stomach or attached duodenum. As the stomach contained nothing, and as no particles of any sort could be discovered in it, the detection of arsenic or of any other poison presented a probable difficulty. It was, therefore, thought best to scrape off from the internal walls of the stomach, the viscid mucus, with which it was lined; to subject that to one method of analysis, and the solid stomach and intestines to another. In the attempt to remove the mucus, which was done with a smooth edged bone spoon, it was found in some places to be so much attached, as to bring with it the internal coat of the stomach, which appeared in some places to have been loosened from its cellular attachments to the muscular coat, by a very thin plate of what appeared to be effused blood. A little water was passed over the inner surface of the stomach after scraping, for the purpose of the

better observing its condition ; that water was added to the mucus which had been scraped off. Then the stomach appeared to be less regularly red than might have been inferred from the examination before the mucus was removed. Then there appeared many red spots, especially around the first opening of the stomach, next to the gullet, and in various parts of the stomach could be perceived dark brown patches. None of these seemed to be the effect of putrefaction, for there was no smell indicative of that process. I do not recollect anything further in the appearances of the stomach and duodenum worthy of notice. To the mucus and water already mentioned, some clear water was added, and the whole boiled in a clean Florence flask for a considerable time—everything thus treated was then thrown upon a filter. After filtration, there was left on the filter a dark brown substance, which was thrown into nitric acid (filter and all) in which the stomach and intestines were undergoing solution. The liquid which had been filtered was transparent, with a very faint amber color. Very small portions of this liquid, taken separately, were subjected to liquid tests. Sulphate of copper in solution, changed the color of that portion to which it was applied to an undecided grass green. Nitrate of silver in solution, gave brownish-yellow flocculent precipitate, which grew darker and soon lost its yellowishness. Sulphuretted hydrogen in its gaseous state, was passed through another portion, and deepened its yellow tint just perceptibly. Nearly the whole of the liquid was then subjected to the action of sulphuretted hydrogen, thrown into a capsule, heated until its yellowishness became distinctly marked, and its transparency was gone. The whole liquid was then thrown upon a filter, and from necessity left for several hours. When it was again looked at, a transparent fluid was found in the vessel beneath the filter, and on the filter was discovered a yellow substance which could not be separated from it, being in too small a quantity, and the paper not being smooth. As the quantity was too small to look for any decided result from heating it alone, it was thrown (filter and all) into the vessel in which the stomach and intestines were in a state of solution. Everything, then, which might be supposed to contain poison, remained to be looked for in the nitric acid solution. It was evaporated nearly to dryness ; heated again by nitric acid, and so on, until it was thought that the animal matter was destroyed. Water was also added to the residue, and boiled on it, until it was supposed that everything soluble had been taken up. That liquid was filtered, evaporated to dryness (I have on this point rather an indistinct recollection) and treated with lime-water. This matter was evaporated to dryness after using the lime-water, and it was presumable that if any arsenic were present, it existed in the dried mass as a salt called arseniate of lime. This was divided into three portions, each placed in the closed end of a glass tube, open at the other end. The sealed end of a tube was then placed over the flame of a spirit lamp (the dried mass was mixed with powdered charcoal, before being placed in the tubes), with a view to sublime metallic arsenic, if any there should be. The tube which was held by Mr. Clemson became covered on its internal surface for some distance above the material employed in the tube, with a black-looking matter, which an unpractised eye might readily mistake for a metal ; for, although black, it was

glistening. In conducting this experiment, and after these appearances had been observed, the sealed end cracked and opened, under the action of the spirit lamp; when Mr. Clemson, who was holding it, turned round and said, Is any one subliming arsenic in the room? The reply was, No;—and he called me to examine what the odor of the tube was, and I distinctly recognized what I believe to be the smell of the fumes of arsenic. The tube was subsequently heated where the shining black matter had lodged, and as the tube was open at both ends, a current of air was passing through it, and the arsenical smell was perceptible at the upper end. The other tubes were subsequently, and at different times, treated in the same manner, and, with the exception of the breaking, presented similar results—a black matter covering the arsenical ring, if any was there. There was no evidence to the eye that there was any arsenic there. This is a succinct history of the proceedings in my laboratory for the detection of arsenic. Previously to entering upon the search for arsenic, some tests were used for the purpose of ascertaining whether it would be proper to search for any other poison. Corrosive sublimate and tartar emetic were thus looked for, but no indication of their presence, however slight, could be discovered. That was all that was done with Mr. C.'s stomach as far as I can recollect."

Mrs. Chapman was acquitted, but Mina, who was tried separately and subsequently, was convicted and executed.

§ 1101. In 1845, a man named John Tawell, about sixty years of age, was tried at Aylesbury Spring Assizes, before Mr. Baron Parke, for the poisoning of a woman who, at a prior period, had lived as servant with him for several years, and borne him two children. Upon his desiring, however, at a subsequent period to marry, she had gone into seclusion, and had ever since received from him a regular allowance. "The prisoner was seen by a neighbor," to take Mr. Will's statement, "to enter the deceased's house, near Slough, between four and five o'clock in the afternoon of the 1st of January preceding. Between six and seven o'clock she heard a stifled scream in the deceased's house; she took a candle, and going to her own door saw the prisoner coming out of it. Fearing that her neighbor was ill, she went to the gate of a small garden which led to her house, where she met the prisoner, who seemed agitated, and could not open it, which she did for him. On getting up to the house, she found the deceased lying motionless upon the floor, her eyes fixed, foaming at the mouth, and breathing convulsively. On the table there was a bottle partly filled with porter, two tumblers, one of them half filled with porter, and the other with only a little froth in it. Medical assistance was immediately procured, and a vein was opened in the arm, from which about an ounce of blood flowed; but life was extinct. The deceased, previous to the prisoner's visit, had been in good health, and had intimated to her neighbors that she expected to see her 'old master' in the course of the day, and between six and seven o'clock she went to a neighboring tavern to procure a bottle of porter. After leaving the deceased's house, the prisoner was seen, about seven o'clock, running towards Slough, where he got into an omnibus which was proceeding towards Eaton: at some distance from that place he alighted, desiring to be set down at Hershel House, where, however, he did not call. At forty minutes

past seven the prisoner had again returned to Slough, and in two or three minutes afterwards proceeded by railway back to London. In consequence of this suspicious circumstance a communication was made from Slough, soon after the prisoner left, by means of the electric telegraph to the Paddington Station, where upon his arrival he got into an omnibus, and was watched by a police officer in plain clothes, who got up behind and acted as conductor, and traced him to the Jerusalem Coffee-house, on Cornhill, where he called about half-past nine, and from thence to a lodging-house, where he slept. On the following morning the prisoner was taken into custody, and on being told by the officer of the cause of his apprehension, declared that he had not been at Slough the preceding day. It was discovered that on the day of the deceased's death the prisoner had purchased a bottle of Scheele's prussic acid at a druggist's shop in London; that about three o'clock in the afternoon he had called at the Jerusalem Coffee-house for the purpose of leaving a great coat and parcels, for which he said he would call about half-past nine, stating that he was going to dine at the west end; that instead of doing so, however, he went by railway at four o'clock from the Paddington Station, to Slough; and that on the following morning, before his apprehension, he had purchased at the same shop where he had obtained the first quantity, a further supply of prussic acid—having, as he said, lost that which he had obtained the day before. To the officer in whose custody he was placed during the sitting of the coroner's inquest the prisoner stated that the deceased had formerly lived with him as a servant, and was a very good servant, but a very bad, unprincipled woman; that he had been in the habit of sending her money; that she had pestered him with letters, in which she had threatened to destroy herself if he did not send her some; that on the evening in question they had an altercation, in the course of which he had told her he would not allow her any more money; that she then asked him for some porter, which she went for and procured from a neighboring tavern; that she poured something into it from a phial and drank of it, and then began to throw herself about; and that he left, thinking her illness feigned, or else would have called some one. The prisoner attempted to explain his possession of prussic acid by stating that he had been in the habit of using it on account of varicose veins; but no proof was adduced that he had suffered from that cause. It was proved that the deceased had been extremely ill after drinking a part of a bottle of porter, for which the prisoner had sent her out on a preceding visit about three months before, when he paid to her her allowance. On examination of the body the day after death, the brain and viscera were found to be healthy. The odor of prussic acid was perceptible as soon as the body was opened, although no such odor had been remarked upon smelling at the mouth. No deleterious ingredients were found in the porter which remained in the bottle and glass. After a portion of the contents of the stomach had been tested for several other poisons, another portion was put into a tubulated retort, to which was added a very small quantity of dilute sulphuric acid; the retort was then placed in a sand-bath, and a portion distilled off and collected, about two drachms of which were put into a test-glass, to which a grain of green sulphate of iron was added, and when this was dissolved, a small quantity of potassa. Muriatic

acid being added to this mixture, Prussian blue instantly appeared, showing the presence of cyanogen in some form. It was stated that the presence of this fluid would prevent the sand-bath from decomposing the animal matters present in the contents; but to exclude all possibility of referring the poisonous matters to such decomposition, another portion of the contents of the stomach was distilled at a lower temperature by the water-bath, to which salt was added for the purpose of increasing the temperature, which, by that means, can be raised from 212° to 226°; when, on applying the same tests as before, Prussian blue was again found in considerable quantity. Nitrate of silver was then added to a portion of the fluid, for the purpose of separating the cyanogen it contained, when it threw down an insoluble, white precipitate, forming cyanide of silver, which being put into a small retort with a very small quantity of muriatic acid, and carefully distilled over into a cool receiver, yielded rather more than a drachm of diluted prussic acid, which, on being again treated with nitrate of silver, yielded the cyanide of silver. This precipitate could not be dissolved in cold nitric acid, but was dissolved by boiling nitric acid; and the gas produced by heating the cyanide of silver was then collected and burnt, producing a peculiar purple-colored flame, characteristic of the presence of cyanide of silver. The quantity of cyanide of silver actually obtained was 1.455 grains, very slightly contaminated with chloride of silver, amounting to a quantity which could not be collected and weighed, for which allowing .025 grain, the cyanide of silver was 1.43; and as the quantity of matter operated upon was to the contents of the stomach as 51 to 180, the latter must have contained 5.047 grains of cyanide of silver, which are equivalent to 1.042 grains of hydrocyanic or prussic acid, or 50 grains of the strength of the London Pharmacopœia—a quantity more than sufficient to destroy life. It was urged for the prisoner that the poison might have been generated from apples, of which some pulp was found in the stomach; but this subterfuge was disproved by the circumstance that prussic acid is contained only in the pips, and could not be obtained except by distillation; whereas it had been smelt on opening the body, when it was not possible that it could have been produced by distillation; and by a satisfactory experiment it was shown that from the pips of 15 apples there was obtained only an inappreciable quantity. Slight evidence was adduced of pecuniary embarrassment, and a desire to absolve himself from the burden of his allowance to the deceased was suggested as the prisoner's motive for the commission of so horrid a crime. The jury returned a verdict of guilty, and the prisoner was executed, having before his execution made a full confession of his guilt, as also that he had, as had been suspected, made a former attempt to poison the deceased by means of morphia, which he had mixed with the porter of which his unsuspecting victim had partaken, stating his motive to have been to prevent his criminal connection from becoming known to his wife, of which he lived in apprehension. The reports of criminal justice present no more satisfactory case of circumstantial evidence, whether as regards the scientific testimony or the moral facts; and all the circumstances conclusively rebutted the prisoner's crafty attempt to account for the catastrophe by self-destruction."(*v*)

(*v*) Wills' Circumstantial Evidence, §§ 180–198.

§ 1102. The prisoner's counsel pressed in this case, with great earnestness, the position that it was a rule of law, that there should be positive proof of the mode of death, and also that such a quantity of poison was found in the body of the deceased as would necessarily occasion death. Mr. Baron PARKE, however, in accordance with the views already given, told the jury, that "if the evidence satisfied them that the death was occasioned by poison, and that the poison was administered by the prisoner—if that," said his lordship, "is proved by circumstantial evidence, it is not necessary to give direct and positive proof what is the quantity which would destroy life, nor is it necessary to prove that such a quantity was found in the body of the deceased, if the other facts lead you to the conclusion that the death was occasioned by poison, and that it was knowingly administered by the prisoner. You must take this fact, just the same as all the other facts of the case, and see if you are satisfied, as reasonable men, whether the prisoner is guilty or not. The only fact which the law requires to be proved by direct and positive evidence, is the death of the party by finding the body: or when such proof is absolutely impossible, by circumstantial evidence leading closely to that result—as where a body was thrown overboard far from land—when it is quite enough to prove that fact without producing the body." In a subsequent part of his charge, the learned judge also said, "There is very reasonable evidence, supposing that to be required, which I tell you is not, that the quantity of prussic acid in the stomach amounted to one grain; and although that is not necessary to be proved, the scientific evidence shows that one grain may be enough to destroy life." In reference to the argument urged by the prisoner's counsel, that the deceased might have died *from* some sudden emotion, the learned judge said, that "it was within the range of possibility that a person might so die without leaving any trace on the brain; *they* were to judge whether they could attribute death to that cause, if they found strong evidence of the presence of poison, because they were not to have recourse to mere conjecture; that where the result of the evidence gave them the existence of a cause to which death might be lawfully attributed, they were not to *suppose* it was to be attributed to any other cause." The importance of circumstantial evidence drawn from conduct, was then recognized, and the jury were told that in considering the question, "whether or not the death was caused by prussic acid, they were not to abstain from looking at the conduct of the prisoner as part of that question; that they must look at all the circumstances in the case, and see whether the prisoner's conduct, and the thing that was in his possession would not strengthen them in the conclusion, that the scientific witnesses had properly arrived at the conclusion, that beyond all doubt in their minds, prussic acid was the cause of death;" and he added that, "when they had the fact proved beyond all mistake that prussic acid was in the stomach, they could not forget to take into consideration that this was after a violent and sudden death, for which prussic acid would account." "You must judge," said the learned baron, "of the truth of the case against a person by all his conduct taken together."

§ 1103. On the trial, in 1845, of a man named Graham, for poisoning his

wife, Mr. Baron Rolf, in his charge to the jury, dwelt with much emphasis on the indicatory evidence to be drawn from the fact that the accused was proved to have had possession of poison of the same kind with that by which the murder was effected. "Had the prisoner," said the learned judge, "the opportunity of administering the poison? that was one thing; had he any motive to do so? that was another. There was also another question, which was most important; it was, whether the party who had the opportunity of administering poison, had poison to administer? If he had not the poison, the having the opportunity became unimportant. If he had the poison, then another question arose, did he get it under circumstances to show that it was for a guilty or improper object?" The evidence by which it was attempted to trace poison to the possession of the prisoner, was, that on a certain occasion after the death of the wife, and after he himself was apprehended, the contents of the pockets of a coat, waistcoat, and trowsers, on being tested by medical witnesses, were found to contain arsenic; and that a week afterwards, another waistcoat which came into the possession of the policeman, on being examined, was also found to contain arsenic. Did that bring home to the prisoner the fact that he had arsenic in his possession in November? It was not conclusive that, because he had it in June, he had it in November. He (the learned judge) inferred from what had been stated by the medical men, that the quantity of arsenic found in the pockets of the clothes was very small. Now, if he had it in a larger quantity in November, and had used it for some purpose, being a mineral substance, such particles were likely to remain in the pockets, and finding it there in June was certainly evidence that it might have been there in larger quantity in November; but obviously, by no means conclusive, as it might have been put in afterwards. But connected with the arsenic being found in the clothes, there were other considerations which he thought were worthy to be attended to.

§ 1104. The prisoner was apprehended on the 9th of June, and he knew, long before that time, that an inquiry was going on. He was taken up, not in the clothes in which the arsenic was found, and a fortnight afterwards a batch of clothes was given up, in which arsenic was detected. Now if arsenic had been found in the clothes he was wearing, it would be perfectly certain, in the ordinary sense, that he had arsenic in his possession. But it was going a step further to say that, because arsenic was discovered in clothes of his, accessible to so many people between the time of his apprehension and their giving up, it was there when he was apprehended, and in all probability he thought it was, but that was by no means the necessary consequence. That observation was entitled to still more weight, with regard to the waistcoat last given up to the police, because it was not given up till three weeks after the prisoner was apprehended, and had been hanging in the kitchen accessible to a variety of persons. If any one had a diabolical motive or wish to excite prejudice against the prisoner, and to create a piece of evidence against him, which did not in truth exist, he had the opportunity; and the learned counsel for the defence had pointed to the fact of three pockets containing arsenic, as one which tended to show that the poison must have been placed there by some one who had overdone the thing, in trying to bring into court too much evi-

dence. These were matters which the jury must weigh very carefully. It was urged also that arsenic was used for cattle. It might be so, and it might be that the prisoner might innocently have had the arsenic. The circumstance of there being arsenic in so many pockets ought not to be lost sight of, for it could scarcely be conceived that a guilty person should be so utterly reckless as to put the poison he used into every pocket he had. One would have thought that he would have kept it concealed, or put it only in some safe place, for the immediate purpose of being used; and it was worthy of observation that it did not appear to have been put into the clothes in such a way as it would have been put had the prisoner been desirous to conceal it. The prisoner was acquitted.

§ 1105. Bernard Hartung was a merchant at Magdeburg, in the beginning of 1853, and was well known for his cultivation and his apparent business success. He had been three times married, and was now living in much comfort—though, in point of fact, laboring under great pecuniary embarrassment—with a wife to whom he was undoubtedly much attached. Coming one evening home, he found his aunt (his mother's sister), Emma Schroder, an unmarried woman of about forty, spending the evening with his wife. Tea was over, and after a little pleasant and cheerful conversation, in which they urged him to sit down to the table and eat, he got up, saying he had to go out for a few minutes but would soon be back. He returned with some cakes in his hand (baisers), of a kind which he knew his aunt was particularly fond. With a smile on his face he called for two dessert plates, and put a cake on each, one of which he placed directly opposite to his wife, and the other to his aunt. The latter tasted hers first, and remarked upon something gritty, when the wife offered to change with her, which, however, she laughingly declined. At ten o'clock the aunt returned home, and at midnight was seized with violent pains. At dawn a physician was called in, who could do nothing more than speak of the improbabilities of recovery. Hartung was sent for, but apparently questioning the reality of the danger, he went down to his counting-room, making his partner's absence the ground of excuse. At three o'clock in the afternoon, however, the condition of the sufferer was much worse—her breath became lighter; she had fallen into a comatose condition from which it was impossible to arouse her—and this news being sent to him, he at last hastened to her bedside. She was dead, having sank away in perfect calmness. He at first was overcome with a paroxysm of grief, and it was for some time before he recovered sufficiently to enable him to inquire into the circumstances of her illness. The nurse mentioned casually the cake which the deceased had eaten the previous night, which, during her illness, she had said she feared was not entirely right. Hartung did not move a single muscle. The nurse repeated the entire remark of the deceased: "Perhaps that cake was not quite right—perhaps it was poisoned." Hartung smiled compassionately, and said, "She was raving." So, indeed, all the by-standers thought. He then proceeded to examine into her effects. She was in poor circumstances, supporting herself in part by music teaching, and but a few hundred dollars were found, which were divided equally between Hartung and his two sisters, they being the heirs at law. The funeral was ordered in some haste, but this

was attributed by Hartung to the illness of a daughter of a lady lodging in the same house. In the mean time the dying statements of the deceased began to be noised about, and public suspicion rose so high, that in a few days Hartung was arrested. He opposed a bold and determined front to the officers, and indignantly demanded his discharge. He fell into the hands of a police magistrate, distinguished for his tact and experience, and it was then that a scene took place so characteristic of the present method of German procedure, that we translate it in full from the official report:—

§ 1106. It was evening. Two lights, standing in the centre of the green-covered table, lighted the office sufficiently to enable everything in it to be seen. Hartung did not know the magistrate. They saluted each other, and the magistrate, looking at him calmly but firmly in the eye, stated to him the nature of the charge as to which he was about to be examined. Hartung was unacquainted with the searching nature of the process to which he was about to be subjected, and found its solemnity and pointedness not a little oppressive. The quiet calmness with which the magistrate enumerated to him the several grounds of suspicion, threw him at last into a confusion from which he was unable to rally. The magistrate watched him narrowly, and then laid before him in a very few words the only means by which he could escape from the distressing uncertitude in which he was placed—viz: by a free and open confession to place himself right before God and man. Hartung sank under this new appeal. He could no longer retain his former threatening bearing, and he suddenly turned and asked, "To whom have I the honor to speak?" The answer paralyzed him still more, for it gave the name of an officer famous in the detection of crime and for his skilful treatment of the accused. He asked for a private interview, when the magistrate continued to inquire whether he was conscious of guilt. "In part, in part," was the agonized reply. "A partial guilt is impossible here," said the magistrate calmly. "Are you guilty of your aunt's death, or are you not guilty?" The reply was "Guilty," and the magistrate seized this moment of paroxysm to draw forth a full confession. "If you confess that you poisoned your aunt, you must give your reasons." Hartung shuddered; his pride could hardly bear this strain. "Was it your intention to have destroyed your aunt by poison?" "Yes, this was my view." "Was your motive hatred?" "No." "Did you expect to gain anything?" Hartung shuddered again, and it was with difficulty that at last he replied, "Whatever money my aunt left, I have secured—it fell to me as rightful heir." He then went on to excuse himself on the ground that his aunt was about to make a match with a person far her junior in years, whose object, evidently, was to obtain the little property of which she was possessed. He then went on to explain how he had effected the poisoning, which was by mixing arsenic with the sugar on the cake.

§ 1107. The next step was to fortify this confession by the examination of the corpse. The body seemed entirely unchanged, and all expression of pain was drawn from the countenance by the calm which succeeds death. Hartung was brought to view the body, and with the exception of a slight recoil, retained entire composure. The *post-mortem* gave the most unmistakable evidence of the presence of arsenic. In the examination of Hartung's house,

similar traces were discovered. An amount of pure arsenic was found which was enough to have poisoned half a city. Of this, however, Hartung denied all knowledge. The only answer he would give was that it was the refuse of what he had wanted in the store, and that it had been cast away there and forgotten. And at the close of the primary hearings, he solemnly purged himself of having been concerned in any prior similar violations of the law.

The suspicions, however, that had been excited against him now began to extend over a wider field. Cases of prior sudden death were enumerated within the circle of his immediate influence, and the following remarkable facts were brought to light, connecting him unmistakably with the poisoning of his second wife, under the following circumstances:—

§ 1108. In 1850, Marie Braconier, to whom he had been shortly before married, and who was then in the freshness and fulness of early womanhood, told one of her own female friends that she was troubled with an anxious presentiment arising from her husband, who was then much embarrassed in his circumstances, pressing her to consent to have her life insured. Her feelings of dread arose, not from suspicion, but from an unwillingness to unite in a step which she could scarcely understand, and which was necessarily beset with gloomy associations. She yielded, however, but scarcely had she done so, when, on a visit to her mother, she was attacked, immediately upon leaving her husband's house, with symptoms which were attributed to the then prevailing epidemic of cholera. Her strong constitution, however, surmounted the attack, and after a few days she returned home. Scarcely had she got there, when Hartung was seized, or pretended to be seized, with the premonitories of the epidemic, manifesting great fear, resorting to every palliative in his power, and finally yielding to her anxious entreaties to be put to bed. His wife devoted herself to him, never leaving his side, and it consequently fell to her lot to administer to him a broth which he induced her to join with him in drinking. Of what took place then there was no evidence, as they were alone, except that a few hours afterwards she was seized with violent pains, which shortly after ended in her death. At first, no suspicion arose. The attending physician, Dr. Niemann, signed the usual certificate that the death was occasioned by Asiatic cholera. The Insurance Company, however, whom her death so closely affected, began naturally enough to feel some curiosity when they were called upon to pay. This was increased by the extraordinary activity with which Hartung pressed for the payment. A voluminous correspondence ensued, in which they called for a post-mortem examination, which, however, he very artfully succeeded in avoiding. At last, by threats on the one hand of exposing them as a corporation which was willing to receive premiums, but not to pay losses, and partly by an appeal to his own desolate situation after all the great losses, he succeeded in obtaining a payment in full.

§ 1109. The examination into the causes of the aunt's death, however, led to a reconsideration of that of the wife. The exhumation of her remains was at last determined on. A commission was constructed for the purposes of a *post-mortem* examination, on which was placed eminent medical experts, among whom was the physician who had attended the deceased in her last moments.

Twenty months had elapsed since death, but the degree of preservation was such as to leave no question of identity. The result of the chemical examination was decisive. An amount of arsenic was found in the stomach abundantly enough to have caused her death. Strong circumstantial evidence also existed, showing the cause of the wife's first sickness to have been the same as her last. When these facts were mentioned to Hartung, he replied merely by protesting against the prejudice that had been excited against him, but denying all agency in his wife's death.

In March, 1853, his trial came on in Magdeburg, when, to the surprise of all, he pleaded not guilty to his aunt's murder, and maintained that his confession to the police-magistrate was dictated by the desire only to get rid of a harassing and protracted examination, and to bring on a speedy trial. The result was, however, unavoidable. He was convicted of his aunt's murder, and was finally executed, having made a final confession of having poisoned both his aunt and his wife.(*x*)

§ 1110. William Palmer, who was convicted in May, 1856, for the murder of John Parsons Cook, was a medical man by profession, though for several years his reputation was that of a sporting character. He was not over thirty-one years of age, and had been originally possessed of property. Gambling and horse-racing, however, had absorbed this, and in 1853, he was in such necessities as to throw himself in the market for loans on the most usurious terms. To meet these debts he had recourse to desperate expedients. His mother was a woman of considerable property. Her indorsement he forged on his notes. He insured the life of his wife for £13,000, which amount, upon her dying shortly afterwards, he obtained. Two other similar insurances were sought to be consummated by him. The first was on his brother Walter, who in like manner died shortly after the policy was secured; though here, however, the company refused to pay. The third was on a man named Bates, a sort of groom in Palmer's employment. In this case the final arrangement of the policy was intercepted by the explosion which we will now narrate.

§ 1111. At the Shrewsbury races, in November, 1855, appeared with Palmer a young man of about twenty-eight, named John Parsons Cook. Both had large stakes involved, but with different results. The "Polestar," Cook's horse, won, by which Cook received £2,000. "Chicken," Palmer's horse, was beaten, by which Palmer was utterly wrecked. He had taken immense bets, with the hope of winning enough to pay the suits on the £13,000 forged notes then pressing upon him. These bets turned against him, and exposure became imminent.

But this was not the only difficulty. Palmer had borrowed largely of Cook, who, besides his late winnings, was possessed of a fortune of about £12,000. By fair or foul means, he had obtained what purported to be Cook's signature to notes to a very large amount. Cook's sudden death could not be other than advantageous to him, in the circumstances under which he was placed. It was then, according to the prosecution, that he took measures to bring this death about.

(*x*) Der Neue Pitaval, Bd. xxi. S. 105.

§ 1112. On the 5th of November, Cook took lodgings at Rugely, the town where Palmer lived. His life had been previously dissipated, and he had been suffering much from sores in the throat, the result of venereal excesses. On the 14th of November, the day after the races, Cook and Palmer were drinking together at the inn at Shrewsbury, where, according to Palmer's statements at the time, Cook was more or less affected by liquor. Palmer, towards the end of the evening, was seen mixing some colorless liquid in the passage leading to his room, and shortly afterwards gave some brandy and water, mixed by himself, to Cook, who drank it, and immediately cried out that there was something in it—that "it burned his throat dreadfully." Palmer immediately took the glass, drank what remained, and handed it to a third person to try, who found, however, nothing left. Cook was taken soon after very sick, vomiting largely. He recovered, however, enough to be on the race-course the next day. The day after (Thursday, the 15th), he arrived at Rugely with Palmer. He continued unwell throughout that and the next day (Saturday), when Palmer gave him some coffee, after which he vomited. On Sunday, Palmer caused some broth to be made, which was given to Cook. This broth was tasted by the chambermaid at the inn, who was made by it very ill. On Saturday, Palmer sent for Mr. Bamford, a practitioner at Rugely, to give his attendance to Cook, and on Monday, he wrote to Mr. Jones, who practised at Lutterworth, telling him that Cook was sick with a bilious attack, and asking his medical services also. Certain pills, of an anti-bilious character, were given by Mr. Bamford to Palmer to be administered to Cook.

After sending for Mr. Jones, Palmer went to London on business, and returned on the evening of the same day (Monday) to Rugely. On his return, he went to a druggist, with whom he had not been in the habit of dealing, and bought three grains of strychnine. When he saw Cook, he administered to him pills which purported to have been those prescribed by Bamford. Cook had, during the day, been much better, and had been talking with his jockey and trainer. But an hour after he had taken the pills, the inn was roused by the violent ringing of his bell, and by his screams—"Murder! Christ, have mercy on my soul!" At once the servants gathered in his room, and he was found in extreme agony on his bed, beating around him with his hands, and in the highest muscular tension. His cry was that he would be suffocated, he was agonized with convulsions, and when a composing drink was given to him, he grit his teeth, and snapped at the glass and spoon. His first call, when the servants came in, was to send for Palmer. Palmer came, and remained with him until six o'clock the next morning.

§ 1113. Between eleven and twelve on that day (Tuesday) Palmer went to another druggist, and bought six grains of strychnine and a small amount of opium. At three o'clock, arrived Mr. Jones, the physician from Lutterworth, who was a personal friend of Cook's, whom he found much better. That evening, the two physicians had a consultation with Palmer, Mr. Jones declaring that the symptoms were different from those described to him by Palmer. Mr. Bamford prepared some additional pills, which were given by him to Palmer, who at night administered pills from the same box to Cook. Within an hour after taking the pills, Cook was attacked in the same way as

on the previous evening. He was in violent spasms; his breathing was almost entirely suspended; his muscular system was strung to the highest tension; and he was so rigid that when he cried to be lifted up in bed, this was found to be impossible. So great was this stiffness, that when lying with his face upwards, his back arched inwards, and only his head and heels touched the bed, they bearing his whole weight. He cried to be turned over on his side, which was done, when in a few moments he died quietly. Palmer, who was sent for immediately on the attack, arrived at once, and remained until the death.

Two days afterwards, Mr. Stevens, Cook's stepfather, came to Rugely to inquire into the circumstances. He found the body still unburied, and a certificate from Mr. Bamford was given him, to the effect that the death was by apoplexy. His suspicions were excited by his inability to find Cook's betting book; by a claim set up by Palmer against Cook's estate for £4000; by the anxiety which Palmer showed to make it appear that Cook had lately squandered away all his available funds; and by his efforts to have the body buried at the earliest moment. Mr. Stevens went at once to London, and made arrangements for a post-mortem examination. This took place at Rugely, in the presence of several medical men, Palmer being in attendance. No symptoms of disease were discovered, except the sores on the tongue which have been already mentioned, and some white granules on the lower part of the spine. With some carelessness the stomach and intestines were taken out and placed in a jar; and it was noticed, 1st, that while the operator was at work he received a push, communicated, apparently, through Palmer, which produced some disarrangement; and 2d, that the jar was afterwards removed by Palmer towards the door, ostensibly for the purpose of greater convenience, and was then found with two cuts through the parchment which had been placed over its mouth. It is clear, however, that its contents had not been tampered with, though it was in evidence that Palmer told the boy who was employed to drive Mr. Stevens and the jar to the station, that he would give £10 to see the jar upset. Such was the evidence of the prosecution, though on cross-examination the witness who testified to the last point seemed to leave it uncertain whether it was Stevens or the jar whom Palmer so much desired to see thus disposed of.

§ 1114. The stomach and intestines were analyzed by Dr. Taylor, an eminent toxicologist of London, and the author of a work on medical jurisprudence frequently cited in this volume. The result was that a little antimony was discovered, but no strychnine or prussic acid. Dr. Taylor and Mr. G. Owen Rees certified accordingly, adding that it was "now impossible to say whether any strychnine had or had not been given just before death, but that it is quite possible for tartar emetic to destroy life if given in repeated doses; and so far as we can at present form an opinion, in the absence of any natural cause of death, the deceased may have died from the effects of antimony, in this or some other form." When Dr. Taylor, however, became acquainted with the symptoms, he changed his opinion, holding, as subsequently advised, that the death was produced by strychnine.

So great was the local excitement, that Parliament, at Lord Campbell's

suggestion, passed a bill transferring the venue to the Metropolitan Court of the Old Bailey, in London. The case came on for trial on May 14th, 1856, before Lord Campbell, C. J., Mr. Baron Alderson, and Mr. Justice Cresswell. For the crown appeared Sir Alexander Cockburn, Attorney-General, and Mr. E. James, Q. C. The leading counsel for the defence was Mr. Sergeant Shee, who managed his case with remarkable boldness and skill, though, owing to the English practice, which forbids a personal conference between counsel and witnesses, with an occasional inaccuracy of statement which produced the appearance of a want of reality, very damaging to the prisoner. The main strain of the trial was on the question whether the non-detection of strychnine in the remains was to be conclusive. Testimony, though not of the highest order, was adduced by the prisoner to prove that it was. On the other hand, the crown produced very high authorities to show that strychnine acts by absorption into the blood, from whence it passes into the nervous system; that it exhibits itself peculiarly and distinctively by a violent spasmodic convulsion and rigidity of the muscles, particularly those of the chest; that death is finally produced by suffocation; and that as only the excess of poison beyond what is necessary to produce death remains in the stomach, no trace is to be found when only the minimum dose is given. That Palmer was acquainted with the way in which the poison acts was evident from the fact of a note-book of his being found in which the page was turned down at a point containing a description of death by strychnine.

§ 1115. From Lord Campbell's charge to the jury we extract the following important passages:—

"The next witness is Charles Newton." Having read the evidence of this witness, and his deposition before the coroner, his lordship said: "This is the evidence of Newton, a most important witness. It certainly might be urged that he did not mention the furnishing of strychnia to Palmer on the Monday night before the coroner; he did not mention it until Tuesday morning, when he was coming up to London. That certainly requires consideration at your hands; but then you will observe that in his deposition, which has been read to you, although there is an omission of that, which is always to be borne in mind, there is no contradiction of anything which he has said here. Well, then, you are to consider what is the probability of his inventing this wicked lie—a most important lie, if lie it be. He had no ill-will towards the prisoner at the bar; he had never quarrelled with him, and had nothing to gain by injuring him, much less by betraying him to the scaffold. I cannot see any motive that he could have for inventing a lie to take away the life of the prisoner. No inducement was held out to him by the crown; he says himself that no inducement was held out to him, and that at last he disclosed this circumstance from a sense of duty. If you believe him, his evidence is very strong against the prisoner at the bar. But we will now turn to the next witness, Charles Joseph Roberts, whose evidence is closely connected with that of Newton." Having read the evidence of Roberts, Mr. Hawkins's assistant, who stated that on the Tuesday he sold to the prisoner, at his master's shop, six grains of strychnia, his lordship continued: "This witness was not cross-examined as to the veracity of his testimony, nor is he contradicted in any

way. It is not denied that on this Tuesday morning the prisoner at the bar got six grains of strychnia from Roberts. If you couple that with the statement of Newton—believing that statement—you have evidence of strychnia having been procured by the prisoner on the Monday night before the symptoms of strychnia were exhibited by Cook, and, by the evidence of Roberts, undenied and unquestioned, that on the Tuesday six grains of strychnia were supplied to him. Supposing you should come to the conclusion that the symptoms of Cook were inconsistent with death by strychnia—if you think that his symptoms are accounted for by merely natural disease—of course the strychnia obtained by the prisoner on the Monday evening and the Tuesday morning would have no effect; but if you should think that the symptoms which Cook exhibited on the Monday and Tuesday nights are consistent with strychnia, then a case is made out on the part of the crown. After the most anxious consideration, I can suggest no possible solution of the purchase of this strychnia. The learned counsel for the prisoner told us in his speech that there was nothing for which he would not account. The learned counsel did not favor us with the theory which he had formed in his own mind with respect to that strychnia. There is no evidence, there is no suggestion, how it was applied, what became of it. That must not influence your verdict, unless you come to the conclusion that the symptoms of Cook were consistent with death by strychnia. If you come to that conclusion, I should shrink from my duty, I should be unworthy to sit here, if I did not call your attention to the inference that if Cook did die from strychnia, that strychnia was administered by the prisoner at the bar."

§ 1116. "It appeared that, in the middle of November, Palmer was involved in pecuniary difficulties of the most formidable nature; that Cook, the deceased, by winning a race, became master of at least £1,000; and there is evidence from which the inference may be drawn that the prisoner formed the design of appropriating that money to his own use. That he did appropriate the money to the payment of debts for which he alone was liable, and, if Cook had survived, the fraud must have been exposed. Upon the important question of whether Cook died from natural disease or from poison we have the evidence of Sir B. Brodie, and of other most honorable and skilful men, who say that in their opinion he did not die from natural disease, as they know of no natural disease which will account for the symptoms attending his death, and many say that they believe the symptoms exhibited by him were the symptoms of strychnine. All we know respecting strychnine not being in the body is that in that part of the body which was analyzed by Dr. Taylor and Dr. Rees they found none. Witnesses of great reputation, Dr. Christison amongst the number, have said where strychnine has been administered under certain circumstances they should not expect that it would be found; and you have the evidence of Dr. Taylor and Dr. Rees that, having experimented upon animals certainly killed by strychnine, no strychnine was to be discovered. It is asserted, too, that there are instances in which a greater space of time elapsed than in this case between the administration of the poison, if poison was administered, and the appearance of the symptoms."

Mr. Sergeant Shee.—"I do not think those instances were proved, my lord."

§ 1117. Lord Campbell.—"There are instances in the books which, it has been agreed on both sides, should be referred to in the course of the trial; there are instances recorded by medical writers, and spoken of in the evidence I have read, in which a longer time has elapsed. With regard to no blood having been found in the heart, the result of the evidence seems to be, when death is produced by contraction of the respiratory organs, causing asphyxia, blood is found in the heart; but when it is produced by a spasm in the heart itself, the heart contracts, and the blood is expelled, so that after death no blood is found in it. He then drew attention to the evidence that the deceased had been tampered with by having something put into his brandy and water, broth, &c., the absence of any satisfactory explanation for his having bought strychnine, and the behavior of the prisoner after the death. He said, the answer consists of two parts, first, the medical evidence, and, secondly, the evidence as to facts. With regard to the medical witnesses on the part of the prisoner, I must observe that, although there were amongst them gentlemen of high honor, consummate integrity, and profound scientific knowledge, who came here with a sincere wish to speak the truth, there were also gentlemen whose object was to procure an acquittal for the prisoner. On the evidence of Dr. Nunneley, he said, you recollect the manner in which he gave it, and you must form your own opinion as to the weight to be attached to it. Certainly he seemed to display an interest not quite becoming a witness in a court of justice, but you will give every attention to the facts to which he refers, and to the evidence he gives. He differs very materially in general opinion from several of the witnesses examined on the part of the prosecution, especially in the statement that there is no extraordinary rigidity of body after death from tetanus, a point which is clearly of considerable importance in coming to a conclusion as to the cause of Cook's death." His lordship next read Mr. Herapath's evidence, and, at the close of it, remarked: "Mr. Herapath is a very distinguished chemist, and, no doubt, says what he sincerely thinks. He is of opinion that where there has been death by strychnine, strychnine ought to be discovered. But he seems to have intimated an opinion that the deceased in this very case died by strychnine, and Dr. Taylor did not use proper means to discover it." The learned judge then read the evidence of Mr. Rogers, who agreed with Dr. Herapath as to the possibility of detecting the poison. "There is no reason to doubt," his lordship continued, "that this witness does sincerely entertain the opinion he expresses. According to these witnesses, where strychnine exists, even mixed with impure matter, it should be discovered by skilful experimenters using the proper tests. Dr. Letheby also speaks sincerely, according to his experience; but I must say that cases of this kind seem to vary very much. There are cases which are, as this witness says, exceptional, and among them he mentions that of the lady at Romsey. The fair result would, probably, be that enough is not known of cases of this kind for us to be aware of all their varieties, and where there is a strong probability that strychnine has been administered, any peculiarity in the symptoms would not be anything like conclusive evidence to rebut that

probability. The evidence of Mr. Ross, on a case that occurred in the London Hospital, proved that case to be one of tetanus from wounds, of which there was no appearances on the body of Cook. We now come to the evidence of Dr. Wrightson, who, you will remember, had been a pupil of Liebig, at Giessen, and is at present a teacher of chemistry in a medical school at Birmingham. This witness, who, I have do doubt, is a most scientific and honorable man, has stated that, assuming a man to have been poisoned by strychnine, he should expect to find traces of the poison in the stomach within five or six days after death; but he gave his testimony with that caution which is never so proper and becoming as in treating on questions of science." The evidence of Professor Partridge and of Mr. Gay was then read; and the case described by the last witness, the judge characterized as clearly one of traumatic tetanus. "Dr. Macdonald had gone the length of introducing a new term of disease, 'epilepsy with tetanic complications,' and the jury would have to determine what weight they would attach to this evidence as compared with the medical testimony adduced by the Crown. Dr. Robinson thought that, putting aside the assumption of death by strychnia, Cook may have died of epilepsy; but, on being asked by the Attorney-General, whether all the symptoms spoken to by Mr. Jones were not indicative of death by strychnia, he at once replied: 'They certainly are.' Dr. Richardson, who appears," said the judge, "a very respectable witness, was next examined, and was the first to suggest the theory that Cook may have died of angina pectoris. You will have to determine whether Cook's symptoms were or were not consistent with death by strychnia. I do not say that on that fact alone you should find a verdict against him; but this I say, that it will be your duty to consider the fact in connection with other evidence that has been brought before you, in order that you may come to a clear conclusion as to whether this was a death by strychnia, and, if so, whether the prisoner at the bar was the man who administered it to the deceased. After Dr. Richardson had given his evidence, Dr. Wrightson was recalled, and, in reply to a question put to him by the counsel for the Crown, stated, that if a minimum dose to destroy life were given, and a long interval elapsed before death, the more complete would be the absorption and the less the chance of finding the poison in the stomach."

§ 1118. Mr. Sergeant Shee.—"He added, my lord, that he should still expect to find it in the spleen, liver, and blood."

Lord Campbell.—"You are quite right; he certainly did say so, and you have done well in calling attention to the statement." The learned judge then read, without comment, his notes of the evidence given by Catherine Watson and Oliver Pemberton, and added: "This is the close of the medical testimony adduced on behalf of the prisoner."

§ 1119. The evidence of Matthews, Myatt, Sergeant, and Jeremiah Smith, was then recalled to the attention of the jury, and the facts of the proposal to insure the life of Bates for £10,000; Bates being at that time superintending the stables of the prisoner, and living in lodgings for which he paid only 6*s.* 6*d.* a week. Referring to Smith, the learned lord remarked: "Of his credit you are the judges. His evidence would be material as to what took place on the evening of Monday, because it would show that the pills which

Cook took that night were taken as they were prepared by Bamford, and before the prisoner at the bar could have had any opportunity of substituting others for them. The evidence as to what took place on the Tuesday night, remains exactly as it stood at the conclusion of the case for the Crown."

At the close of the charge—

Mr. Sergeant Shee interposed: "The question which your lordship has submitted to the jury, is, whether Cook's symptoms were consistent with death by strychnia. I submit—"

Lord Campbell.—"That is not the question which I have submitted to the jury; it is a question. I have told them, that, unless they consider the symptoms consistent with death by strychnia, they ought to acquit the prisoner."

Mr. Sergeant Shee.—"It is my duty not to be deterred by any expression of displeasure; it is my duty to a much higher tribunal than even your lordships', to submit what occurs to me to be the proper question. I submit to your lordships that the question, whether Cook's symptoms are consistent with death by strychnia, is a wrong question, unless it be followed by this—'and inconsistent with death by other and natural causes,' and that the question should be, whether the medical evidence establishes, beyond all reasonable doubt, the death of Cook by strychnia. It is my duty to submit that. It is your lordships' duty, if I am wrong, to overrule it."

Mr. Baron Alderson.—"It is done already. You have done it in your speech."

Lord Campbell (addressing the jury).—"Gentlemen: I did not submit to you that the question, upon which alone your verdict was to turn, was, whether the symptoms of Cook were those of strychnia, but I said that that was a most material question, and I desired you to consider it. I said, that, if you thought he died from natural disease—that he did not die from poisoning by strychnia—you should acquit the prisoner; but then I went on to say, that if you were of opinion that the symptoms were consistent with death from strychnia, you should consider the other evidence given in the case, to see whether strychnia had been administered to him, and whether it had been administered by the prisoner at the bar. These are the questions I again put to you. If you come to the conclusion that these symptoms were consistent with death from strychnia, do you believe that death actually resulted from the administration of strychnia, and that that strychnia was administered by the prisoner at the bar? Do not find a verdict of 'guilty,' unless you believe that the strychnia was administered by the prisoner at the bar; but if you believe that, it is your duty to God and man to find the prisoner 'guilty.'"

At the conclusion of this address from the Lord Chief Justice, the jury retired from the court at eighteen minutes after two o'clock.

The jury re-entered their box at twenty-five minutes to four, after an absence of one hour and seventeen minutes; and the prisoner, who had been removed upon the retirement of the jury, was placed in the dock at the same moment.

The Clerk of the Arraigns asked: "Gentlemen of the jury, are you all unanimous in your verdict?"

The Foreman.—"We are."

The Clerk of the Arraigns.—"How say you, gentlemen, do you find the prisoner at the bar 'guilty,' or 'not guilty?'"

The Foreman (rising, and in a distinct and firm tone).—"We find the prisoner guilty."(*y*)

The prisoner was subsequently executed, and, though the question was greatly agitated, both medical and legal opinion has settled down into the belief that the conviction was right.(*z*)

§ 1120. (*d.*) *Facts on which a verdict of guilty can be supported.*—Under this head we propose to touch merely the technical relations of this topic. Those bearing on medicine and surgery have been already fully discussed.

According to Mittermaier, in his monograph on the legal bearings of poisoning, two points must be established to sustain a conviction :—

a^1. That poison was administered to the person whose homicide is the subject of inquiry.

b^1. That the death was the consequence of the poisoning.

Under the first of these heads it may be observed :—

a^2. The drug administered must be legally considered a poison.

b^2. It must be of such a character that after being taken it acts on the system as a poison. It should be observed that the term poison is relative, and that it is qualified by the means which the defendant used to administer it; by the part of the body within which it is introduced; by the method of administration; by the quantity administered; by the circumstances of the administration in reference to the time in which it is brought into the system; and by the mixture of the poison with other drugs.

§ 1121. The proof of the administration of the poison falls under the following heads :—

a^1. Report of the chemical examination.

b^1. Symptoms of the sickness.

c^1. Appearances at death and on the corpse.

d^1. Physical observations.

e^1. Presumptions of the particular case.

a^1. *Report of the chemical examination.*—Formerly, chemical proof of the existence of poison was considered essential to conviction. But this, as has just been seen,(*a*) is based on two erroneous suppositions: 1st. That in all cases of poisoning, the poison may be discovered within the deceased, or in his evacuations; and, 2d. That the results of chemical analysis exclude all doubt. It is true that when mineral poisons, *e. g.*, arsenic, are administered, they could be detected chemically. But the inadequacy of the presumption drawn from the non-discovery of poison is shown from the following points :—

a^2. Many poisons, particularly alkaloids, can only with great difficulty, and under the most favorable circumstances, be chemically detected when internally applied.

b^2. In other cases, where the poison is capable of chemical detection, the

(*y*) The report in the text is reduced from the London Lancet, for May, 1856, &c.

(*z*) See a series of articles in the Lancet in 1856, and one in the Boston Law Reporter for July, 1856.

(*a*) *Ante*, § 1093.

veracity of the rendering is destroyed by the rapid evacuations, *e. g.*, vomitings, that the poison induces; by the evaporation of the poison from the body after death in the shape of gas; by a protracted sickness after administering it, which produces absorption of the poison; by long delay after death, which destroys its traces; and by the eradication of counter agents.

§ 1122. b^1. *The symptoms of sickness.*—The disturbing influence of poison on the human frame produces certain signs, which are the peculiar accompaniments of this action. Great prudence, however, is requisite in the use of this kind of evidence, on account of the difficulty in securing certainty in the witnesses; of the fact that other sicknesses may have produced these symptoms; of the difficulty in getting at the prior health of the patient; and of the inability of the physician to form an opinion without a survey of *all* the facts, which in many cases is impossible.

§ 1123. c^1. *The appearances at death and on the corpse.*—In the great majority of poisons there is a danger of deception arising from the fact that many changes in the corpse are misunderstood, while other signs, such as inflammation in the stomach, are the consequences of other diseases. The difficulty in such cases is aggravated by delay in dissection, by which the organs become putrid.

d^1. Among *physical* peculiarities may be mentioned a particular color of the affected parts; or a specific odor or taste; the finding in the stomach seeds or berries, which were taken as poison; the illumination of poisoned food, as in the case of phosphorus, or the smell of bitter almonds, as in the case of prussic acid.

e^1. The combination of facts showing *preparation* or *motive*. Thus in a preliminary inquiry we may look for the offender among those who obtained the materials appropriate for the commission of the offence, or who would be benefited by the death of the deceased.

§ 1124. The guilt of the defendant may be considered established notwithstanding—

1. That if proper means had been used, death might have been averted.(*b*)

2. That a peculiar constitutional susceptibility increased the liability to death.(*c*)

3. Mismanagement on the part of the medical attendants, by which the symptoms were aggravated, if, in point of fact, the poison was lethal.

On the other hand, as is correctly stated by Mittermaier, the offence will not be complete when the poison is administered in such a small quantity, or in such admixtures, as to destroy its deadly qualities, or when the death is to be traced to an entirely independent cause. In the latter case, however, the crime is consummated if it appear that the death was accelerated by the poison.(*d*)

§ 1125. (*e.*) *Duties of counsel for prosecution and defence.*—In America and England, the counsel for the prosecution is limited, in his opening, to a statement (1) of the facts showing the *corpus delicti*, and the defendant's connection with it; and (2) of the law of the land bearing on the particular issue.

(*b*) Whart. C. L. § 941. (*c*) Ibid. (*d*) Ibid.

It is not only illegal, but highly unbecoming, to refer to the defendant's character and antecedents as acting on the issue in any other way than as affording a presumption of innocence.

In collecting and developing the evidence of the medical and scientific witnesses, however, the prosecuting officer's task is far more difficult. He must first take care that the witnesses so called by him should be of unquestioned skill and standing in their respective branches of study. In the preliminary bearings it is best for him to give full scope to the investigation, calling even such experts as may be suggested by the defence, so as to produce greater fairness, to form a wider base for induction, and to avoid surprise on trial. It is peculiarly important for him to familiarize himself not merely with the law in reference to the crime, but with that portion of the science of medicine with which the particular case comes in contact. Not merely does he have to address the jury on these topics, but he must so master them as to be able to direct his own witnesses, and sift those called on the opposite side.

§ 1126. The counsel for the defence, in preparing his case, will first turn his attention to collecting information as to the prior state of the deceased's health, so as to explain on natural grounds, if possible, the symptoms of the alleged poisoning. He will particularly examine the medical testimony at the preliminary hearing, seeking to contradict it when in error, and at all events, by bringing out all legitimate conflicting opinions, enable the question to be thoroughly canvassed.

On the trial, in addition to those duties in the examination and cross-examination of witnesses, which he shares with the prosecuting officer, it lies upon him to require that public justice, as well as justice to his client, should be furthered by satisfactory proof on the following points:—

The integrity, impartiality, experience, and skill of the experts, on whose testimony the case of the prosecution hangs.

The careful preservation of the parts or substances which were the subject of chemical or other analysis, and the adoption of due precautions to prevent an erroneous result.

The connection of the fatal disease with the poisoning.

The practicability of the method of poisoning alleged.

The connection of the defendant with the administration of the poison.

2d. Wounds and blows.

§ 1127. *a. Legal definition of wounds.*—The medical definition has been already given. Under the English statutes making "wounding" indictable, a breaking of the continuity of the skin is essential to the legal offence. Thus it has been decided that it is not enough "to show a separation of the cuticle only," and hence, where a medical man said that there was a slight abrasion of the skin, from which blood would issue, but in a different manner if the whole skin were cut, the King's Bench held that there was no wound.(*e*) So a scratch, even though death ensue through inflammation, is no wound.(*f*)

(*e*) R. *v.* McLaughlin, 8 C. & P. 635.
(*f*) R. *v.* Beckett, 1 M. & Rob. 526; Moriarty *v.* Brooks, 6 C. & P. 684.

Where, however, there is an internal breaking of the skin, as where the lower jaw was broken in two places, and there was an internal bleeding, this was held a wound.(*g*)

§ 1128. The mere breaking of bones, however,(*h*) or their dislocation,(*i*) is not wounding under the statute.

The wound must be effected by an instrument, and hence, biting a nose, or a finger, is not wounding;(*j*) and it is clear that throwing sulphuric acid on the face is not.(*k*) It is otherwise, however, with a blow from or kick with a shoe.(*l*)

§ 1129. It should be observed that questions of this kind cannot arise in indictments for homicide, unless it be in cases where the indictment is so inartificially drawn as to present but the single alternation of "wound." And even then it is not clear but that the term would be sufficiently comprehensive, in the way that it is ordinarily used ("giving unto the deceased one mortal wound," &c.), to cover cases of biting.(*m*) In other cases, where there is no breaking of the skin, the word "bruise" should be used. But even this would seem not to be now necessary. In an English case tried before Mr. Baron Alderson in 1846, the indictment charged that the defendant "with a certain instrument called a swingle, made of wood, iron, and leather, * * * did then and there give unto her the said E. W. one *mortal wound* of the length of one inch, and the depth of half an inch, of which said mortal wound the said E. W. then and there instantly died." The surgeon who took the post-mortem, stated on his examination as follows: "I found, on examining the head, no external breach of the skin. I found a collection of blood on the back part of the head. The deceased died from extravasation of blood, which pressed on the brain. On examining and cutting the scalp, I found a collection of blood between the scalp and the cranium, just above the spot where, within the cranium, I found the pressure on the brain. I called that a contused wound, with effusion of blood; that is the same thing as a bruise. The internal part of the skin was broken. Medically we call the breaking of the skin, whether externally or internally, a wound." The defendant was convicted, the learned Baron holding it was unimportant whether the injuries were external or internal, and the conviction was sustained by the fifteen judges.(*n*)

b. Under what circumstances wounds imply criminal agency.

§ 1130. *a*[1]. *Character of the wounds themselves.—a*[2]. *Adaptation to a particular instrument.* In Burdell's case, the effort was to show the similarity of a bruise on the deceased's person with a blunt instrument in the defendant's possession; in Webster's (though erroneously, as it turned out), to connect the mortal blow with a sledge-hammer; in Boynton's, to establish a connection between the orifice of the wound and the bore of the defendant's pistol. So convictions have been had from the peculiar jagged character of the wound indicating a saw, from the delicacy of a puncture indicating a needle, from the

(*g*) R. *v.* Smith, 8 C. & P. 173. (*h*) R. *v.* Wood, 1 R. & M., C. C. R. 381.
(*i*) Anonymous, cited Elwell on Malpractice, 316.
(*j*) R. *v.* Stevens, R. & M., C. C. R. 409; R. *v.* Harris, 7 C. & P. 456.
(*k*) R. *v.* Murrow, R. & M., C. R. 456; Henshell's case, 2 Lewin C. C. 135.
(*l*) R. *v.* Briggs, M. C. C. 318. (*m*) See Wh. Prec. 114.
(*n*) R. *v.* Warman, 2 C. & R. 195.

heaviness and breadth of a bruise the flat side of a spade. When the weapon is found bloody or covered with hair, this strengthens the chain.

The character of the wound may indicate that the charge was by gunpowder alone, fired at a very short distance,(*p*) or by very small shot,(*q*) or by rifle shot.(*r*) So also the *distance* of the murderer may be thus inferred.(*s*)

(*p*) *Ante*, § 815. (*q*) § 812. (*r*) § 813.

(*s*) Ibid. Among the many questions which arise under this head, are,

1. Could the injury have been really produced by the weapon which is supposed to have been used?

The following facts will be of service in answering this question:—

a. Blunt instruments produce their effect partly by pressure, and occasion crushing, tearing, and breaking of the parts struck, according to the greater or less force of the blow and of the resistance offered. A smooth and blunt instrument may be recognized by the suggillation and swelling which will follow upon the blow. Cornered, rough, blunt instruments produce, besides the crushing, holes, and often torn and cracked places. Blunt instruments with smooth broad sides often produce deep-seated internal injuries of which no trace is seen upon the surface of the body.

Wounds caused by these instruments have, generally, broken, irregular edges, bleed comparatively little, and fester in healing.

b. Sharp instruments. Where the wound was produced by stabbing, its size and depth must be compared with that of the instrument. Where the wound is by a blow or cut, its edges will often show mutilations answering to gaps or defects in the instrument. A round and conical instrument produces wounds similar to those which a table-knife would occasion. The form of the instrument may often be recognized from the shape of the wound.

c. Shooting instruments. If the weapon be heavily loaded with powder, which is confined with a paper-wad, and be fired at the distance of one or two inches from the body, it will bore a hole similar to that produced by a ball, and leave no traces of paper in the opening. If the weapon be heavily loaded with small shot and fired at a distance of from one to twelve inches, it will produce one single wound at the surface, while the shot will afterwards separate and take different directions within the body. At a distance of one and a half feet there will be separate wounds on the surface. At a distance of three feet the shot will all enter separately, but may be included within a diameter of three or four inches. This diameter increases in proportion to the distance, so that at fifteen steps the load will scatter over the whole back. If a weapon loaded merely with powder be fired at a distance of five or six inches from the body, the paper wad, together with grains of powder, may form a wound very similar to that produced by small shot when fired in close contact with the body. If the weapon is fired at a less distance, but owing to the small charge the contents do not penetrate the skin, the surface from one and a half to two inches in circumference will be uniformly burned, while small black specks, produced by single grains of powder, will be found at further intervals. Where the weapon is fired at a distance of four feet, this burned place will not be seen, and the grains of powder will scatter over a surface of six inches in diameter. Balls often pursue a very inexplicable course in the body. When the ball is found and its shape has not been injured, it should be compared with the weapon used; if the shape has been destroyed, its weight may be compared with that of a similar ball which has not been injured.

The wound made by the egress of a ball from the body is either similar to that made at the entrance, or smaller. In the majority of cases no contents of the body will be forced out at this opening, but the skin will be torn and exhibit a wound of different shapes, sometimes like a split, sometimes three cornered, &c.

Pure shot-wounds.—These resemble a wound made by a round cutting instrument, and are alike at the ingress and egress of the ball. Such wounds will only be found where the weapon has been fired at a distance of from ten to sixty or eighty steps from the body. Nearer than this shreds of paper and grains of powder will accompany the shot. But not all shots made within this distance produce such wounds; there may be some defect in the weapon, or some peculiar condition of the tissues through which the ball must penetrate, or its force may be diminished by striking against a bone, and so the wound resemble ordinary shot wounds.

If the ball splinters a bone and carries pieces out with it, or if it enters the body obliquely, the wound made by its egress may, in such cases, be absolutely larger than that made by its entrance into the body.

For how long a time are the marks given above for distinguishing between the wound made by the entrance and that made by the egress of the ball visible? The

The general presumptions to be drawn from this instrument of death will be hereafter noticed.(*t*)

§ 1131. The physician, as Dr. Casper reminds us,(*u*) is often called to answer the question whether the injuries found upon the body could have been inflicted with some specified instrument. This is generally easy to answer, as, for instance, where the skull is broken, it might have been done with almost any heavy weapon. The further question, whether the injury was probably inflicted with the specified instrument, cannot, commonly, be so positively answered. The most that can be said ordinarily is, that the wound might have been inflicted with the instrument in question, and that either it or some similar one was probably employed. A more positive answer in the negative can generally be given, as the cases where the wound could not have been caused by the specified instrument admit of little doubt. Much often depends upon this answer in questions of guilt and innocence.

A more difficult question is, whether any conclusion can be drawn from the position and extent of the injury as to the manner in which it was inflicted—

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edges of the skin, standing out in the one case, and pressing in in the other, lose this peculiarity after a few hours. In other respects the condition of the wound remains unchanged until festering begins to take place.

The scar left in healing often indicates the direction of the ball as surely as the fresh wound. The scar formed at the place where the ball entered is circular and concave; the skin is drawn in creases from the circumference to the centre; and the scar is white and hard. The scar which forms over the wound made by the egress of the body is, generally, smaller, and of irregular shapes, and often scarcely visible, while the other scar remains distinctly marked.

Contusion, with ecchymosis and extravasation about the wound, are indications of a nearly spent ball. The less the force of the ball the greater injuries of this sort will it produce. The following is an average of the distances within which the several varieties of shot-wounds may be found:—

1. Pure shot-wounds at a distance of from ten to eighty steps.
2. Ordinary shot-wounds at a distance of from fifty to five hundred steps.
3. Contusion and extravasation at a distance of from fifty to five hundred steps and more.

The hole made by the ball answers to its circumference.

In pure shot-wounds this hole is just the size of the ball.

In ordinary shot-wounds the diameter of the hole is never greater, and seldom any less than the circumference of the projectile. In case the outer skin is torn away, the wound at the entrance and egress of the ball may be somewhat larger than the ball would seem to require.

Where the ball strikes obliquely, the opening made is not round, but oval, and gives no data for determining the size of the ball.

2. Can any conclusion be drawn from the extent and position of the wound as to the bodily strength of the person who inflicted it?

The instrument used as well as the injury must be looked to in answering this question. It requires, generally, only sufficient strength to wield a heavy blunt instrument in order to produce with it serious injuries, while greater strength is necessary to effect the same with lighter instruments. Sharp instruments require less strength in proportion to the keenness of their edge.

3. The question whether any conclusion can be drawn from the position and extent of the wound as to the manner in which it was inflicted, can only be answered in special cases.

The easiest way of testing whether a given instrument produced the injury is to place it in the wound, but this is commonly to be avoided as apt to change the original appearance and size of the wound.

The question whether a given instrument is a dangerous one or not belongs not to the province of the physician, and depends altogether upon circumstances.

See Böcker's Med. Jur. 1857, from which the above is translated and reduced, and see fully *ante*, § 807, &c.

(*t*) *Post*, § 1164.

(*u*) Gericht. Med. ed. 1857, § 40, &c.

whether the victim was lying, standing, &c., and as to the bodily strength employed in producing it. A close inspection of the position of the wounds, their depth, breadth, number, and correspondence with the specified instrument, will often furnish strong evidence against the evasive statements of the accused.

§ 1132. b^3. *Shape and direction.*—Whether the wound was skilfully inflicted, or done roughly and brutally, may indicate, (1) the skill, and (2) the temper of the supposed assassin. A rough and ignorant assassin will multiply wounds, so as to make sure of his victim; a man acquainted with surgery will economize them, and direct them to the most fatal part. Whether the defendant acted coolly, from the mere determination to take life, or passionately, from the purpose to inflict injury, and to satisfy revenge and hatred, may be thus gathered. In this way premeditation, and a specific interest to take life, may be inferred, and a test given by which the juries may distinguish between the several degrees of murder.

So, too, by the shape and direction of wounds, the presumption of suicide may be made or refuted. The direction of the wound may show, (1) whether a shot was fired from within or without a house; (2) what was the position and distance of the assailant; and (3) sometimes what was the force used.(*v*) Thus, where a farmer was found dead on the highroad, with his throat cut, "the wound was found to have been made, not, as is usual in suicides, by carrying the cutting instrument from before backwards, but as the throats of sheep are cut when slaughtered by a butcher. The knife had been passed in deeply under and behind the ear, and had been brought out by a semicircular sweep in front; all the great vessels of the neck, with the œsophagus and trachea, having been divided *from behind forwards.*" The prisoner, who was proved to have been a butcher, was subsequently tried and executed for the crime.(*w*) Similar questions, arising from a hemorrhage from the pudenda, have been already noticed.(*x*)

§ 1132(*a.*) *Was the injury found upon a dead body the real cause of death, or of the changes which the body has undergone?*—In answering these questions we must look to the reactions which have taken place. Where the following evidences of reaction are manifest, it may be concluded with great probability that the injury was inflicted during life:—

a. Inflammation and its attendants, festering, traces of healing, recent granulation and scars.

b. A filling of the small bloodvessels around the wound with blood, so as to produce red stripes about the edges of the wound. This appearance, however, may also be observed in cases where the injury was produced after death.

c. Changes of color, red, brown, blue, greenish, yellow, produced by extravasation. These will not be observed until some time after the injury has been inflicted.

d. Exudation of curdled blood from broken bloodvessels. That the blood is curdled is no evidence that it must have exuded after death.

e. Vesications from burning, the appearance of a red inflamed ring around

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(*v*) See *ante*, § 817.
(*w*) Taylor's Med. Jur. 191.
(*x*) *Ante*, § 810.

the burnt place. Blisters, although they may expose, when laid open, a red skin, yet indicate nothing as to whether the burning occurred before or after death, since the same appearances may be produced by intense heat in this case as are observed upon the living body. Scalding never produces vesication upon a dead body, but causes the epidermis to fall off in shreds. Flame applied to the skull-bone of a dead body will cause it to crack open, and the lamellæ to fall off in layers.

f. A cracking open of the edges of the swollen wound. The wound made by a shot when it enters a living body is at the surface swollen, blackened, and cracked open around the edges; the passage made by the ball is narrow, and filled with clotted blood, while infiltration of blood will be observed in the surrounding parts. In the case of dead bodies the ball draws the skin into a funnel shape.

It is possible that all the above marks may be wanting, and yet the injury have been inflicted during life, especially in cases where death follows immediately upon the injury; but such cases are only exceptional.

Whether the changes which the body has undergone are to be ascribed to the injuries inflicted upon it, or to some previous cause, as disease, can only be decided by a careful examination of all the circumstances bearing on the case in hand. The constitution of the person, his predisposition to disease, the locality in which he found his death, the species of injury and its extent, together with other circumstances, must be considered in weighing the probabilities of the case.

§ 1133. *c*[2]. *Particular class of weapon.—a*[3]. *Gunshot.* As has been shown, "near" wounds are shown from the blackening and burning of the skin, and the width and laceration of the wound. From this the presumption of self-infliction may be drawn, though homicidal wounds, in a close conflict, may have the same characteristics.(*y*)

In wounds produced by a shot, it is sometimes the case, as is stated by Dr. Casper,(*z*) that different organs are bored through, and death caused by bleeding; while in others the organ is utterly torn to pieces, and death produced in this way. The instrument used in any given case is rarely a subject of examination on the part of the physician. When this is the case, the question occurs, whether the instrument has been discharged; and if so, when. Boutigny has answered this question by describing minutely the changes which take place, within given periods, upon the powder which remains in the piece after it is discharged. Much weight, however, should not be allowed to these results, given by a man unknown to science, especially in cases where the life of an accused person may be depending. Besides, the correctness of the results deserves to be questioned, from the fact that no allowance is made for different qualities of powder, different states of the atmosphere, &c. In questions of this kind, gunsmiths, huntsmen, &c., are generally much better qualified to answer than the physician, and their testimony should be preferred.

In reference to the effect produced by the shot upon the body, the condition of the parts where the ball entered and where it emerged, the course which it followed, the resistances with which it met, &c., must be noted.

(*y*) See *ante*, § 811, &c.

(*z*) Gericht. Med., ed. 1859, p. 146.

§ 1134. b^3. *Punctured wounds.* The inferences to be drawn from this species of wound have been already noticed.(*a*)

§ 1135. c^3. *Incised wounds.* Here the question may arise between accidental injuries, through the falling upon or striking against glass or crockery, or voluntary, when the wound is intentionally inflicted. It is also to be observed that in suicide an incised wound on the throat is often preferred, though it is sometimes inflicted by an assassin, in which case it may have been inflicted in order the better to conceal the crime.(*b*) These points have been considered under prior heads.(*c*)

Wounds inflicted by a blow with sharp instruments, such as a razor, knife, dagger, sword, bayonet, scythe, &c.—we here translate from Dr. Casper(*d*)—may be either shallow or deep. Where the instrument used was sharp, the outer edge of the wound will, of course, be smooth, but the surface somewhat flattened. The appearances resulting from reaction differ according to the portion of the body on which the injury is made, and the length of time intervening between the infliction of the wound and the examination of the same. If the instrument presses to the bone, it will either break this into pieces or else divide it; this latter is more apt to occur with the bones of the fingers or arm. Both effects are often seen where the blow falls upon the skull. The size of the instrument by which such a wound was inflicted cannot be determined from the appearance of the wound. Where the muscles are cut crosswise, they contract and leave a gaping wound, which by no means answers to the instrument with which it was inflicted.

(*a.*) Where the wound is produced by a cut with a sharp instrument, the sides are smooth and not flattened, and converge to a sharp angle at either end. The same appearances from reaction will be seen as in the case of wounds produced by a blow. Cuts which do not penetrate much beneath the skin may yet open large bloodvessels, and cause the person to bleed to death. In such cases it will often be impossible to determine which is the beginning and which the end of the wound. Surrounding circumstances, such as blood upon one hand and not upon the other, the rent made in the clothing, &c., will sometimes throw light upon this point. When the wound is made upon a neck where the skin is very much wrinkled, the appearance will be that of several separate cuts.

Wounds made by a thrust with a sharp instrument produce little bleeding externally, except where they pierce some large bloodvessel lying near the surface of the skin; and where the instrument is small, they exhibit scarcely any appearances of reaction. If, however, the instrument penetrates to the internal organs, gushes of blood, or urine, or food in process of digestion, will follow. It deserves to be mentioned in this connection that it is often very unjust to blame the examining physician for not tracing out the original source of the bleeding, or the very bloodvessel penetrated by the instrument. Such an examination would in many cases prove very tedious and laborious, and throw no additional light upon the cause of death.

(*a*) *Ante*, §§ 808, 819.
(*b*) Taylor's Med. Jur. 192.
(*c*) *Ante*, §§ 808, 817, 819.
(*d*) Gericht. Med. 1857, p. 139.

Wounds produced by cutting afford no means of determining the size of the instrument.

(*b.*) Dull instruments, as is noticed by Dr. Casper,(*e*) produce very different results, according to the strength with which the blow is given, and the part of the body struck. Sometimes instant death is produced by the crushing of some organ; or death, more or less speedy, may result from rupture of a bloodvessel, owing to concussion. Bones may be injured in various degrees, from a slight fracture to entire crushing. Organs may be torn apart in such a way that the wound will not at all correspond with the instrument by which it was made. The appearance of the person may be entirely changed by the breaking of certain bones in the face, by the swelling of the lips and eyelids, &c. Several of these effects may be combined, either by the use of several different instruments, or by the use of one which has several different sides, adapted to different purposes.

Rupture of the internal organs frequently results from the use of such instruments. Spontaneous rupture never occurs with sound organs; and whenever the *basis cranii*, the liver, the lungs, &c., are ruptured, it may safely be supposed the effect of considerable violence.

§ 1136. d^3. *Contused wounds.* This involves the inquiry whether the wound came from a fall from a height, or against a hard surface, or from a blow from a heavy body falling upon the deceased, or by voluntary or involuntary shocks against a hard substance when in rapid motion, or by a blunt weapon in the hand of the assailant, or, in rare cases, of the deceased himself.(*f*) These points have already been noticed.(*g*) In Stirling's case (Cleveland, Ohio, 1860), where the deceased was found at the bottom of a flight of stairs, with a contused wound on his head, which shortly caused his death, the verdict of the jury followed the weight of medical evidence, that the death was from a fall.(*h*)

§ 1137. d^3. *Number of wounds.*—In *suicides* a legal presumption of self-agency has been strengthened from the wound being single,(*i*) though such presumption can be but weak, since an assassin may often dispatch his victim with a single blow, and, on the other hand, suicides have struck themselves repeatedly before the blow took effect.(*j*) Recent wounds on the back of the hands, and wounds the result of a struggle, give a strong homicidal presumption.(*k*)

§ 1137(*a.*) *Injuries by violence.*—In cases where there are no external marks of violence whatever upon the body, it is by no means to be concluded simply from that reason that death was not produced by violent means. So far is this from being the case, no external traces of violence, as we are reminded by Dr. Casper,(*l*) are to be expected in such injuries as are followed by immediate or very speedy death; as, for instance, in ruptures of the organs, &c. The following remarkable case is cited by him in this connection :—

(*e*) Gericht. Med. p. 143.
(*f*) *Ante*, § 816.
(*g*) *Ante*, § 809, &c.
(*h*) See *ante*, § 846, &c.
(*i*) Burrill, Circum. Ev. 695.
(*j*) See *ante*, §§ 809, 816, 846, &c.
(*k*) *Ante*, §§ 816, 846; Taylor's Med. Jur. 201.
(*l*) Handb. Gericht. Med. 1857, p. 122.

A driver who, upon a cold winter night, was descending the hill from Spandau with a heavily-loaded wagon, and had dismounted in order to relieve his horses, was overtaken by the wagon and thrown with violence against a tree by the road-side, where he was found next morning lying dead. The only external marks of violence were a slight abrasure of the skin upon the left shoulder and on the right jaw. There was nothing remarkable about the appearance of the head except that the *sinus transversus* seemed more full of blood than usual. On opening the spine at the neck about a quart of dark blood ran out. The muscles of the back were suggillated through the whole length of the spine, but the marrow was uninjured. Thirty ounces of dark blood were found in the left breast. The heart had been torn from its proper position, was entirely separated from the large bloodvessels, and was lying almost loose in the cavity of the breast. The pericardium had been torn throughout its entire diameter. The ends of large bloodvessels, as of the pulmonary artery and of the *aorta*, were distinctly traceable in the cavity of the breast. The skin of the heart was sound and firm, and the heart still contained much dark, clotted blood. The left lung also was torn throughout its middle segment, and a wound two inches long and a half inch deep was found on the liver. Yet there was nothing remarkable in the external appearance of the body!

§ 1138. e^2. *Situation of wounds.*—The presumptions falling under this head have been already noticed.(*m*)

§ 1139. b^1. *Expression of countenance.*—"In cases of suicide," says M. Burrill,(*n*) "death being desired and determined on, there is no expression of fear on the countenance, though it may be haggard from the influence of other passions; the eyes being usually closed and sunken. In cases of assassination, on the contrary, where death is struggled against and shrunk from, there is always a degree of fear, amounting sometimes to the extremity of terror, imprinted on the visage, the eyes being open or staring. The countenance in these cases is also usually pale, although sometimes there may be the opposite appearance of redness or suffusion. The latter circumstance is considered important, as it may indicate the use of violence in order to stop the cries of the subject of the crime."

In suicides produced by despair, however, it has been observed that the expression of the countenance is often more agonizing than that produced in any kind of death.(*o*)

§ 1140. c^1. *Inferences from surrounding objects.*—a^2. *Clothing.*—This, in reference to the kindred presumption of premeditation, will be considered under a subsequent head. In Courvoisier's case, it was held that a cutting through a cravat or portion of a dress was indicative of homicide, since it was not likely that a suicide would strike the blow without first removing such obstacles.

The effect of blood on clothing has been already examined.(*p*)

(*m*) *Ante*, § 816, &c. (*n*) Circumstantial Evidence, 686. (*o*) *Post*, § 1151.

(*p*) *Ante*, §§ 821–31. The following is from the *N. Y. Observer*, of Aug. 3, 1860: "In 1825, a youth resided in a small town in Loudon Co., Va., who was a barkeeper of a tavern; he became a confirmed gambler. He set off one day on horseback on a

Rifling of the pockets, tearing of the dress, its being put on in a manner unusual for the deceased, incisions or perforations, dirt clinging to the texture, all afford grounds for a legal presumption of homicide.(q)

In rape, the condition of the clothing forms one of the main points from which a presumption of violence may be drawn.

§ 1141. *b*[2]. *Agent commensurate to the effect.*—If no weapon be found by which the offence could have been committed, the presumption of homicide, as distinguished from suicide, is very strong.(r) "If a weapon be found near the body," says Mr. Burrill,(s) "or within a short distance from it, its nature and the degree of its sharpness, as corresponding with the appearance of the wound, are important considerations. Its appearance, also, and relative position of the body (that is, as lying on the right or left side of it), require to be most accurately examined and considered, as the appearances of suicide are sometimes attempted to be given to murder, by the perpetrator, in order to escape suspicion and discovery. The instrument with which a suicidal wound of the throat is most commonly made is a razor, and it is frequently found either grasped in the hand or lying by the side of the deceased. Where the wound must have produced almost instant death, if the razor is found closed, there is fair ground to suspect the interference of another person; although the circumstance also has happened in cases of suicide. If the instrument be found still firmly grasped in the hand of the deceased, no better circumstantial evidence of suicide can perhaps be offered, it being impossible that any murderer could imitate such a state and position. But where the

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travelling tour, with a person whom he knew to have in his possession a large sum of money, and before he started armed himself secretly with a pistol, at the muzzle of which was a small dagger attached. On Saturday night they arrived at Centreville, in Fairfax County. After supper they left the house, and in a short time the young man returned without his companion. When the landlord asked for him, the answer was, 'Am I his keeper?'—the ominous reply of the first murderer! About daylight next morning he was seen crossing a field where the corpse was found perhaps a day or two afterwards. He returned to his residence on Sunday, and I conversed with him within thirty hours after his hands were reeking with blood; he seemed gay and cheerful as ever. He was arrested on suspicion, and in his trunk was found the pistol, which, to the naked eye, displayed no marks of blood. When, however, the microscope was applied it was clearly discoverable, and also a very small portion of one of the hairs of the dead man's whisker, which was of red color. He was taken off, accompanied by a lawyer, who was unsurpassed in physical and moral courage by any other man I ever knew. When they arrived at Centreville the excitement was tremendous. All were clear that he was guilty; some said that if the accused would touch the corpse it would bleed. On hearing this prognostication his counsel compelled him to come up stairs and touch the cold body, in order to do away the suspicion. He now appealed to the crowd in eloquent terms that his client was innocent, because no blood issued from either of eighteen wounds. Long after this his trial came on at the county town of Fairfax, before Judge Dade and an impartial jury of his own selection. The testimony was entirely circumstantial and indirect. But when the different links of the chain were put together it pointed with fatal certainty to the prisoner. The microscope helped greatly in tightening the rope around his neck. That little fraction of a hair, mixed with blood, connected with some of the identified money of the deceased, and other circumstances not now recollected, brought the guilty youth to the gallows. Afterwards it appeared that the murdered man lay on the ground through the whole night mortally wounded, but was able to implore and beg his pursuer on Sunday morning to spare his life; but acting on the principle 'that the dead tell no tales,' he stabbed him seventeen times, until death closed the scene."

(q) See 1 Taylor's Med. Jur. 188.

(r) See *ante*, § 819, &c.

(s) Circumstantial Evidence, 690.

razor is held loosely in the hand, or with no compression of the fingers upon it, there is room for the supposition of homicide, which may become strongly presumptive, especially if no blood appear upon the hand."

§ 1142. c^2. *Place where found.*—Was the ground marked by struggling, and does it show that a body was dragged over it? These indications, particularly the latter, are much relied on by the courts as showing violence.(*t*) So of the prints of feet, though here there is great danger that, by a change of shoes, a crafty assassin may throw a false suspicion on an innocent person. So as to blood; but here, also, there is great danger of fraud. The cases have not been unfrequent, where adroit assassins, by smearing blood on weapons belonging to others, or by making false tracks, have baffled inquiry.

§ 1143. William Peterson, a young man of about twenty, was tried in Raleigh, Shelby County, Tennessee, in 1852, for the murder of William Merriweather, of Mississippi. In appearance—we condense from a report by the then Attorney-General of the Memphis District—the prisoner more resembled a fair young girl than the common ideal of a highwayman—of light and buoyant figure, small of stature, of fair and beautiful complexion, but of an expression of countenance as if chiselled in marble—cold, saturnine, and indifferent to the last degree. The deceased was a young planter of Mississippi, of very noble character and great popularity, then but recently married.(*u*)

He left his home in Mississippi in the spring of 1851, to traverse on horseback the wilds of Arkansas, in quest of a new home. He took with him about one hundred and eighty dollars in money to pay his travelling expenses. The horse upon which the journey was to be performed, whose astonishing instincts afterwards became such an important and indispensable link in the chain of testimony by which the murderer of his master was detected, was a dark blood-bay, of great beauty and sagacity, and of wonderful affection for his master. On taking leave of his family, Mr. Merriweather observed that he would take Memphis in his route, some hundred and twenty miles distant, where he intended to purchase a pocket Bible, and a small map of Arkansas. His wife placed in his vest pocket a package of needles wrapped in brown paper, with some buttons, thread, and such other little articles of the kind as might be needed during his journey. He also purchased two pocket knives precisely alike, one of which he presented to his brother, William Merriweather, and then took his departure. Some five or six weeks after he left his home—nothing having been heard from him in the interval—there appeared in the Memphis Inquirer, a startling account of the finding of the dead body of a man in the forest some eight miles south of Memphis, some forty feet east of the Hernando Road, and in the Twelfth Civil District of Shelby County, with every appearance upon it and about it of having been murdered. The body was found at the root of a tree, denuded of flesh by decomposition, and by having been eaten by the hogs, and the head, which had been severed

(*t*) State *v.* McCann, 13 Smedes & Marshall, 478.

(*u*) I have thought it best, instead of dividing the several points in this case under their respective heads, to place them together at this point. The interest of the case—and I know none more interesting—is derived as much from the inter-dependence of the several items of proof, as from their individual value.

from the body, lying some ten feet off. Upon the forehead there was an indentation, apparently produced by a blow from an octagon hammer, or other instrument. The account contained a description of the person as well as it could be identified, and the color and quality of the clothing left upon the body. The color of the hair was described, the teeth also, and two notable plugs in the same, and the contents of the vest pocket, being, among other things of little value, a package of needles, thread and buttons, wrapped in brown paper, together with some manuscripts much defaced by exposure to the rain. This account, answering so well the description of Thomas Merriweather, in a few days reached his family, who were plunged in grief, and startled by the suspicion that he had been murdered. William Merriweather, his brother, went up immediately to the vicinity of Memphis to investigate the matter. The body, in the mean time, had been buried. He had it exhumed, and at once thought he recognized it as the mutilated corpse of his lost brother. After re-interring the body, he went into the city to make further inquiry. This Mr. Merriweather was almost the exact counterpart of his deceased brother in personal appearance. Remembering that his brother intended to purchase a pocket Bible and pocket map of Arkansas, in passing through Memphis, he inquired of a book merchant if a gentleman had purchased such articles of him some five or six weeks before, who replied, "Yes, sir, and you are the very man." Upon being informed of his sad mission, the merchant told him that his brother, or a gentleman much resembling himself, had called about the time specified and purchased the articles referred to, about three o'clock in the afternoon, and while in the store, had remarked that he had visited Memphis *en route* to Arkansas, where he intended purchasing lands, but upon learning that the cholera was raging upon the river, and in a portion of the country through which he intended to pass, he had concluded to return home; that he would start out that evening, and go some five or six miles on his journey home, and postpone his trip westward until a more auspicious time.

§ 1144. There were several persons in the store at the time of this conversation, some of whom were unknown to the merchant. Upon receiving this information, Mr. Merriweather took the road his brother had taken homeward, and after a ride of six miles he reached the house of Mr. Hammel, the only public house in that vicinity, where he thought it likely his brother had spent the night on his journey toward home. Mr. Hammel, upon inquiry, told him that his brother had spent the night with him about the time specified, and that on the same night a young man but poorly clad, whose name he did not learn, had spent the night there also. The young man came in, he said, from the direction of Memphis, a short time after dark, and seemed to be travelling on foot. Upon the trial, Mr. Hammel recognized the prisoner as the same person. He was going toward Hernando, as he said, and from his appearance, was in feeble health. The young man and the deceased had conversed much during the evening, and he had heard the deceased giving the young man much kindly advice. They seemed, however, to be strangers to each other. The next morning the young man arose, paid for his lodging and supper, and left very early before breakfast, going on his journey toward

Hernando. He seemed to have but little money. When the deceased came down to his breakfast about seven o'clock, he inquired for the young man, and upon being told that he had gone, he expressed some regret, stating that the youth appeared to be frail and feeble, and that he intended to give him a ride during much of the journey to Hernando. The deceased left Mr. Hammel's and took the road toward Hernando immediately after breakfast. The body was afterward found about two miles from Mr. Hammel's, upon that road. After getting this information, Mr. Merriweather resumed his journey toward his home in Mississippi. In passing through a village some hundred miles from Memphis, he instituted further inquiry, and was informed that some five weeks before, a young man rode into the village on a fine blood-bay horse, and offered him for sale at much less than he was supposed to be worth. A gentleman present suspected from this and other circumstances that the horse had been stolen, and upon catechizing the youth pretty closely, he suddenly put spurs to the horse and galloped him off. The young man's name was given as William Peterson; and the horse had been sold by him to a gentleman a few miles from the village. Mr. Merriweather then went in quest of the horse, which proved upon inspection to be the noble animal referred to, of his lost brother. The father of Peterson lived not far distant, who is said to be a very respectable and worthy citizen. Mr. Merriweather had confidence in the old man's truth and integrity, and fearing that he might do injustice to the family and to Peterson, by prematurely denouncing him as the murderer, he visited the father and unfolded to him all the circumstances of suspicion by which his son was complicated. The story fell upon the ears of the father and devoted young sisters of Peterson like a bombshell. The young man had returned home, after a long absence, riding the fine horse in question—well dressed and well supplied with money. He had told them that the horse was purchased by him in Holly Springs, at auction upon the streets. This they believed, and were still hopeful of his innocence, and assured that he would be able to dissipate the cloud of suspicion which enveloped him. Mr. Merriweather informed them of the circumstance of his brother's having purchased a pocket Bible and small map of Arkansas, in Memphis. At this announcement the father was still more startled and wholly subdued, and the sisters in an agony of tears admitted that the brother had brought home and presented to them such articles as Mr. Merriweather described. The little Bible and pocket map were at once produced and delivered to Mr. Merriweather, and upon the trial were identified by the merchant as the same that he had sold the deceased. William Peterson was ascertained to be at that time sojourning in the town of Grenada. Mr. Merriweather, accompanied by a few friends, went in search of him. In the conflict of mind between his commiseration for the father and sisters of Peterson, and his eagerness to bring to punishment the murderer of his brother, he determined still further to investigate the matter before he had Peterson arrested; and the purpose of his seeking him was to examine his wardrobe, and if possible still further to satisfy himself of his guilt. About eleven o'clock at night, the party alighted at the hotel in Grenada, where Peterson was said to be sojourning. Peterson had retired to bed, and they were shown to his room; the light shone instantly upon his face as the party entered, and he was

discovered to be apparently asleep—this, however, upon closer inspection of his half-closed eyes and trembling eyelids, was evidently feigned. He was touched by one of the party, and told that they had come to arrest him on a charge of murder, committed in the city of St. Louis. He instantly arose and replied that he was ready to answer the charge. His eyes, in glancing upon the faces of the party, fell upon the pallid and excited face of William Merriweather, whom he had never seen before, upon which his gaze for a moment was fixed—then his head dropped upon his breast, and he sighed deeply. Mr. Merriweather asked him for the key of his trunk, which he gave him; the trunk was opened, and Mr. Merriweather proceeded to inspect the articles it contained. He recognized at once a pair of pantaloons of rare texture, and some shirts and a vest which he believed to be his brother's. But fearing still that he might peradventure be mistaken in opinion, he determined still further to look into the contents of the trunk, when he found a pair of socks resembling a pair his brother had taken with him, one of which was marked with his own initials, and the other with those of his brother. Upon this discovery he was overwhelmed with the conviction that he was in the presence of the murderer of his brother—actuated by a sudden and natural impulse of resentment, he drew a pistol from his bosom and placed the muzzle at the heart of Peterson, exclaiming, "You, sir, have murdered my poor brother," but instantly collecting himself, he observed, "but no, vengeance belongs to God and to the law; your blood shall not be upon my skirts!" William Peterson was then arrested upon the charge of murder. The person and the trunk of the prisoner were carefully searched for the knife of the deceased, but it could nowhere be found. Nothing was said to him, however, in reference to the knife —and it was at no time intimated to him that the deceased had a knife when he left his home. Upon the person of the prisoner was found about one hundred dollars in money, and a promissory note for twenty-five dollars, executed to him in part payment for the horse by the gentleman who had purchased him. Some pistols were also found in his possession, one of which had an octagon barrel. The prisoner stoutly denied the killing of Merriweather, but said he knew who did do it; and although he was indirectly concerned in it, yet he was eight miles from the scene of the murder when it was committed. About two days after his arrest, William Merriweather took out his own knife in the presence of the prisoner, and held it up by the blade before him, in silence. The prisoner gazed earnestly at it for a moment, and observed, "That is not your brother's knife, sir." Soon afterward he was taken to Shelby County to be lodged in jail to await his trial. In passing by the scene of the murder he was observed to turn deadly pale, and to gaze fixedly in an opposite direction from that in which the body had been found. He was indicted in the Circuit Court at Raleigh, not as accessary, but as the actual murderer of Thomas Merriweather. The bill of indictment contains but one count, alleging the homicide to have been committed with a knife. When put upon his trial and charged upon the bill of indictment, he pleaded not guilty thereto, and a jury were impanelled.

§ 1145. The question of the identity of the body was the first difficulty with which the prosecution had to contend. In the mutilated condition of the body

when found, which had been exposed for five or six weeks in the open wood, to rough weather and furious rains, with its head severed from it, and every bone well nigh denuded of its flesh—the proof of its identity became a most delicate and difficult question. The testimony of William Merriweather, who had exhumed and examined it, as to his belief that it was the body of his brother, from the color of the hair and the appearance of the plugged teeth, but who also testified that several of the front teeth had been lost since he had seen his brother living, and could nowhere be found, was wholly insufficient for this purpose, and tended rather to obscure than to elucidate the point in question. Under these circumstances it became utterly impossible, under the austere requirements of the law, to sustain the indictment without further testimony. Mr. Merriweather could not identify the few torn and tattered garments which the robber had left upon the deceased, and which had totally changed appearance by exposure to the weather. He thought, however, that he recognized a letter or two of the small piece of obliterated manuscript, found in the vest pocket, as his brother's handwriting. But this was not enough. The vest was of figured satin, which he had never seen, the quality and texture of which could be discerned by a little spot which was luckily preserved from the general decay by being covered by the lapel. The clothing and the contents of the vest pocket had been preserved, and were produced upon the trial.

§ 1146. It became thus necessary to call the widow of the deceased, whose knowledge of his clothing was more exact, but whose touching condition, coupled with the poignancy of her affliction, had led the prosecutor humanely to endeavor to spare her a trial so great as that of the public inspection and identification of her husband's remains. The articles were presented to her *seriatim*, and she was severally questioned as to her recollection of them. First, a lock of her lost husband's hair, which she stated upon her belief to be his. Next, the articles of wearing apparel, several of which were too much altered for her recognition. The vest was produced; she held it up in her hand for a moment in doubt, until her attention was called to the spot beneath the lapel, where an entire figure was preserved from the general decay, when she at once pronounced it, upon her belief, to be his vest. The last article produced and identified was the little packet of needles and thread which had been found in the vest pocket.

§ 1147. Assuming the remains to be identified, a second difficulty arose in sustaining the allegation in the indictment that the death was produced by a knife. When the body was found, as will be remembered, the head was severed therefrom, and was lying some paces from it. The flesh was too far decomposed to distinguish the incision of a knife, but the fact that the head was off tended to the conclusion that a knife was used to effect it. It will be remembered, also, that upon the forehead of the deceased there was a deep indentation, which must have been made during the desperate struggle, and which, as the witness believed, was made by an octagon shaped hammer, or other instrument of that shape, and also that the prisoner had been seen with a large octagon barrelled pistol. In addition to this, one of the vertebral bones in the neck had been evidently disjointed by a violent concussion from a blunt instrument. The very intelligent surgeon who examined the body and testified to these facts,

believed that this was done by a pistol ball, and that when done it produced instant death. It seemed then that the murder was actually perpetrated with a pistol, but a knife had been probably used in the horrible climax the prisoner gave to his work in severing the head from the body. This left the question somewhat in doubt, until the counsel for the State asked of the surgeon the question, whether the disjoining of the vertebral bone referred to might not have been effected by compression between the tusks of a hog? He replied, that "it might have been done in that way." It was proven that many hogs were about the body when it was found. When the cause was submitted to the jury in argument, the counsel for the State argued upon this point, that inasmuch as it appeared that the homicide was committed on the morning of the Sabbath, very near to a much frequented highway, and in a populous neighborhood, the probabilities were against the hypothesis, that the prisoner would have rendered himself so liable to immediate detection in the commission of so dreadful a crime, as by the firing of a pistol; and that this fact, connected with the severance of the head from the body, and the further pregnant circumstance that the prisoner had evidently seen and examined carefully the dirk knife of the deceased, as evinced by the incident related by Mr. Merriweather; and had so disposed of it as to be enabled confidently to negative the idea that the knife held before him by that gentleman, although its counterpart, was the knife of the deceased, clearly established the proposition, as far as circumstances could do it, that the instrument of death was a knife. It was believed by the State's counsel, from all the facts of the case, that the highwayman, who during the night before had won the sympathy and confidence of his noble and unsuspecting victim, had decoyed him into the wood under some pretext, and had perhaps induced him to dismount from his horse, and then demanded his money or his life. The well known brave and chivalrous character of the deceased, authorized the further supposition that this demand was flatly refused, upon which a struggle ensued, in which the deceased attempted to use his dirk knife, and was prostrated by a blow in the forehead with the heavy octagon pistol—the knife wrested from his hand and used by the highwayman in assuring his dreadful purpose, by severing the head from the body. The jury believed with the counsel for the State.

§ 1148. A third and more technical difficulty then arose with regard to the venue. The indictment was in Shelby County, a county divided into two judicial districts. One of these, of which the county seat is Memphis, has jurisdiction of all crimes committed in the 5th, 13th, and 14th civil districts. The other, of which the county seat is Raleigh, has jurisdiction of all crimes committed in the 12th and all other districts of the county. The body was found in the 12th civil district, some forty or fifty feet from the Hernando road, and the dividing line between the 12th district and the 13th, which lay on the opposite side of the road, was the road, or ran along the same for some distance in either direction from the spot where the body was found. The dividing line was not very well defined in proof, but it was generally understood that the road was on the same. The fact that the body was found in the 12th civil district, without countervailing evidence, would, of itself, have sufficed to identify the venue as averred in the indictment. But on cross-exa-

mination of one of the persons who first discovered the dead body, it was ascertained that there were appearances upon the leaves and ground of the body's having been dragged from the road toward the tree where it had been found. This disclosure changed the whole *status* of the case, and unless it could be explained, required the acquittal of the prisoner.

§ 1149. To meet this point were introduced perhaps the most extraordinary items of evidence which criminal trials record. It had been proven in the course of the trial that about 8 o'clock on the Sunday morning that the deceased and the prisoner left Mr. Hammel's, a gentleman coming towards Memphis met the horse proven to have been Mr. Merriweather's, on the Hernando road, about two thousand yards from the scene of the murder, and south of the same, galloping at full speed in the direction of Hernando, and appearing to be exceedingly frightened; with difficulty the gentleman intercepted and caught him. There was a saddle and bridle and pair of saddlebags upon him. The rein of the bridle was upon his neck. The gentleman finding the animal almost uncontrollable from agitation and fright, had some difficulty in retaining the rein in his hand, until a young man came forward and claimed him. The young man who claimed the horse was recognized by the gentleman upon the trial as the prisoner at the bar. He came forward, said the gentleman, claimed the horse, thanked him gracefully for catching him, mounted and rode hurriedly off in the direction of Hernando. The prisoner's clothes were observed at the time to be covered with dirt as if he had been rolled upon the ground—but supposing the horse had thrown him, the gentleman went on his way thinking nothing of the circumstance. The facts here submitted to the jury, in reference to the wonderful instincts of the horse, are these: It will be remembered that the noble animal in question was of extraordinary intelligence, and singularly attached to his master, whom he was in the habit of following about whenever he came to the pasture or the farm yard where he was. Thomas Merriweather had owned the horse for several years, and had taught him many of the various little feats of intelligence, which add to the character of that noble animal so great an interest.

§ 1150. Some several months after the prisoner had been committed to jail under indictment, William Merriweather, accompanied by a number of gentlemen, witnesses in the case, came up from their homes in Mississippi to attend the trial. William Merriweather was riding the horse of his deceased brother, which had by this time been recovered into the family. Their journey lay along the Hernando road, and by the spot where the body had been found. About one or two hundred yards before the party reached the scene of the murder, the horse upon which William Merriweather was mounted began to exhibit symptoms of alarm and excitement, which, considering his ordinarily gentle and tractable character, much surprised his rider and the gentlemen who were with him. There was no apparent cause of alarm, and the several other horses of the party betrayed none. His agitation increased as the party approached the fatal spot; and when they had reached a point in the road opposite to it, the excitement of the horse arose to so furious a pitch that he became almost unmanageable. The whole party checked their horses, and for a moment regarded the strange conduct of the horse with profound astonish-

ment. His flesh quivering—his nostrils distended, his eye glancing into the wood where his noble master had met his horrible fate—he stood for a moment, snorting and neighing—a sublime picture of wildest excitement. One of the party suggested to Mr. Merriweather to give him the rein, which meanwhile had been tightly drawn. This was done, and instantly the noble animal rushed into the wood, and down to the identical tree under which the body had been found and commenced pawing at its root. After a moment, he trotted out further into the wood, and after making a semicircle in his course, returned to the same spot, and there stood neighing, trembling and pawing until he was forced away. Similar exhibitions were made by the horse several times afterwards in passing the spot.

No blood had ever been seen in the road—and no appearance of a struggle there. If the killing had been done in the road, the horse, whose rapid flight and wild fright on that morning must have been occasioned instantly by the death struggle, would have known nothing of the tree in the wood.

The verdict of the jury was, that the prisoner was guilty of murder in the first degree, as charged in the bill of indictment, and sentence of death was pronounced against him, which was afterwards commuted to imprisonment for life in the State penitentiary.

§ 1151. d^1. *Position and appearance of the body.*—a^2. *Attitude.* Where the body stiffens in an attitude of resistance or imprecation—where, as in Burdell's case, it is partly mutilated—where, as in Webster's case, it is cut to pieces in order to be burned or otherwise disposed of—where it is crumpled or doubled up so as to be packed away in a box—where it is sunk in a pond loaded with stones—where an attempt has been made to disguise the features—here homicide will be presumed.(*v*) So, as has already been noticed,(*w*) a presumption of violence is lent by the fact that a weapon is found in a stiffened hand, lying on it in such a way as to be supported by the hand as it was stretched after death, and not grasped by it as it would be in case of suicide. So, on the other hand, the firm grasping of a pistol or weapon indicates suicide. Where the weapon lies close to the body on the ground, no inference either way can be drawn.

The *posture*, in case of a sudden and surprised death, is lying on the back, and in such case, unless natural causes of sudden death be found, the presumption is homicide.(*x*) Then, again, the disposition of the limbs is significant. Sentimental suicides compose themselves gracefully for the spectacle. But when despair is the controlling cause, the countenance at least may display misery even more intense than that of a death struggle with an assassin.(*xx*)

§ 1152. b^2. *Marks of blood.*—This topic has been already discussed.(*y*)

§ 1153. c^2. *Bruises.*—Here, in connection with the points already mentioned,(*z*) we may call attention to the legal presumptions to be drawn from the appearances called *ecchymosis* and suggillation. These appearances, in proportion as they increase in number and extent, evolve the presumption of homicide.

(*v*) See Burrill's Circumst. Ev. p. 684.
(*w*) *Ante*, § 819.
(*x*) See *ante*, § 819.
(*xx*) See *ante*, § 1139.
(*y*) *Ante*, §§ 820, &c., 828, 830, &c.
(*z*) *Ante*, §§ 810, 925.

Where death has been produced by violence, certain suspicious spots are often found upon the body. These are commonly roundish in shape, from one-quarter to three-fourths of an inch in diameter, of a red, or reddish brown, or a dirty yellowish brown color, rather hard and tough, and when cut into exhibit no real suggillation. These spots may puzzle the examining physician, and where the manner of death is unknown and is attended with suspicious circumstances, they require the most minute attention, as they may possibly indicate a struggle in which the person was engaged at the time that death occurred. In the majority of cases, however, these spots are produced by the person's striking against some hard substance at the moment of death, and have nothing to do with the manner of death. The same appearances may also be produced after death by rough handling of the body, &c. Even some days after death pseudo-suggillations may be produced, by excoriating some part of the body with a stiff brush, &c., which might easily be mistaken for reactions that occurred during life.

§ 1153(*a*.) *Have the injuries which appear upon a dead body been inflicted before or after death?*—Generally, as is stated by Dr. Casper,(*a*) injuries inflicted during life may be easily distinguished from those inflicted upon the dead body by the fact that in the latter case there will be no appearance of reaction, such as inflammation, bleeding, festering, swelling, granulation, or drying up of the edges of the wound. But it is important to observe that in the case of fat bodies, injuries inflicted after death—as, for instance, a cut with a knife—often assume an appearance, when the body begins to swell, which it is very difficult to distinguish from reactions that have taken place during life. This may occur where bodies have lain undiscovered in water until the process of decomposition has begun. It will also be difficult, often impossible, to distinguish the two cases in question where the injured parts have been singed or charred by fire. But while it is true that injuries inflicted upon a dead body never show any appearance of reaction, it is by no means true that reactions always appear where the injury has been inflicted during life. Many cases occur, some of which have been already noticed, where no trace of suggillation, no inflamed places, no festering, &c., can be seen upon the body, even though the injury was inflicted during life. This is especially the case where death is very suddenly produced by the opening of some large bloodvessel, as of the *carotis, jugularis*, &c. In such case there is not the slightest trace of reaction, no suggillation, festering, or swelling; and if a wound is made upon the dead body near that which caused death, and similar to it, it will be impossible to distinguish the two.

Very frequently the injuries found upon the body are such as have been produced *lege artis*, as by cupping or bleeding, amputation, &c.(*b*) These require nothing more than a general notice at the hands of the examiner, except in cases where the practice of the operating physician is called in question.

To this head belong also injuries produced upon the body where it has served as food for wild animals.

Where the injuries found upon the body are such as have been the imme-

(*a*) Gericht. Med. 1857, p. 128. (*b*) Casper, Gericht. Med. ed. 1857, p. 135.

diate cause of death. In this case, of course, the examination of the injuries should be very careful and thorough. The suggillated places, where they are prominent, should be accurately described, the size, diameter, &c.(*c*)

§ 1154. *e*[1]. *Probability of the infliction of the injury before death.*—This topic has already been discussed.(*d*)

§ 1155. *f*[1]. *Connection of the wound with the death.*(*e*)—It is necessary that the death should be shown to have been produced by the particular blow described and charged. Technically, as was shown in Peterson's case, if the wound is charged to have come from a knife, when in fact it is from a pistol, the variance is fatal. This difficulty, however, has in many cases been remedied by statutes.(*f*) The practical result of the common law is well stated in Bird's case, where all the judges concurred in saying that where certain assaults were put in evidence, and relied on by the prosecution, as being the cause of death, but where the clear surgical testimony was that the death was caused by a blow on the head, of which there was no evidence whatsoever, the defendants were entitled to an acquittal.(*g*)

But while it is necessary to show that the wound caused the death, positive proof that life continued to the moment of the blow is not required.(*h*)

If it appear that the death was accelerated by the prisoner's violence, it is no defence that the deceased was laboring under a disease otherwise fatal.(*i*) Nor is it a defence that the death was the immediate result of a surgical operation, which operation, in the opinion of competent surgeons, was rendered necessary to avoid the effects of a wound otherwise mortal.(*j*) Nor is it a defence that had the deceased consented to an amputation, or been more skilfully treated, he might have recovered.(*k*)

C. Intent and Design—from what to be inferred.

§ 1156. I. Prior attempts, preparations, threats.(*a*)

Prior attempts of the defendant to assassinate the deceased can always be received to prove intent, and so of former menaces or expressions of vindictive feeling.(*b*) And on the trial of a husband for his wife's murder, the prosecution may put in evidence a long course of ill treatment by the husband of the wife.(*c*) And on a trial for the same crime it has even been held that adultery with another woman could be shown for the purpose of explaining the motive.(*d*) It has been held admissible, also, to show that on the same day the deceased was killed, and shortly before the killing, the defendant shot a third person, the transactions appearing to be one.(*e*) But it is inadmissible to prove that the defendant had been guilty of murder or of attempts to mur-

(*c*) Casper, Gericht. Med. ed. 1857, p. 136. See these points considered fully, *ante*, §§ 798, 799.
(*d*) See *ante*, §§ 798–802.
(*e*) See *ante*, §§ 833–946, as to the medical question.
(*f*) See also Wh. Cr. Law, § 594. (*g*) R. *v.* Bird, 2 Eng. R. 448.
(*h*) Wh. Cr. Law, § 941. (*i*) Ibid. (*j*) Ibid. (*k*) Ibid.
(*a*) See *ante*, § 972—*post*, § 1173.
(*b*) See Wh. Cr. Law (3d ed.), 292; State *v.* Rash, 12 Iredell, 382; State *v.* Watkins, 12 Conn. 47; Johnson *v.* State, 17 Ala. 618; R. *v.* Voke, R. & R. 531.
(*c*) State *v.* Rash, 12 Iredell, 382.
(*d*) State *v.* Watkins, 12 Conn. 47; Johnson *v.* State. 17 Ala. 618.
(*e*) Heath *v.* Com. 1 Robinson, 735.

der third parties,(*f*) or that he had a tendency to commit the particular offence.(*g*) It is here, indeed, that is to be perceived the line of demarcation between the civil and the common law. By the former it is considered competent to show that the defendant was likely, from the peculiarities of his moral structure, to have committed the particular crime. In the latter, while the physical capacity and mechanical concomitants suitable for the commission of the offence may, as will be hereafter shown, be proved, it is otherwise with regard to the moral or physical constitution.(*h*)

§ 1157. Purchasing, collecting, and fashioning instruments of mischief; repairing to the spot destined to be the scene of it; acts done with the view of giving birth to productive or facilitating causes for removing obstructions in the execution of the design, or for obviating suspicion, &c., may also be put in evidence for the same purpose.

§ 1158. A remarkable instance is presented in the case of Richard Patch, who was convicted and executed in 1806, for the murder of his friend and patron, Isaac Blight. The prisoner and the deceased lived in the same house, and the latter was one evening shot, while sitting in his parlor, by a pistol from an unseen hand. A strong and well connected chain of circumstantial evidence fixed Patch as the murderer, in the course of which it appeared that a few evenings before that on which the murder was committed, and while the deceased was away from home, a loaded gun or pistol had been discharged in the same room. This shot the prisoner represented at the time as fired at him; but there were strong grounds, especially from the course of the ball through the shutter, for believing that it must have been done by himself, in order to avert suspicion, and induce the deceased and his servants to suppose that assassins were prowling about the building. Of the same character is the case related by Dr. Hitzig, of a woman who, in order to prepare her friends for an intended crime, sent once a week for arsenic to the apothecaries, for the alleged purpose of killing rats. Possession of the instruments or means of offence, under circumstances of suspicion, are important facts in the judicial investigation of imputed crime. Where a man had in his possession a large quantity of counterfeit coin unaccounted for, and there was no evidence that he was the maker, the presumption is, that he had procured it with an intent to utter it. Facts of this kind become more indicative of guilty purpose, if false reasons are assigned to account for them; as, for instance, in the case of procuring poisons, that it was procured to destroy vermin, which is the excuse commonly resorted to in such cases. A female convicted at the Warwick Summer Assizes, August, 1831, of the murder of her uncle by poison, alleged that she had bought arsenic to poison mice, and pointed to a mouse which she said had been killed by it, whereas it was proved that the mouse had not died from poison.(*i*) To this class of facts may be referred the case of false representations as to the state of another person's health, with the intentions of preparing the connections for the event of a sudden death, and to diminish the

(*f*) Wharton's Cr. Law (3d ed.), 292–297. (*g*) Ibid.
(*h*) Wh. C. Law (3d ed.), 382.
(*i*) R. *v.* Mary Ann Higgins. Lond. Med. Gazette, vol. ix. p. 896, and Annual Register for 1831.

surprise and alarm which attended its occurrence,(*j*) as was done by Capt. Donnellan respecting Sir Theodosius Boughton.(*k*)

§ 1159. It has been remarked that murderers, especially in the lower walks of life, are frequently found busy for some time previous to the act in throwing out dark hints, spreading rumors, or uttering prophecies relative to the impending fate of their intended victims.(*l*) In the case of Susannah Holroyd, who was convicted at the Lancaster Assizes of 1816, for the murder of her husband, her son, and the child of another person, it appeared that about a month before committing the crime, the prisoner told the mother of the child that she had her fortune read, and that within six weeks, three funerals would go from her door, namely, that of her husband, her son, and the child of the person whom she was then addressing. And so, on the trial of Zephon, in Philadelphia, in 1845, it was shown that the prisoner, who was a negro, had got an old fortune-teller in the neighborhood, of great authority among the blacks, to prophesy the death of the deceased. Great caution, however, should be used in sifting this kind of proof, particularly when the persons against whom the presumption is pointed are ignorant and superstitious, since among such, the habit of loose talk of this nature is too prevalent to make an instance of it, when standing alone, any just ground for suspicion.

§ 1160. Threats may also be put in evidence for the same purpose, when they go to show ill will from the defendant to the deceased. Thus, where the prisoner, a negro, said he intended "to lay for the deceased if he froze the next Saturday night," and where the homicide took place that night; where it was said, "I am determined to kill the man who injured me;" where the prisoner had declared, the day before the murder, that he would certainly shoot the deceased; and where the language of the defendant was, "I will split down any fellow that is saucy." Several considerations, however, have already been adverted to, which divert the applications of evidence of antecedent preparations, and which apply with equal force to this head. In addition to these, it is important to observe: 1st. The words supposed to be declaratory of criminal intention may have been misunderstood or misremembered. 2d. It does not necessarily follow, because a man avows an intention, or threatens to commit a crime, that such intention really existed in his mind. The words may have been uttered through bravado, or with a view of intimidating, annoying, extorting money, or other collateral objects. Thus, a man, such as Dr. Parkman, may have frequently been the object of threats or curses of this kind from irritated tenants, and yet it was from a man who used neither, that his death proceeded. 3d. Another person, really desirous of committing the offence, may have profited by the occasion of the threat to avert suspicion from himself. A curious instance of this is given in the Causes Célèbres. A woman of extremely bad character and violent temper, one day, in the open street, threatened a man who had done something to displease her, that she would "get his hams cut across for him." He was found dead a short time afterwards with his hams cut across. This was, of course, sufficient to excite sus-

(*j*) Wells on Circum. Evi. p. 212.
(*k*) See Gourney's Report of the Trial, and *ante*, 1071.
(*l*) 1 Stark. on Evi. 465–66 (3d ed.).

picion against the female, who, according to the practice of continental tribunals at that time, was put to the torture, confessed the crime, and was executed. A person was, however, soon after taken into custody for some other offence, who confessed that he was the murderer; that happening to be passing when the threat was uttered, he conceived the idea of committing the crime, as he knew the woman's bad character would be sure to tell against her. 4th. It must be recollected that the tendency of a threat or declaration of this nature, is to frustrate its own accomplishment. By threatening a man you put him on his guard, and force him to have recourse to such means of protection as the force of the law, or any extra-judicial powers which he may have at command, may be capable of affording to him. Still, however, such threats, as observed by Mr. Bentham, "by the testimony of experience, are but too often sooner or later realized. So to the intention of producing the terror and nothing but the terror, succeed, under favor of some special opportunity, or under the spur of some fresh provocation, the intention of producing the mischief, and (in pursuance of that intention) the mischievous act."

II. Marks of violence.

§ 1161. Marks of violence, in connection with the cause of death, have already been considered. At present they are only to be noticed in connection with the question of intent. It cannot be doubted that when a wound is found to have been inflicted in a secret or concealed part, which is inaccessible in sudden and passionate conflict, it bears a violent presumption of having been the result of design. Thus, the wounds of which the Scotch historian tells as having been inflicted by forcing a heated iron into the fundament, could have been explained in no other way than on the hypothesis that to death was intended to be added concealment. In the same class may be enumerated the thrusting of a needle in the navel of an infant, running a sharp but slight instrument in the cavity behind the ear, dropping corrosive acids into the ear itself, and forcing molten lead down the throat through a tube; of each of which resorts the books give instances.(*n*) The principle on which the presumption of intent can be drawn from such cases is, that a person acting under the impulse of passion is much less likely to inflict a skilful wound, than one whose act is the result of premeditation.(*o*)

§ 1162. Whether the wound was inflicted in self-defence or otherwise; whether it was self-inflicted, or inflicted by a stranger; whether the perpetrator of the crime was an expert or otherwise—may also be deduced from the wound. And the direction of the wound may often be shown for the purpose of testing the validity of a defence. Thus, where the defence was, that the ground being rough and slippery, the prisoner stumbled, and both barrels of the gun had gone off by accident, the defence was confirmed by tracing the direction

(*n*) Mittermaier von Beweise, 402; Demme's Annalen des Criminalrechts, vol. iii. p. 215; Bauer, Theorie des Anzeigenbeweises; Henke, Darstellung, sec. 99; Blanci de Indiciis, Venet, 1545; Reinhardt de eo quod circa reum ex Præsumpt. Convinc. et Cond. Just., &c. Erford, 1732; Heinroth in Hitzig's Zeitschrift, n. 42, p. 257.

(*o*) Presumption from gunshot wound, see *ante*, § 811.

of the shot, which was found to be pointed upwards.(*p*) The difference in appearance between wounds inflicted before and after death, has been already considered.(*q*)

§ 1163. It is by medical testimony alone that the agency of the alleged violence, as a cause of death, is to be determined; and if the death was not accelerated by such violence, the defendant must be acquitted. Thus, in 1847, on a trial for manslaughter, the surgeon who had attended the deceased, stated that on examining her body he had found the mark of an old wound on her head, and a slight bruise on one of her thighs; but he further stated that he made a *post-mortem* examination of the body, and that his opinion was, that the cause of the deceased's death was confirmed consumption, her lungs being tuberculous, and that it had not been accelerated by violence, but was wholly attributable to natural causes. The defendant, under the direction of MURPHY, Sergeant, who consulted with Lord Chief Baron POLLOCK, was acquitted.(*r*) But it is no defence that the deceased was laboring under a mortal disease, if death was accelerated by the defendant's violence;(*s*) and this, no matter how remote the cause, if the intention was to commit an assault, and death resulted.(*t*)

III. INSTRUMENT OF DEATH.

§ 1164. The use of a lethal instrument, knowing it to be such, gives the strongest presumption of design, if the weapon appears to have been used contrary to the defendant's usual custom.(*u*) Whether it was the defendant's custom to carry the particular weapon, becomes, in such case, a material question. Thus, in Selfridge's case,(*v*) where the fatal weapon was a pistol, the defendant was permitted to prove that he had found it necessary to carry such a weapon, in consequence of the danger of being waylaid in his passage between his place of business and his residence in the country. And in the old cases, such as those of Major Oneby and of Mr. Lutterel, it having been the uniform custom of those times for gentlemen to carry swords, no presumption was drawn from the fact that in these instances swords were the instruments of death. But when the weapon by which the homicide was committed was one not usually carried, the presumption is, that it was assumed for the special purpose.

§ 1165. Other inferences are to be adduced from the instrument of death which it may not be out of place here to notice. Suicide may be inferred from the discovery of the weapon near the body.(*w*) This, however, is by no means a certain test. Thus, in July, 1683, the Earl of Essex was found dead in the Tower, with his throat cut, and a razor lying near him. His throat was smoothly and evenly cut from one side to the other, and entirely down to the vertebral column. Notwithstanding this, the razor was found to be much notched on the edge. This fact, those who favored the view of suicide were

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(*p*) Watson on Homicide, § 246.
(*q*) *Ante*, §§ 810–816.
(*r*) R. *v.* Conner, 2 C. and K. 518. See also R. *v.* Crompton, C. and Mars. 597.
(*s*) State *v.* Morea, 2 Ala. 275.
(*t*) Wh. C. L. (3d edit.) 363.
(*u*) See Wh. on Hom. 41, 385.
(*v*) Wh. on Hom. 417.
(*w*) See *ante*, §§ 819, 1130.

asked to explain. They could do so by no other way than by supposing that the deceased had notched the razor by drawing it backwards and forwards on the neck bone. This he could hardly be deemed competent to do after all the great vessels of the neck had been divided. If the weapon be found in the vicinity of the corpse, the question arises whether it could have been placed in its position by the act of the deceased. In the case of Courvoisier, who was tried for the murder of Lord William Russell, there were two facts relied upon to show that this was not a case of suicide. One was, that a napkin was placed over the face of the deceased, and the other that the instrument of death did not lie near the body. To the same point is the case of Jane Norkott, who was found dead in her bed with her throat cut, while a bloody knife was found sticking in the floor a good distance from the bed, but as it stuck the point was turned towards the bed, and the haft from it. This last fact told strongly against the hypothesis of suicide.

§ 1166. On the trial of How, for the murder of Church, in Alleghany County, N. Y., in 1824, it was a material fact that a patch of square home-made linen, which was found near the deceased, being apparently a part of the wadding which was discharged, together with the ball which was the cause of death, was of the make and quality with other patches found almost simultaneously in the box of a rifle in the defendant's possession.

§ 1167. William Richardson was tried at Dumfries, in 1787, for the murder of a young female in the Stewarty of Kircudbright, in the autumn of 1786.(*x*) It appeared from the evidence that the deceased, who lived with her parents in rather a remote part of the district, was, the day in question, left alone in the cottage, her parents having gone out to their harvest-field. On their return home, a little after mid-day, they found their daughter murdered, with her throat cut in the most shocking manner. The circumstances in which she was found, the character of the deceased, and the appearance of the wound, all concurred in excluding any presumption of suicide; while the surgeons who examined the wound were satisfied that it had been inflicted by a sharp instrument, and by a person who must have *held the instrument in his left hand.* On opening the body, the deceased appeared to have been some months gone with child; and on examining the ground about the cottage, there were discovered the footsteps, seemingly, of a person who had been running hastily from the cottage, and by an indirect road through a quagmire or bog, in which there were stepping-stones. It appeared, however, that the person had, in his haste and confusion, slipped his foot and stepped into the mire, by which he must have been wet nearly to the middle of the leg. The prints of the footsteps were accurately measured, and an exact impression taken of them; and it appeared that they were those of a person who must have worn shoes, the soles of which had been newly mended, and which, as is usual in that part of the country, had iron knobs or nails in them. There were discovered also, along the track of the footsteps, and at certain intervals, drops of blood; and on a stile or small gateway near the cottage, and in the line of the footsteps, some marks resembling those of a hand which had been bloody.(*y*) A number

(*x*) Burnett's Criminal Law of Scotland, p. 524 *et seq.*
(*y*) As to foot-prints, see *post*, §§ 1180, 1181.

of persons being present at the funeral, the steward depute, with a view of obtaining some clue to the murderer, called all the men together, to the number of sixty. He then caused the shoes of each of them to be taken off and measured; and after going nearly through the whole number, they came to the shoes of the prisoner, which corresponded exactly to the impressions, in dimensions, shape of the foot, form of the sole, apparently mended, and the number and position of the knobs. (Up to this moment no suspicion had fallen on any one in particular.) The prisoner, on being questioned where he was on the day the deceased was murdered, answered, seemingly without embarrassment, that he had been all that day employed at his master's work. Some other circumstances of suspicion, however, having transpired, he was, in a few days after, taken into custody. On his examination he acknowledged that he was *left*-handed; and some scratches being observed on his cheek, he said he had gotten them when pulling nuts in a wood a few days before. He still adhered to what he had said of his having been, on the day of the murder, constantly at his master's work, at some distance from the place where the deceased resided; but it appeared that he had been absent from his work about half an hour (the time being distinctly ascertained) in the course of the forenoon of that day; that he had called at a smith's shop, under pretext of wanting something, which it did not appear that he had any occasion for, and that this shop was in his way to the cottage of the deceased. A young girl, who was some 100 yards from the cottage, said, about the time the murder was committed (and which corresponded to the time that the prisoner was absent from his fellow-servants), she saw a person, exactly with his dress and appearance, running hastily towards the cottage, but did not see him return, though he might have gone round by a small eminence which would intercept him from her view, and which was the very track where the footsteps had been traced. His fellow-servants now recollected that on the forenoon of that day they were employed with the prisoner in driving their master's carts, and when passing by a wood, which they named, the prisoner said he must run to the smith's shop, and would be back in a short time. He then left his cart under their charge, and they having waited for him about half an hour, which one of the servants ascertained by having at the time looked at his watch, they remarked on his return that he had been longer absent than he said he would, to which he replied that he stopped in the woods to gather some nuts. They observed at this time one of his stockings wet and soiled, as if he had stepped into a puddle, on which they asked him where he had been. He said he had stepped into a marsh, the name of which he mentioned; on which one of his fellow-servants remarked that he must have been either drunk or mad if he stepped into that marsh, as there was a footpath which went along the side of it. It then appeared, by comparing the time he was absent with the distance of the cottage from the place where he had left his fellow-servants, that he might have gone there, committed the murder, and returned to them. A search was then made for the stockings he had worn that day, and a pair were found concealed in the thatch of the apartment where he slept, and which appeared to be much soiled, and to have some drops of blood on them. The last he accounted for, at first, by saying that his nose had been bleeding some days

before; but it being observed that he had worn other stockings on that day, he next said that he had assisted in bleeding a horse when he wore those stockings; but it was proved that he had not assisted, but had stood on that occasion at such a distance that no blood could have reached him.

§ 1168. On examining the mud or sand upon the stockings, it appeared to correspond precisely with that of the mire or puddle adjoining to the cottage, and which was of a peculiar kind, none other like it being found in the neighborhood. The shoemaker was then discovered who had mended his shoes a short time before, and he spoke distinctly to the shoes of the prisoner, which were exhibited to him, as having been those he had mended. It then came out that the prisoner had been acquainted with the deceased, who was considered in the country as of weak intellect, and had on one occasion been seen with her in a wood under circumstances that led to a suspicion that he had criminal connection with her; and on being gibed with having such connection with one in her situation, he seemed much ashamed and greatly hurt. It was proven further, by the person who sat next to him while the shoes were being measured, that he trembled very much, and seemed a good deal agitated; and, in the interval between that time and his being apprehended, he had been advised to fly, but his answer was, "Where can I fly to?" In the prisoner's defence, evidence was brought to show that, about the time of the murder, a boat's crew from Ireland had landed on that part of the coast, near to the dwelling of the deceased; and it was said that some of the crew might have committed the murder, though their motives for doing so it was difficult to explain, it not being alleged that robbery was their purpose, or that anything was missed from the cottages in the neighborhood. On this evidence the prisoner was convicted and executed. Before his death, he confessed that he was the murderer, and said that it was to hide his shame that he committed the deed, knowing that the girl was with child by him. He mentioned also to the clergyman who attended him where the knife would be found with which he had perpetrated the murder. It was found accordingly in the place he described (under a stone in the wall), with marks of blood upon it.(z)

IV. Liability of deceased to attack.

1st. *Possession of Money.*

§ 1169. This opens a wide range of testimony. It is admissible to prove that the deceased had received a considerable sum of ready money just before the fatal moment, and that he might be supposed to have the whole or a part of it on his person. When the defence is passion or self-defence, evidence of this kind is always proper to prove premeditation, though it should have no effect on the jury, unless it be connected by presumption or otherwise with the defendant. If he was not likely from the circumstances to have any suspicion of the fact—if the opportunity of robbing the deceased was not used—if the defendant's means were such as to make the acquisition of money in such sums

(z) Best on Presumption, § 262.

and at such risks out of the range of possible temptation—the fact should not be allowed to weigh. It will be seen at once that not only the deceased's condition and habits—*e. g.*, those which would show the likelihood of his having money on his person at this particular time—but those of the defendant become thus the legitimate subjects of inquiry. So far as the *deceased* is concerned, a very strong tone is lent to this species of presumption by the fact of his being a peddler or itinerant vender of jewelry. The easy exportation of the goods of this class of persons, their usual isolation, and the readiness with which they can be enticed under business pretexts into places where they can be secretly dispatched, contribute to sharpen very much the probability that a violent homicide, of which a person of their calling was the subject, was committed for the sake of gain. On the other hand, the situation of the defendant after the guilty act is to be closely scrutinized. Was there any change in his circumstances exhibiting greater means of expenditure than before? For this purpose evidence is always admissible, showing the unexpected extinguishment of pressing debts, or increase of a bank-balance, or investments or outlay of any kind whatever.

§ 1170. History rather than the records of criminal courts affords examples of cases where homicide has been committed to remove from the assailant's path a party who stood between him and the consummation of his avarice or his ambition. In England, however, the poisoning of Sir Theodore Broughton, in Paris, that of the family of the Marchioness Brinvilliers, and in Belgium, that of Gustavus Fougnies, are conspicuous examples of the judicial punishment of homicide committed for the purpose of removing an obstacle in the way of a descent. And so frequently in that corrupt state of society which preceded the French Revolution was this method of diverting the channel of inheritance resorted to, that a specific under the name of the "Succession Powder" disputed with the "Aqua Tophana" the credit of being the most effectual remedy for this purpose. The inventress of the last-named agent was said to have poisoned six hundred persons, and in Paris at the close of the seventeenth century the practice increased to so alarming an extent that it was necessary to establish an inquisitorial court, called the "Chambre Ardente," for the purpose of watching and acting upon the use of poisons as a social element. By this court two women, named La Vagren and La Voison, were sentenced to be burned alive in 1780; and the sentence was executed. The perfumer of Catharine de Medicis had the reputation of being able to convey poisons through a variety of vehicles, as a jelly or the smell of a rose. Ancient testimony to this effect was very emphatic, Plutarch, Theophrastus, Livy, Tacitus, and Aulus Gellius, uniting in verifying it. That the modern belief was not peculiar to France, nor consequent upon the revelations of the Chambre Ardente, is proved by the fact that it was received in England at the time of Somerset's trial by both sides of that great politico-judicial struggle. Shakspeare thus recognizes the general currency which the opinion had obtained:—

> "Their great guilt,
> Like poisons given to work a great time after,
> Now 'gins to bite the spirits."—*Tempest*, Act III. s. 3.

§ 1171. But however well-founded may have been the then popular belief,

it is clear that if the art ever existed, it is now lost. Dr. Amos, whose authority in this branch of medical jurisprudence rests on the most elaborate research, tells us that "it may now be doubted if a medical man could indicate with certainty any poisonous preparation of which the effect should be fatal, but should nevertheless be suspended for two months or even a week. And perhaps good scientific testimony could be produced, negativing the quality of being a slow poison to any of Franklin's drugs, unless, indeed, they be repeated in slow doses for a considerable period."(*a*)

§ 1172. Neither in England, nor in this country, has there been any recent instance of a trial for homicide in which the motive of succession was supposed to be involved. And indeed it is not likely that in the present popular temper of either country such a species of crime could find place. The abolition of hereditary office takes *patronage* out of the line of descent; and there is therefore no cortêge ready to surround an heir-expectant and to dignify with the title of party spirit what with us would be at once denounced as an example of unnatural crime which is not to be permitted to exhibit itself in the sight of man. The system, also, that obtains among us, of launching young men at an early age into the world on an independent basis of support, relieves them from those positions of luxurious and yet impotent dependency in which the cadets of noble continental families were formerly nurtured. And independently of this, which subtracts in the great mass of cases the motive for this species of homicide, it may not be unsuitable for us to notice a still more fundamental reason in the essential distinction between the Saxon and the Italian or the Italio-Gallican characters. That subtle and tortuous ambition which seeks to reach its object by secret approaches, conducted under the cover of patient and polite servility, is as much an exception with us, as is the more sudden and public manifestation of passion with them.

2d. *Old Grudge.*

§ 1173. In point of law the proof of an old grudge supplies a violent presumption of deliberation. No matter what may be the intermediate provocations, if a *prior* intent to kill exist, that intent will be presumed to continue down to the fatal blow.(*b*) If there has been time for cooling, the prior provocation only goes to prove an old grudge, and to make the offence murder. Thus, in Major Oneby's case—which is the leading one under this head, and has been already cited—the evidence was that the prisoner being in company with the deceased and three other persons at a tavern, in a friendly manner, after some time, began playing at hazard; when Rich, one of the company, asked if any one would set him three half crowns: whereupon the deceased, in a jocular manner, laid down three halfpence, telling Rich he had set him three pieces; and the prisoner at the same time set Rich three half crowns, and lost them to him. Immediately after which, in an angry manner, he turned about to the deceased, and said, it was an impertinent thing to set

(*a*) Great Oyer, 347.
(*b*) Wh. on Hom. 198, *ante*, §§ 972, 1132.

halfpence, and that he was an impertinent puppy for so doing, to which the deceased answered, whoever called him so was a rascal. Thereupon the prisoner took up a bottle, and with great force threw it at the deceased's head; but did not hit him, the bottle only brushing some of the powder out of his hair. The deceased in return immediately tossed a candlestick or bottle at the prisoner, which missed him; upon which they both rose up to fetch their swords, which then hung up in the room, and the deceased drew his sword: but the prisoner was prevented from drawing his by the company. The deceased thereupon threw away his sword; and the company interposing, they sat down again for the space of an hour. At the expiration of that time the deceased said to the prisoner, "We have had hot words, but you were the aggressor; but I think we may pass it over:" and at the same time offered his hand to the prisoner, who made answer, "No, damn you; I will have your blood." After which, the reckoning being paid, all the company, except the prisoner, went out of the room to go home; and he called to the deceased, saying, "Young man! come back; I have something to say to you;" whereupon the deceased returned into the room, and the door was closed, and the rest of the company excluded; but they heard a clashing of swords, and the prisoner gave the deceased the mortal wound. It was also found, that at the breaking up of the company the prisoner had his great coat thrown over his shoulders, and that he received three slight wounds in the fight; and that the deceased, being asked upon his death-bed, whether he received his wound in a manner among swordmen called fair, answered, "I think I did." It was further found that, from the throwing of the bottle, there was no reconciliation between the prisoner and the deceased. Upon these facts all the judges were of opinion that the prisoner was guilty of murder; he having acted upon malice and deliberation, and not from sudden passion. It should probably be taken, upon the facts found in the verdict and the argument of the Chief Justice, that, after the door had been shut, the parties were upon an equal footing in point of preparation before the fight began in which the mortal wound was given. The main point then on which the judgment turned, and so declared to be, was the evidence of *express malice*, after the interposition of the company, and the parties had all sat down again for an hour. Under these circumstances the court were of opinion that the prisoner had had reasonable time for cooling: after which, upon an offer of reconciliation from the deceased, he had made use of that bitter and deliberate expression, that he would have his blood. And again, the prisoner remaining in the room after the rest of the company retired, and calling back the deceased by the contemptuous appellation of young man, on pretence of having something to say to him, altogether showed such strong proof of deliberation and coolness, as precluded the presumption of passion having continued down to the time of the mortal stroke. Though even that would not have availed the prisoner under these circumstances: for it must have been implied, according to *Mawgridge's* case, that he acted upon malice; having, in the first instance, before any provocation received, and without warning or giving time for preparation on the part of Mr. Gower, made a deadly assault upon him.

When there is difficulty in ascertaining the probable perpetrator of a homi-

cide it is desirable, therefore, to consider who there is who had an old grief or cause of provocation against the deceased. For this purpose evidence of threats and hostile declarations is always admissible on trial.

3d. *Jealousy.*

§ 1174. Upon this head, as well as the last, it is not within the province of this work to enter. It is sufficient here to remark, that in inquiring for the supposed agent in a homicide, motives of this class are always a proper topic of investigation.

V. Position of deceased.

§ 1175. That the deceased was found tied is not always a certain ground for assuming that he was the victim of a violent homicide, for cases exist where a party intending suicide has attempted in this way to relieve his memory from the disgrace of self-murder. This, however, is very difficult to effect, and the disguise is readily penetrated. It is far different, however, with the converse, where the perpetrator of a violent homicide endeavors to so arrange the position of the deceased, as to give it the appearance of a *felo de se.* Cases of this kind are numerous, and sometimes the artifice has been so skillfully contrived as for a while to avert the current of suspicion. Thus, in a late case in Mississippi, the deceased was found lying dead with his own pistol in his hand, with which the fatal shot had undoubtedly been fired, and with his body arranged in such a way as to be entirely consistent with the hypothesis of deliberate self-destruction. No question, indeed, as to this being the fact existed, until it was subsequently accidentally discovered that the pistol had been wadded with a piece of paper which was a fragment of a sheet in the defendant's pocket. So, also, on the trial of a German named Papenberg, in Philadelphia, in 1844, it appeared that the deceased was found with a hatchet lying by his side, with the sharp edge of which his throat had been cut, in a manner which made the hypothesis of suicide not improbable. One of the most powerful circumstances in dispelling this hypothesis, and in pointing to the real offender, was the discovery in the pocket of the latter of a handkerchief, in which was marked in blood the profile of the precise weapon with which the wound was effected. In the case of Courvoisier, who was tried for the murder of Sir Wm. Russell, suicide, as has already been mentioned, was set up as a defence, with much show of evidence; but two facts were successfully relied on by the prosecution to rebut it, viz: that a napkin was placed over the deceased's face, and that the instrument of death did not lie near the body. And so Mr. Amos tells us of a trial where the defence of suicide was defeated by the fact, that, while medical observation shows that prussic acid produces *instantaneous* death, the deceased was found with a *corked* bottle in her hand, from which five *drachms* of that particular poison had been taken, and with the bedclothes composed about her person with elaborate precision.(*c*)

(*c*) See *ante*, §§ 810–16, 1146, for discussion of suicidal or homicidal presumptions.

§ 1176. Other points are to be noticed in the same connection. Thus, it is important to examine whether there are marks of a scuffle about the deceased, and what footsteps are noticed leading to or from the *locus in quo*, together with their dimensions and other peculiarities.(*d*)

VI. Materials appropriate to be converted into instruments of crime.

§ 1177. It is here that what the civilians call *indicatory* evidence comes into greatest play. No *deliberate* homicide is committed without preparation, and the more malignantly contrived is the act, the more—such are the sanctions of society—it exposes itself to detection, by the discovery of the trains laid by it for the purpose of effecting the guilty purpose. Thus, in *poisoning*, it is necessary that the poison should have been pre-procured, either in its rudimental or its complete shape. For this purpose it is admissible to show not only, as in Sir Theodore Broughton's case, the possession of the fatal drug, but its purchase, or the purchase of its component elements. Inquiries, also, as to the effect of that particular drug—possession of books in which the nature of poison is described—become pertinent, for, unless the defendant is a scientific man, he must necessarily fortify himself with information before he attempts anything so hazardous as placing in the die both the life of another and of himself. When a gunshot wound is the cause of death, premeditation as well as identity may be determined in the same way. Of course, when fire-arms are habitually used, the possession of powder is of no moment in this respect. But the use of a particular fragment of wadding has often been the means of insuring conviction; and when a party is not in the habit of carrying fire-arms, but assumes them for a particular occasion, this, as has already been noticed, lends a strong presumption of design, if it does not form part of a chain of circumstances, indicating the guilty party. The species of preparation which most often leads to the discovery of the offender, in this class of homicide—particularly among those with whom the carrying of fire-arms is habitual—is the selection or arrangement of a lair or shooting stand, from which the victim can be shot down without arresting the suspicion of himself or the observation of others. In a late case in South Carolina, the only trace by which identity could be pursued was that arising from the construction, by the assassin, of a shed or cover made of boughs of trees, from which the deceased was shot at. Similar to this, was the discovery of a level in a darkened room in a private house, upon which an air-gun had been poised for the purpose of taking a more secure aim. The more artful and skilful is the method of death chosen, the more conclusive is the presumption it affords when discovered. Thus, in the traditionary homicide of Amy Robsart, the fact which defeated the hypothesis of suicide was, that the planks which had been taken up from the floor for the purpose of opening a pit-fall, were so artfully cut out as to enable them afterwards, had it been necessary, to be returned to their former places without the appearance of having been dis-

(*d*) See *post*, §§ 1181–2.

turbed. Hitzig, also, mentions a case where suspicion of a projected homicide, by poisoning, was attempted to be warded off by the prior announcement of a tendency to symptoms, on the part of the intended patient, of the same general character as that which the poison was likely to produce. And nothing added such point and emphasis to the evidence of design in the Webster case, as the presumption existing, that the defendant had prepared beforehand the means of disposing of the deceased's body.

Great care, however, should be exercised in conducting examinations for the purpose of testing how under given circumstances the particular result could have been produced. When the examinations are carelessly and inartificially carried on, their results should be rejected by the court. A strict rein, also, should be placed on experiments carried on during the trial for the purpose of testing the adequacy of supposed agencies. Unless thus guarded, such experiments are apt both to cumber the issue and to mislead the jurors. Take, as illustrating this, the following statement of certain "experiments" made before the jury in a homicide case in Illinois :—

"The door was placed against the shutters in the rear of the judge's bench, and the experiments commenced.

"1. A hole was bored in the head and tyle of the door, and a two-inch screw screwed in. A. Wheaton, a juryman, hung to it, and held.

"2. An inch and a half screw was then used with the same effect.

"3. The juryman stepped off the chair, and the screw gave.

"4. The juryman stepped off the chair, the rope slipped, and the screw was pulled nearly out.

"5. A hook, size of smaller one found in the room, used, and did not give.

"6. Another screw, of same size, used with same effect.

"7. Experiment on last hook ; did not give.

"8. Experiment on plain one and a half inch screw ; did not give.

"9. Same experiment with same effect.

"10. Tried by prosecution, on a hook similar to the one used in No. 5 hook ; the whole broke.

"11. By defence, one of the hooks found in Jumpertz's room ; it did not give.

"12. By prosecution, on same hook in a different place ; hook was bent down.

"13. With the same hook ; juror stepped from the chair, and hook pulled out.

"14. A two-inch screw used, and when juror stepped from the chair, it was nearly pulled out.

"15. A screw found in the room was then used, and when the juror stepped off from the chair, it remained firm."(*dd*)

The Supreme Court very properly said that they did not "approve" of this "exhibition" and "experiments," but at the same time intimated that in themselves they were not ground for a new trial.

(*dd*) Jumpertz *v.* People, 21 Ill. 375.

VII. Detached circumjacent bodies.

§ 1178. Was the deceased's dress torn, his pockets rifled, or were there any traces left by the supposed murderer on the spot? The more artful the design, the more emphatic, as has already been noticed, is the presumption to be drawn from it. Thus, in a case in New Jersey, suspicion was for some time averted by the fact that all the horse-tracks led to the spot, and *none* from it. This, however, tended only to clinch the fact of the defendant's guilt, when it was discovered that the horse which he had ridden that night bore on its hoofs the marks of the shoes having been nailed on *backwards*. So, also, where leaves were used for the purpose of concealing foot-tracks to and from the spot, the presumption against the accused party was certainly not *weakened* by the discovery that the leaves were none of them taken from a level above that which he could conveniently reach, he being, in fact, much below the average height.

§ 1179. A woman was tried in England, in 1818, before Mr. Baron Garrow, for arson. She had been met near the ricks, which were the subject of her incendiary attempt, about two hours before midnight. On one of the ricks was found a piece of woman's handkerchief, and in a tinder-box near the spot was some unburnt cotton rags. On examining the cotton taken from the latter with a lens, it was proved to be of the same fabric and pattern as a gown and some pieces of cotton-print taken from the prisoner's box at her lodgings. A still more conclusive presumption was drawn from the comparison of a half-handkerchief taken from a bundle belonging to the prisoner with the piece found in the rick. A critical examination by experts of the two, showed that they belonged to the same square. It appeared, also, that the hemming in each was of the same breadth—the stitching in each was of the same degree of evenness—and that each was sewed with black sewing-silk, which was the more remarkable from the fact that articles of that character were usually sewed in cotton. Now although these circumstances would have been entirely insufficient to warrant a conviction without proof of guilt *aliunde*, it cannot be denied that they are of much value in relieving the court and jury from that anxiety which must always arise when there is a doubt whether if the circumstances in question had been explored, they would not have tended to have negatived the defendant's guilt. And as the burden of proof is on the prosecution, if it neglects to examine facts like these, the presumption is that if they had been examined, they would have told against it. In this view, as well to promote public justice generally, their investigation is a matter of duty.

§ 1180. In a trial in Philadelphia, in 1844—already mentioned under another head—a handkerchief found on the defendant's person was discovered to be marked with a profile of a hatchet with which the fatal wound had been inflicted. The hatchet itself was peculiarly notched, and a critical analysis showed the marks on the handkerchief to be blood. Other circumstances conspired with this to make the presumption irresistible that the defendant was the guilty agent.

§ 1181. The piecing together of the wadding of a pistol with papers or other material found in a suspected party's possession, is a well known method

of identification.(*e*) It should be observed, however, that this is a species of identification very easily fabricated, as is illustrated by the case of Boynton, in Mississippi, where a scrap of paper from which the wadding was cut, was purposely put in the defendant's pocket in order to inculpate him.

§ 1182. In 1836, a Spaniard, named Palayo, was charged with attempting the life of an officer in the post-office, by depositing in it packets filled with fulminating powder, one of which exploded while in the act of being stamped, causing thereby serious personal injury. The letters, which were in Spanish, and one of them subscribed with the prisoner's name, were addressed to persons in Havana and Matanzas, who appeared to have been the object of the writer's especial malignity. Evidence that the defendant was on the spot, mailing letters, at the particular time, was held to be materially corroborated by proof that the impression on the wax with which the letters were sealed, corresponded with that of a seal worn about the defendant's person.(*ee*)

Footprints, whether of man or beast, lead often in like manner to discovery of the guilty agent. In a case already referred to, which occurred in New Jersey, in 1820, it appeared that the defendant, who was charged with arson, had turned his horse's shoes round, after arriving at the house to be fired, so that there should appear to be *two* persons proceeding *to* and none *from* it. This very artifice, however, was the means of his detection, since the reversal of the shoes, as indicated by the recent marks of the nails on the horse's feet, afforded one of the most emphatic of the indications by which the defendant's guilt was determined.(*f*)

§ 1183. "It is of the utmost importance," says Mr. Best, "to examine minutely for the traces of another person at the scene of death, for it is by no means an uncommon practice with murderers to dispose of the bodies of their victims in such a manner as to lead to a supposition of suicide or death from natural causes;(*ff*) while, on the other hand, persons about to commit suicide, but solicitous to preserve their reputation after death, or their property from forfeiture, sometimes make away with themselves in such a manner as to avert suspicion of the mode by which they came to their end.(*g*) In one case, where a female was found dead in a room, with her throat cut and a large quantity of blood on her person and on the floor, the presence of another person in that room, was demonstrated by the print of a bloody *left* hand on the *left* arm of the deceased.(*h*) Where a man was found dead, with a discharged pistol lying beside him, the hypothesis of suicide from that pistol was rebutted by showing that the fatal bullet was too large to fit it.(*i*) The following case strongly illustrates the difficulties which sometimes attend investigations of this nature. A man on detecting his wife in the act of adultery, fell into a state of distraction, and having at first dashed his head several times against the wall, then struck himself violently and repeatedly on the forehead with a

(*e*) 1 Starkie's Law of Ev. 490; Bentham's Jud. Ev. Book v. ch. xv. 256; Wills' Circum. Ev. 97.

(*ee*) Wills' Circum. Ev. 99.

(*f*) See *ante*, § 1167.

(*ff*) 1 Stark. Ev. 572.

(*g*) Id. 577.

(*h*) Case of Mary Norket and others, 14 Ho. St. Tr. 1324.

(*i*) Theory of Presumptive Proof, App. Case, 2d sec. Also, Beck's Med. Juris. 591–2.

cleaver, until he fell dead from a great number of wounds. All this was done in the presence of several witnesses. But suppose it had been otherwise, and that the dead body had been found with these marks of violence upon it, murder would have at least been suspected.(*j*) And even where there is the clearest proof of the infliction of wounds, still death may have been the result of previous disease, or violence from some other source. Cases illustrative of the former of these are pretty numerous,(*k*) and the two following show the necessity of not overlooking the latter hypothesis.

§ 1184. "At an inn in France, in the year 1808, a quarrel arose among some drovers, during which one of them was wounded with a knife, on the upper part of the *chest*, as also on the face and hand. The wounds were dressed and he left to return home, but the next morning he was found dead, bathed in blood, with the left lung and pulmonary artery cut. His death was at first attributed to the wounds received at the inn, but on a more minute examination this appeared unlikely, and it ultimately turned out that he had been robbed and murdered on his road home.(*l*) In another case, a girl expired in convulsions while her father was in the act of chastising her for a theft, and who was believed both by himself and the bystanders to have died of the beating. Although there were marks of a large number of pretty severe stripes on the body, they did not seem to the medical man who saw it to be quite sufficient to cause death, who therefore made a *post-mortem* examination, from which, and other circumstances, it appeared that the girl had taken poison on finding her crime detected."(*m*)

§ 1185. One of the most remarkable cases of conviction on this species of evidence, is that of George W. Carawan, a deposed Baptist preacher, who was tried and convicted in Beaufort County, North Carolina, in the fall of 1853, for the murder of Clement H. Lassiter. Carawan was a man of great natural force of character, as well as of ingenuity and courage, but was destitute of any further education than he had picked up in mature years; and was sensual, passionate, and unscrupulous. He lived in a section of the country which is peculiarly destitute of the means of instruction, either moral or intellectual. In one district where he had property, and which he occasionally made his residence—an island in Beaufort County, he acquired such a control over his neighbors as to enable him for some time to defy the attempts of the law to secure his arrest. He was over fifty years of age when the murder for which he was tried took place, and had recently married a second wife, almost immediately upon the death of the first, whose end the subsequent developments showed he had at least hastened. Lassiter, the deceased, was a young man of mild disposition, who had been for some time engaged in the neighborhood as a schoolteacher, and who had been employed in the defendant's house in that capacity. When he was residing there the defendant threw out intimations of jealousy as to an intimacy between his wife and Lassiter, though, as the evidence subsequently showed, without any real ground. It appeared

(*j*) Beck's Med. Juris. 562.
(*k*) Several instances of this will be found in Beck's Med. Juris. chap. xv. (7th edit.) entitled "Wounds on the Living Body."
(*l*) Beck's Med. Juris. 558. (*m*) Ibid. 766; Best on Presumptive, § 205.

that previous to the death of Lassiter the prisoner had made threats as to him, and that the deceased entertained fears that he would fall a victim to these threats. On Sunday, the 14th of November, the deceased stayed all night at the house of a man named Dorset Mason, with whom he had been boarding, and spoke of his intention to go on the next day out on the turnpike road to Mattamuskeet Lake to get a school, expressing his fears of the prisoner, and speaking of getting some one to go with him. He left Mason's the next morning, with his carpet-bag, and went to the house of Thomas Bridgman, a neighbor of Carawan, where he dined. After dinner he took his carpet-bag and started on up the road, passing Carawan's house about two o'clock. Carawan was then in the yard, and just before Lassiter appeared went into the house, which was a short distance only from the road, and from which he had an unobstructed view of any and all who might be passing. Lassiter stopped at one or two neighbors, and then passed on along the road towards the lake, and was seen no more alive. Carawan was in his house a short time only after the deceased passed; he then left and went direct across his field and pasture to the woods on the back of his farm, and was soon followed by his wife to the same point, with a double-barrelled gun concealed under her apron. The wife returned shortly to the house without the gun. Carawan disappeared in the woods, and is supposed to have hastened through the woods to a place beside the road, where the murder was committed. Not a great while after Lassiter had gone upon the road a gun was fired in that direction, at quite a distance. Carawan returned to his house at sundown, without his gun. The place was an appropriate one for the perpetration of such a crime, and one likely to be selected. In a few days the non-arrival of Lassiter at his appointment on the lake began to awaken attention. It was ascertained that he had gone that way on Monday. Suspicion began to be excited. His friends became alarmed. It was noised about that he had been murdered. Inquiries were set on foot in all directions, and on Friday a general search was commenced on both sides of the turnpike-road. While the inquiries were going on, the prisoner manifested great interest in the result of them, and made efforts to divert these inquiries into a different channel, suggesting to one of his friends the probability that Lassiter had run away, and before his friend had heard that the deceased was missing. The remarkable fact then was developed that Lassiter's dead body had been carried off a long distance from the road, into a dense and almost impenetrable thicket, and there, beneath the mossy turf of a low bottom, so carefully and adroitly concealed that it seemed impossible that any human search could ever discover its hiding-place.

§ 1186. Two men, on Saturday afternoon, after a long and tedious search, which they were about to abandon as hopeless, were led to this place; but how, they could not tell. No mound was there, or footprints, and the moss was smooth and level all alike. A few lumps of dirt, less than a handful in all, and a decaying limb of laurel that had been overturned, were the sole circumjacent indications. There these men found the body, riddled with shot and bullets, crammed into a hole upon its face, the elbows sticking up, and trampled on, and covered with turf. Though Carawan took no part in the

search, yet he betrayed his interest during its progress, inquiring where and how far it had been made, and where next they proposed to look. And as soon as the result was announced to him, he prepared a budget of clothes and escaped; declaring, as he went, to his nephew and his servant, "Boys, I must go away, or I shall be hung." He told his nephew that if he would tell the people that he was home all day Monday, he would give him the best negro that he had. Some time afterwards he returned to his home by stealth, at night, and surrendered himself to the officers of the law only when he discovered that it was useless longer to hold out. After his arrest, and during his imprisonment, the evidence showed that he was uneasy about the witness whom he had tried to purchase with a bribe, and making further efforts to hire him to leave; in default of this, to get others to get rid of him, "by hook or by crook."

§ 1187. The defendant was convicted; but scarcely had the jury returned their verdict, when he drew from his breast a single-barrelled pistol, rose from his seat in a half sitting posture, leaned forward, and thrusting his arm between two attendants, took deliberate aim at Mr. Warren, one of the counsel engaged in prosecuting for the State, and fired. The ball struck just above the heart, and passing through the lapel of his coat, and cutting the cloth on the breast, struck the padding, and fell to the floor. He then dropped this pistol, and instantly taking another, applied it to his own forehead. One of the officers, observing the movement, seized his arm and pulled it down to the railing of the box, but could get it no further. During this struggle, the prisoner, with great coolness, leaned his head against the muzzle of the pistol and fired, the ball entering the right side of the skull, considerably behind and somewhat above the ear, and traversing the brain until it lodged just over the right eye. He then dropped on his seat senseless, and died shortly afterwards.

§ 1188. One other remarkable incident accompanied this case. There followed the circumstantial evidence, a supplement of direct testimony, which, though for judicial purposes without value, became interesting for the purpose of showing how completely, in this case, presumption was verified by fact. A negro slave, by the laws of North Carolina, is an incompetent witness; and it so happened that there stood behind the trial in this case a negro man named Seth, in whom Carawan placed great confidence, and who was privy to the whole transaction. His statement, as given after the conviction, was as follows: "On Monday night, just before dark (the day on which Lassiter was murdered), whilst Seth was feeding the horses in the stable, his master came to him and told him he wanted him to take an oath to keep secret what he was going to tell him, and made him take the oath. He then told him he had killed Lassiter, and that he must go and help him to bury the body; and to get a pair of leading lines (such as he used to guide the horses in ploughing), and go with him down on the turnpike. The boy got the lines; but asked, as he was about to start, if he was going to leave Carawan Sawyer, and a free negro boy who was then living with Carawan, at home whilst they were gone. Carawan answered that he was not, and then went to the house and sent Sawyer and the free boy to Bell's, as stated in the trial. They then started, and when they got to Yankee field Carawan took a strong rail from a fence which

inclosed a small garden. When they got to the two pines, Carawan led the way a few yards to the bushes, and there lay the body of Lassiter. The negro was terribly frightened, and thought he heard somebody coming on the road, but it was only his heart beating. The coat had been taken from the body, and doubled under it. Carawan said he had done this to keep the blood from running on the ground. He told the negro that he had concealed himself close to the two pines, and just as Lassiter had passed he rose up to shoot him. In taking aim he stepped on a dead bush, which broke under his foot. The noise attracted Lassiter's attention; he turned partly around, and saw him. He cried out, 'O God!' and fell. He rose up straight again, but fell instantly. Carawan sprang into the road, seized the body, and threw it into the bushes, and then with his hands scraped up the blood in the road, and casting it into the ditch, threw some pieces of juniper-wood upon it. He then went to the body, and dragged it further off from the road, took off the coat, doubled it up, and laid the body upon it, so that the coat was directly under the wounds. The first thing Carawan and the negro did was to put the coat upon the body. This was done hurriedly, and then they tied him 'hog fashion,' Carawan pulling the body about, and jerking the line very roughly to tie it; and then they fastened him to the rail. They first attempted to take him through the woods and bushes, direct from the pines to the spot back of the Yankee field, selected by Carawan for the burying place. The negro being much shorter than Carawan, and the ground uneven, they stumbled and fell, and in the darkness found it impracticable to go through that way.

§ 1189. "Carawan then told the negro they must take the road—that if any one should be coming behind or before they would hear in time to step aside in the bushes; but that in fact no one would be travelling at that time of night, especially as it was very cold. They accordingly took the body up the turnpike to the east end of the Yankee field, and then carried it into the woods. They had much difficulty, and fell with the body several times. On such occasions Carawan would fly into a passion and kick both the negro and the body, sometimes stamping the latter. When they reached the spot which Carawan had previously fixed upon, they laid the body down, untied it and prepared to bury it. Carawan first cut the turf with a knife, took it off and laid it aside, the negro helping as he was wanted.

§ 1190. "They then commenced digging the grave with sticks, taking the dirt out with their hands and putting it into their hats, and then throwing it into the woods. They did this in order not to leave any dirt about the grave. Finding this process difficult and tedious, Carawan ordered the negro to go to the house and get a hoe. He said he was afraid to go. Carawan insisted and the negro started, concluding in his own mind to go to the neighbors and betray him. But before he had gone fifty yards Carawan called him back. They then put the body as well as they could into the hole they had partially dug, and covering it over temporarily with the turf left it and went home, taking the rail and line with them.

§ 1191. "On Wednesday, which was a rainy day, Carawan went out alone with a hoe and completed the work of burial." The negro further stated that, as soon as the body of Lassiter was found, Carawan came into the woods

where he and Sawyer were cutting wood and told them that Lassiter was found, and he was going away, as he would be hung if he stayed there—that he should send for his family, and wanted Sawyer to come with them. He then took the negro with him to the turnpike and told him to go up on the road and see if anybody was in sight either way. On his reporting there was none, Carawan crossed the canal, and the negro saw no more of him till he came back from Tennessee. He was constantly on the look-out for his return. He was afraid if Carawan came back and caught him he would kill him. He saw some one cross the yard and go into the house, and as soon as he became satisfied it was Carawan, he ran with all his might to one of the neighbors and told his master had come back.

1192. Akin to this are the results of recent extraordinary exertion on the horse itself, a point which is particularly worthy of consideration, when it was necessary that some distance should have been rapidly travelled in order to enable the suspected party to pass from the spot where the crime was committed to his place of retirement. This is illustrated in the trial of How, who was convicted in Alleghany County, N. Y., in 1824, for the murder of Othello Church.(*n*) The prisoner's house here was some distance from the deceased's, and there were several circumstances (*e. g.* old grudge, &c.) which indicated the defendant as a likely party to have committed the murder. Immediately upon the alarm being given, two of the neighbors took sleighs, the snow being on the ground, and proceeded at once to the defendant's house. The defendant was at home, and nothing particular about his appearance or dress was discoverable. On proceeding to the stable, three horses were found, one dry and blanketed, the next very wet, having the appearance of natural sweat, and was smoking greatly. On this point considerable evidence was taken as to the tendency of horses, when subject to particular diseases, to sweat in the night season in the manner described. There was other evidence with regard to the instrument of death, which left little doubt, and the result was a conviction and a subsequent full confession.

VIII. Possession of fruits of offence.

§ 1193. When property has been taken from the deceased, the possession of it in a third party opens, of course, an important avenue of inquiry. It should not be forgotten, however, that *light* articles, such as form suitable earmarks, would be much more likely to be secreted by an assassin on the person or on the property of another.(*o*) A distinction here exists between articles of great value and trifles, such as may have been collateral to the homicidal intent. The possession of the *first* gives an overweening presumption of complicity; that of the *second*, if there has been time for the purpose, is equally likely to have been the result of the artifice of another.

§ 1194. With regard to the general properties of indicatory testimony, it is important to keep in mind that whatever may be the differences as to its value in other respects, it has some very decided advantages over the direct testimony

(*n*) 2 Wheel. C. C. 412.

(*o*) See *ante*, § 1169.

of a limited number of witnesses, and which are thus clearly stated by Mr. Bentham, "First, by including in its composition a portion of circumstantial evidence, the aggregate mass on either side is, if mendacious, the more exposed to be disproved. Every false allegation being liable to be disproved by any such notoriously true fact, as it is incompatible with; the greater the number of such distinct false facts, the more the aggregate mass of them is exposed to be disproved; *for it is the property of the mass of circumstantial evidence, in proportion to the extent of it, to bring a more and more extensive assemblage of facts under the cognizance of the judge.* Secondly, of that additional mass of facts, thus apt to be brought upon the carpet by circumstantial evidence, parts more or less considerable in number will have been brought forward by so many different deposing witnesses. But, the greater the number of deposing witnesses, the more seldom will it happen that any such concert, and that a successful one, has been produced, as is necessary to give effect to a plan of mendacious testimony, in the execution of which, in the character of deposing witnesses, divers individuals are concerned."(*p*) In short, a conclusion of guilt, deduced from a process of well-collected reasoning, upon evidence purely presumptive, may be quite as convincing, and in some cases infinitely more so, than one arising from direct testimony.(*q*)

D. Infanticide and Fœticide.(*t*)

I. How far fœticide is affected by the degree to which gestation has proceeded.

§ 1195. By the common law, as expounded by the earlier text writers, the destruction of an infant *en ventre sa mere* was a high misdemeanor, no matter what was the stage of gestation;(*u*) and if the death occurred at any time subsequent to birth, the offence was murder.(*v*) The law in respect to fœticide, in England and in most of the United States, it is true, has been settled by statutes which will presently be noticed; but before proceeding to their consideration, it is important to observe that on the general question of the amenability to indictment of the offender in all cases where the life of the fœtus has been destroyed, there has been a concurrence of judicial sentiment wherever the point has arisen. Where such injury has been attempted by violence to the mother, there can be of course no doubt. All assaults are indictable, and the guilty party upon conviction punishable with fine and imprisonment; nor when the offence takes this shape, is it necessary that the aggrieved party should have been even touched. Thus, it has been held that throwing a squib,(*w*) shaking a whip,(*x*) and presenting a gun,(*y*) form an assault; and so far has this doctrine been pushed, that it has been ruled that a party, who enticed a young girl into a private place, and there exposed his

(*p*) 3 Benth. Jud. Ev. 251. (*q*) Best on Presumption, § 194.
(*t*) See this subject medically examined, note, §§ 335–355.
(*u*) 3 Coke's Inst. 50; Bract. I. c. c. 31; 1 Hawk. c. 13, s. 16; 1 Rus. on Cr. 671; Wh. C. L. (3d ed.) 537.
(*v*) R. *v.* Senior, 1 Mood. C. C. 346, Wh. C. L. (3d ed.) 426, 537.
(*w*) 2 W. Bl. 892. (*x*) Wh. C. L. (3d ed.) 545. (*y*) 1 Hawk. c 62, s. 1.

person to her, might be convicted of an assault with an intent to commit a rape, though there was no evidence that he actually touched her.(*z*) Nor is it necessary that there should be resistance, if there be not complicity. Thus, where a medical practitioner had sexual connection with a female patient of the age of fourteen years who had for some time been receiving medical treatment from him, upon the jury finding that the injured party was ignorant of the nature of the defendant's act, and made no resistance, solely from a *bona fide* belief that the defendant was (as he represented) treating her medically with a view to her cure, the fifteen judges of England held that the defendant was guilty of an assault.(*a*)

§ 1196. Where, therefore, there is no statute defining the offence and prescribing a special penalty, there is no doubt that the attempt to commit fœticide by a third party, is unpunishable by an assault, provided the mother be not an accomplice. Where, however, she consents, this form of prescribing must be abandoned, and the term "assault," if inserted in the indictment, discharged as surplusage. In such a state of facts an interesting question arises, which was anticipated in England by the early enactment of a statute providing for the whole subject matter, but which, in the United States, has been the subject of much conflicting adjudication. It being everywhere conceded, that producing the abortion of a *quick* infant is indictable at common law, the courts of Massachusetts(*b*) and of New Jersey(*c*) have held, that unless the infant were quick, the offence was not indictable unless made so by statute. The contrary opinion has been advanced and carried into effect with equal resoluteness by the Supreme Court of Pennsylvania.(*d*) This conflict of authority has been fully considered elsewhere, and it was there maintained, after a full examination of authorities, which it is not necessary now to review, that the protection of the law was cast round an unborn child from its first stage of ascertainable existence, no matter whether "quickening" had taken place or not. Except, however, in those States in which no legislation on this branch of criminal law has been had, and they are but few, the point has ceased to be of practical importance; but in those jurisdictions where the common law still exists untouched, and where there has been as yet no judicial settlement of the immediate question, it may still be contended with far the greater show of reason, if not of authority, that to make the criminality of the offence depend upon the fact of quickening, is as repugnant to sound morals, as it has already been shown to be to just medical judgment. That it is inconsistent with the analogies of the law is shown by the fact, that an infant born even at the extreme limit of gestation, after its father's death, is capable of taking by descent, and being appointed executor.

In most of the States, however, statutory provisions now exist by which fœticide is made the subject of specific penalties.(*e*)

§ 1197. Mittermaier proposes the following points of inquiry:—

1. Whether the pregnant female was aware that the means employed were

(*z*) Hays *v.* People, 1 Hill, 351.
(*a*) R. *v.* Case, 1 Eng. R. 544.
(*b*) Com. *v.* Parker, 9 Met. 263; Com. *v.* Bangs, 9 Mass. 387.
(*c*) State *v.* Cooper, 2 Zabriskie, 57.
(*d*) Com. *v.* Demain, 6 P. L. J. 29; Mills *v.* Com. 1 Harris, 631.
(*e*) Wh. C. L. § 1214, &c.

such as, *under the circumstances*, would be likely to produce abortion, or to effect the death of the child in the womb.

The same author remarks that the question whether the means used were means for producing abortion is not pertinent, since all such means may also serve other purposes. Everything depends upon the circumstances under which the means were used. As, for instance, grains of ergot, savin, and all such so-called means of abortion, if taken in small doses and continued only for a short time, will have no such effect. The same is also true of the mechanical means employed.

§ 1198. 2. *Has the accused employed certain supposed means?* The physician will seldom be able to answer this question positively. There are no means which are attended with such peculiar symptoms as to leave no doubt that they were employed. The appearances resulting from the use of mechanical means may also be produced in many other ways. Hence, in such cases, other evidence must be sought in addition to that offered by the physician.

§ 1199. 3. When the result proper to the employment of certain means is observed, and when it is established that the accused actually employed such means, may the result be attributed to the use of the means?

§ 1200. Upon this point Mittermaier very properly remarks that it cannot be concluded simply because abortion has followed the use of certain means of abortion, that it actually resulted from the use of such means. In some such cases it may be shown that the abortion did not result from the means employed, but was produced by some other circumstances. In each case the physician should be very careful to examine whether any such circumstances exist.

To these questions proposed by Mittermaier, Dr. Böcker(*f*) adds the following.

§ 1201. 4. Whether means have been employed which could produce abortion?

Everything here depends upon the manner in which such means were used. A pregnant woman may eat, for instance, once or twice a day a grain of ergot without detriment, while twenty grains taken daily for a week together would certainly cause abortion.

5. Has there been a miscarriage?

6. Did the fœtus in question come from the accused?

7. What facts are there which lead to the conclusion that the abortion was produced intentionally on the part of the mother, or of some other person, or that it occurred through carelessness or from accident?

While it is possible to produce abortion by the use of certain remedies, and also by mechanical means, yet it will be very difficult to prove in any given case that the abortion resulted from the use of such means, or that the use of such means caused the child to be born dead.

(*f*) Gericht. Med. § 115.

II. How far the offence is affected by the fact of birth.

§ 1202. While, as has been seen, it is a misdemeanor at common law to kill a child in its mother's womb, the offence becomes murder if the child dies after birth in consequence of violence inflicted before delivery. It was decided, in fact, at a very early period, that if a child die *after* birth in consequence of a potion or bruises administered *before*, the offence is murder.(*o*) And *a fortiori*, when a blow is inflicted on a child's head *during* birth, and it is afterwards born alive, and then dies, the same result obtains.(*p*) But the fact of actual birth must be shown, and mere breathing is not enough for the purpose.(*r*) It is no defence that the child died in consequence of want of viability, resulting from premature delivery, if this delivery was caused by the defendant's misconduct in bringing about a miscarriage for the purpose of destroying the child.(*s*)

§ 1203. The confidence reposed by courts in former days on the hydrostatic test was entire; and several executions took place on testimony of viability of this character alone. Such, however, is no longer the case. On the trial of a woman in 1835, at Winchester Spring Assizes, in England, it was proved that the lungs were inflated; but on cross-examination the medical witness said that if the child had died *during* birth the lungs might have been inflated. As the question of guilt depended upon the child having been *born* alive, and as the fact of the inflation of the lungs was the only evidence of life that was produced, Mr. Baron Gurney stopped the case.(*t*) A single sob during birth is enough to produce inflation.(*u*) And where on an indictment for infanticide it appeared in evidence that the child's throat was cut, the wound dividing the right jugular vein, and that the lungs floated in water, and proved to have been inflated; but the medical evidence showed that this test only proved that the child must have breathed, and not that it had been born alive; and that there were instances of children being lacerated in the throat in the act of delivery. Mr. Baron Parke told the jury that if they entertained doubts as to whether the child was born alive, it was hardly necessary to go into evidence on behalf of the prisoner. The jury, without going further, returned a verdict of acquittal.(*uu*)

III. Tests of viability recognized by the courts.

§ 1204. Some fluctuation of sentiment has existed as to how far it is necessary for the child to be actually produced.(*v*) While, on the one hand, it is not enough for the child to have breathed, unless the whole body was brought into the world,(*w*) and while more than one learned judge has expressly ruled

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(*o*) Wharton on Hom. 93–8; Wharton's Crim. Law, §§ 942, 1220.
(*p*) R. *v.* Senior, 1 Mood. C. C. 346.
(*r*) Wharton's Crim. Law, §§ 942, 1220.
(*s*) R. *v.* West, 2 Car. & Kir. 783; Wharton on Hom. 192–94.
(*t*) R. *v.* Simpson, Cummin on the Proof of Infanticide, p. 40.
(*u*) R. *v.* Davidson; 1 Hume's Com. 486.
(*uu*) R. *v.* Grounell, Wills on Circum. Ev. 205.
(*v*) As to viability, see *ante*, §§ 356, 378.
(*w*) R. *v.* Poulton, 5 C. & P. 329; R. *v.* Enoch, 5 C. & P. 539; R. *v.* Wright, 9 C. & P. 754.

that there must be an entirely independent circulation,(*x*) on the other hand, the fifteen judges have united in holding, that to constitute such an independent existence, so as to constitute murder, it is not necessary that the child should have breathed,(*y*) nor that the umbilical cord should be severed.(*z*) For this conclusion two reasons are given; one rested on legal, the other on medical foundation. "If that" (the reverse) "were the law," said Vaughan, J., "the child and the after-birth might be completely delivered, and yet, because the umbilical cord was not separated, the child might be knocked on the head and killed, without the party who did it being guilty of murder."(*a*) In another case, on the part of the prosecution, there was strong evidence to prove that the child had been wholly produced alive from the prisoner's body, and that she had strangled it by fastening a handkerchief, or some such thing, around its throat; but it was clearly proved by Mr. Wood, the surgeon who examined the body of the child, that it must have been strangled before it had been separated from the mother by the severance of the umbilical cord; and it was further stated by Mr. Wood that a child has, after breathing fully, an independent circulation of its own, even while still attached to the mother by the umbilical cord; and that, in his judgment, the child in question had breathed fully after it had been wholly produced, and had, therefore, an independent circulation of its own before and at the time it was strangled; and was then in a state to carry on a separate existence. "If you are satisfied," said Erskine, J., to the jury, "that this child had been wholly produced from the body of the prisoner alive, and that the prisoner wilfully, and of her malice aforethought, strangled the child after it had been so produced and while it was alive, and while it had, according to the evidence of the surgeon, an independent circulation of its own, I am of opinion that the charge is made out, although the child, after it was so strangled, still remained attached to the mother by the navel string." The prisoner was convicted, and upon a case reserved, the judges held the conviction right.(*b*)

§ 1205. The following legal propositions may be considered as now undisputed:—

(1.) Where there is a malicious wound inflicted on an infant, with intent to produce death, and death ensues *after birth*, the offence is murder.

(2.) Where there is a malicious exposure of an infant, with intent to produce death, and death ensues *after birth*, it is murder.

(3.) Where there is a wanton exposure of an infant, without the intent to produce death, but with the expectation of shifting the support of the infant upon some third person, and death ensues *after birth*, it is manslaughter.

(4.) Where there is an exposure resulting from necessity, ignorance, or insanity, and death ensues *after birth*, the offence is excusable homicide, in which, in accordance with an American practice, the defendant is entitled to an acquit-

(*x*) Parke, J., R. *v.* Enoch, 5 C. & P. 539; Gurney, B., R. *v.* Wright, 9 C. & P. 754.
(*y*) R. *v.* Brain, 6 C. & P. 349.
(*z*) R. *v.* Trilloe, 1 Car. & Mars. 650; S. C. 2 Mood. C. C. 413.
(*a*) R. *v.* Reeves, 9 C. & P. 25.
(*b*) R. *v.* Trillor, 1 Car. & Mars. 650; S. C. 2 Mood. C. C. 413.

tal. The leading cases from which these principles are extracted, are as follows :—

§ 1206. Ann Walters, the prisoner, who was an unmarried woman, had taken a place in a stage-wagon, on the 13th of April, 1841, and started in the wagon at about ten o'clock on that night, at the Wellington Inn, which is situated on the Malvern Hills. The evidence showed that she must have left the wagon after that time, as she overtook it at Ledbury. It further appeared that she was delivered of a female child at the roadside, between the Wellington Inn and Ledbury, and that, after the child was born, she had carried it a distance of about a mile to the place at which it was found dead, which was also at the roadside. It further appeared that this was a much frequented road, and that two wagon teams and several persons were on it about the time at which the child was left; and that a wagoner, named Weaver, who was passing along the road, heard the child cry, but, instead of going to tender any assistance, he went on, and told some other persons, who went to the place where the child lay, and there found it dead from cold and exhaustion. The body of the child was found quite naked. It further appeared that the prisoner had arranged with a woman named Thomas to be confined in her house. It was urged for the prisoner by Mr. Charles Phillips, the eminent criminal barrister, that it was clear that the prisoner had no original intention of destroying the child, as she had made arrangements for the taking care of it. He insisted, also, that there was equally little doubt that she had got out of the wagon when seized with the pains of labor; that she had carried the child, after its birth, as long as her strength would allow, and that she had then laid it on the roadside, hoping that some passer-by would render it assistance. Mr. Justice Coltman told the jury—and his charge has since been uniformly followed—that if a party do any act with regard to a human being, helpless and unable to protect itself, which must necessarily lead to its death, the crime amounts to murder; but if the circumstances are not such that the party must have been aware that the result would be death, that would reduce the offence to the crime of manslaughter—provided the death was occasioned by an unlawful act, but not such as to imply a malicious mind. There have been cases, he said, where it has been held that persons leaving a child exposed and without any assistance, and under circumstances where no assistance was likely to be rendered, and thereby causing the death of the child, were guilty of murder. "It will be for you," he continued, addressing the jury, "in the present case, to consider whether the prisoner left the child in such a situation that, to all reasonable apprehension, she must have been aware the child must die, or whether there were circumstances that would make it likely that the child would be found by some one else, and its life preserved, because then the offence of the prisoner would be manslaughter only. It is impossible to say that the offence of the prisoner could be less than manslaughter. It is for you to consider whether, under all the circumstances, the child was left in such a situation that there was a reasonable expectation that it would be taken up by some one else and preserved. Suppose a person leaves a child at the door of a gentleman, where it is likely to be taken into the house almost immediately; it would be too much to say, that, if death ensued, it would be

murder: the probability there would be so great—almost amounting to a certainty—that the child would be found and taken care of. If, on the other hand, it were left on an unfrequented place, a barren heath, for instance, what inference could be drawn, but that the party left it there in order that it might die? This is a sort of intermediate case, because the child is exposed on a public road, where persons not only might pass, but were passing at the time; and you will, therefore, consider whether the prisoner had reasonable ground for believing that the child would be found and preserved." The jury rendered a verdict of guilty of manslaughter.(*c*)

§ 1207. In a case tried in Pennsylvania, in 1846, before Chief Justice Gibson, Bridget Harman, a married woman, in very destitute circumstances, who had been, it was alleged, deserted some time previous by her husband, was indicted for the murder of a female infant child, at the time nine months old. The evidence showed that at 6 A. M. on the 11th of August, 1846, she had taken the child away from the house where she then lived, and at 9 A. M. she returned, saying she had given it away. She was seen shortly after she left, with a shovel, going towards a stream in which the remains of the child were subsequently found. No question existed but that, under the circumstances, if the defendant was guilty at all, she was guilty of murder in the first degree, of which crime she was convicted, though never executed.(*d*)

IV. Corpus delicti in infanticide.

§ 1208. Mr. Wills, in his very interesting work on Circumstantial Evidence, discusses with much ability the difficulties attending the proof of the corpus delicti in cases of infanticide. These difficulties may be enumerated as follows:—

§ 1209. (1.) *The uncertainty as to the fact of pregnancy.*—The history of the English queens, Mary I. and Mary II., with each of whom spurious gravidity was frequently mistaken for pregnancy, singularly illustrates this. In a case tried in Lancaster, in 1808, before Mr. Justice Chambre, the suspicion of pregnancy arose principally from the bulk of the deceased while living, coupled with circumstances of conduct which denoted the existence of an improper familiarity between the parties, and from the discovery, upon post-mortem examination, of what was supposed to be the placental mark. The medical testimony was very divided. On the one side it was proved that the deceased was subject to obstructions; that the appearance of the uterus might be accounted for by hydatids, a species of dropsy, in that part of the body; and that what was thought to be the placental mark might be the *pediculi* by which they were attached to the internal part of the surface of the womb. On the other hand, four medical witnesses expressed a decided opinion that the deceased had been recently delivered of a child nearly come to maturity. The learned judge charged the jury that it was a mere matter of conjecture, *first*, whether the deceased had been with child; and *secondly*, whether she had been the subject of the alleged abortion. The defendant was acquitted.(*e*)

(*c*) R. *v.* Walters, 2 Car. & Marsh, 170.
(*d*) Com. *v.* Harman, 4 Barr. 269.
(*e*) R. *v.* Angus, Burnett's C. L. of Scotl. 575. In a case which has been already

§ 1210. (2.) *The uncertainty as to the time of death.*—We have already noticed the difficulties which arise when it is necessary to determine whether the child died *before* or *after* birth. The law, as has been seen, is, that if the death occurs *after* birth, it is murder; if it occurs before birth, it is but a misdemeanor at common law. It is not necessary at this point to do more than to refer to the views already expressed as to the physiological facts bearing on this point.(*f*)

§ 1211. (3.) *Presumptions which bear with great force in ordinary cases of homicide apply much more weakly to cases of infanticide.*—"Concealment of pregnancy and delivery," says Mr. Wills, "may proceed even from meritorious motives; as where a married woman resorted to such concealment in order to screen her husband, who was a deserter, from discovery."(*g*)

§ 1212. (4.) *Gestation and delivery, under the most favorable circumstances, are attended with casualties; and in cases of clandestine and illegitimate delivery this must be still more strongly the case.*(*h*)

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given, a young girl, under the delusion that she had really been confined, made confession of the birth and murder by herself of an illegitimate child, and might have been convicted, had there not been a medical examination showing that no confinement had taken place. *Ante*, § 989; and see generally *ante*, §§ 310, 329.

(*f*) See *ante*, Book II.

(*g*) Wills on Circum. Ev. 206; see *ante*, § 1027.

(*h*) See *ante*, §§ 378–398.

BOOK VII.

LEGAL RELATIONS OF IDENTITY.

A. Of persons living, § 1213.
1st. By direct evidence, § 1213.
a. Appearance, § 1213.
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5th. Clothing, § 1225.

A. Of Persons Living.

§ 1213. 1st. *By direct evidence. a. Appearance.*—Identification of the person seen with the person accused is established by the testimony of witnesses who have known him long enough to have his appearance impressed firmly on their memory. Such is the evidence of neighbors, old acquaintances, and relatives. Numerous instances, however, have occurred in which such witnesses have been entirely mistaken. Such was the celebrated case of *Martin Guerre* and *Arnaud du Tilh*, which was tried before the Parliament of Toulouse, France, in 1560. Martin Guerre had been absent from home some eight years, when a person, afterwards proved to be Arnaud du Tilh, appeared and represented himself as the long absent man. So great was the resemblance, that his word was considered true by all of Guerre's family, including his wife, four sisters, and two brothers-in-law. He lived with Guerre's wife three years, and had two children by her. About this time some circumstances occurred to cause suspicions in regard to the true character of the supposed husband, when he was arrested and brought before the criminal judge of Rieux to answer to a charge of fraud. Upon his examination, he answered satisfactorily the most minute inquiries in relation to the former life of Martin Guerre. Some one hundred and fifty witnesses were examined during the investigation, of whom between thirty and forty testified, from a lifelong acquaintance, that the prisoner was Martin Guerre, while about the same number swore positively that he was Arnaud du Tilh, whom they well knew; and over sixty, who knew

them both, declared that they were unable to say which the prisoner was. The prisoner, however, was condemned to death, when an appeal was taken to the Parliament of Toulouse. Here the difficulty continued; a large number of witnesses testifying to the identity of Guerre and the prisoner, and an equal number denying it. Among the former were *the four sisters of Martin Guerre.* Finally, however, Martin Guerre himself appeared, and then the relatives were requested to say which was the real *Martin*, when they were both together. Immediately the sisters distinguished and recognized their brother. No doubt now remaining as to the guilt of the prisoner, he was condemned, and afterwards executed.

§ 1214. The peculiarities in the appearance of a criminal, as observed about the time of the commission of a crime, corresponding to similar circumstances in the appearance of the accused, form an important means of identification. Among these the following may be mentioned:—

Size.—Any difference from the ordinary stature or size of the body, as where a person is unusually tall or short, corpulent or slim, at once strikes our attention, and is remembered, under impressive circumstances, with more distinctness than more minute points.

Dress.—This is also one of the principal points that strike the attention in observing a person under suspicious circumstances. In Barbot's case(*a*) the peculiar dress of the prisoner was the means of identifying him.

A woman was tried at Warwick Spring Assizes, 1818, before Mr. Baron Garrow, for the crime of arson. The prisoner had been met near the ricks which were set on fire, about two hours after midnight. A tinder-box was found near the spot, containing some unburnt cotton rags, and a piece of woman's neckerchief was found in one of the ricks where the fire had been extinguished. The piece of cotton in the tinder-box was examined with a lens, and the witness deposed that it was of the same fabric and pattern as a gown and some pieces of cotton print taken from prisoner's box at her lodgings. A half neckerchief taken from a bundle belonging to the prisoner, and found in her lodgings, corresponded with the color, pattern, and fabric of the piece found in the rick, and it was deposed that they both belonged to the same square; and from the breadth of the hemming, and the distance of the stitches on both pieces, were hemmed with black sewing-silk of the same quality (whereas articles of that description are generally sewed with cotton), the witness clearly inferred that they were the work of the same person. The prisoner was capitally convicted, but there being reason to believe that she was of unsound mind, she was reprieved. Evidence of this kind must, however, be admitted with caution. On the trial of a young woman for child murder, it appeared that the body of a newly-born female child was found in a pond about a hundred yards from her master's house, dressed in a shirt and cap; and a female witness deposed that the stay or tie which was pinned to the cap, and made of spotted linen, was made of the same stuff as the cap found in the prisoner's box; but a mercer declared that the two pieces were not only unlike in pattern, but different in quality.(*b*)

(*a*) 18 State Trials, 1229.

(*b*) Wills, Circumstan. Ev. 96.

§ 1215. Mr. David Paul Brown gives us the following narrative :—

"In 1821, an action was instituted by Mary M'Creth against William Dickinson, administrator to the estate of Captain Talbot, who, as was alleged by him, was an Englishman. Mrs. M'Creth, however, averred that Talbot was her brother, and an Irishman, and that, as his only relative, she was entitled to his estate. On the part of the claimant, the evidence by writing and parol was exceedingly strong. Mrs. Lee, one of her witnesses, swore to an acquaintance with the captain for fourteen years before his death, during all which time he lived in the same house with her. He spoke only of one sister; said her name was M'Creth, and she lived in London; that she was so young when he came away, that she would not now know him. He wished to name Mrs. Lee's child Mary, after his sister. He was in the Liverpool trade; had frequently been there, but said he could not leave his ship to go and see his sister. He never spoke of any other relative. He had a letter in his writing-desk, which he said was from his sister, and requested it to be read to him while on his death-bed. In addition to this, the letter from Mrs. M'Creth was produced, stating where she lived, and how long she had there lived. And a Mr. Leary was produced to prove her actual residence, and identify her person. A letter in answer to this was also produced by her from Captain Talbot. In Mrs. M'Creth's letter, she states her poverty; writes by way of Liverpool; requests her brother to direct his letters to No. 2 Lombard Street, London, and further states: 'You may not be acquainted with my marriage, since I was, you know, very young when you left Newport, county Tipperary, Ireland.' This letter was found among his papers; he declared it to be from his only sister, and showed his sincerity by keeping it for ten or twelve years. In health, sickness, and insanity, he always spoke of his sister, and never of any one else. Upon these facts it appeared to be clear that he was an Irishman.

§ 1216. "On the other side, however, they attempted to show that Captain Talbot had always said 'that he was an Englishman; that he had four or five sisters; that Dickinson was the son of one of those sisters.' A petition by the captain for letters of naturalization, in which he states 'that he is a subject of the King of Great Britain,' was produced, which, however, was a little equivocal in its operation, as Ireland might be considered as embraced by the term 'Great Britain.' But to strengthen the defence, a number of sea-captains testified 'that Talbot had frequently told them he was born in England.' A portrait was also produced by Mrs. Lee, at whose house the captain died, which was said to bear a strong resemblance to the deceased; but even this did not remove the difficulty; for while one-half of the witnesses swore that it was the very counterpart of the English Captain Talbot, the plaintiff's testimony was just as strong to show that it was an admirable likeness of the plaintiff's brother, whom they professed to know, and that it even bore a strong family resemblance to the sister (the plaintiff).

§ 1217. "Mr. John K. Kane (the present judge of the District Court of the United States), was the counsel for the defendant. He enforced the testimony for the defence with great ingenuity and ability, and manifested no less skill and power in his assaults upon the evidence for the plaintiff. His theory was, that loose impressions, derived from thoughtless conversations of Captain

Talbot, many years ago, had been misunderstood, or misrepresented by the plaintiff's witnesses; that it was exceedingly improbable that Captain Talbot should sail to Liverpool for years, and never visit his only sister, who was in London, but about two days' journey; that the letter received by him was supposed by him to be from the mother of the defendant, whose name was also Mary, a favorite sister, whose husband's name he probably supposed to be M'Creth; that he had written his letter under that impression, and that the letter intended for one of these women fell into the hands of the other, and produced all this confusion. He dwelt, also, upon the want of credibility of some of the plaintiff's witnesses, and the bias and interests of others; he adverted to the fact of many years having elapsed without the plaintiff's asserting her claim; and he planted himself firmly upon the petition for naturalization signed by Captain Talbot, and stating himself to be a native of Great Britain. He also maintained, that the portrait itself bore strong marks of English peculiarity of feature; and, lastly, that the defendant, being in possession of the property, was not to be deprived of it, but by conclusive, or, at least, most satisfactory proof on the part of the plaintiff, who could not be entitled to recover upon a doubtful title.

"The answer on the part of the plaintiff, by David Paul Brown, was, that it was not more remarkable that Talbot should not visit the plaintiff, than that he should not have visited the mother of the defendant, whose residence was proved to be nearer to London than Liverpool; that if he had not been born in Ireland, he never could have recognized the truth of the letter found in his possession, 'referring to the time when he left his sister Mary, in Newport, Tipperary, Ireland;' that if the witnesses were doubtful, the letter was unquestionable; that Captain Talbot could not have supposed that the letter was from the defendant's mother, consistently with the notion that he was an Englishman; and, if he was not an Englishman, there was no defence. The credit of the plaintiff's witnesses was maintained, and that of the defendant's impugned; the fact of the mother of the defendant being rich, and the plaintiff poor, was referred to as corroborative of the relationship of the latter to the deceased, who had said 'that he had but one sister, and that she was poor, though respectable;' this poverty was also relied upon to explain her not having earlier instituted legal proceedings. As to the petition for naturalization, its apparent inconsistency with the plaintiff's claim was accounted for by its equivocation—by its having been loosely filled up, and carelessly signed—and instances confirmatory of this notion were cited; the matter of place of birth, as indicated by the portrait, was also minutely discussed, with very opposite deductions from those drawn by Mr. Kane; and, in conclusion, the plaintiff's counsel maintained that, although he had not established an unquestionable claim, his proofs far outweighed those of the defendant, and, that the principle which obtained in criminal cases, that a reasonable doubt should discharge the defendant, did not prevail in civil suits. The case, nevertheless, resulted in a judgment for the defendant, and the poor plaintiff passed the remainder of her days in penury and misery, maintaining to her last moment her claims to the Talbot estate."(c)

(c) 2 Brown's Forum, pp. 508–513.

§ 1218. In 1857, the body of a young woman, upon whom an abortion had been produced, and who had been murdered by a blow upon the head, was found in a ploughed field near Newburg, New York. The body was supposed to have been identified as that of Miss Sarah Bloom, and a man named Jenkins, with whom Miss Bloom was last seen, was arrested, and already a strong chain of circumstantial evidence, fixing, it was thought, the murder upon him, was made out. Jenkins insisted that the corpse was not that of Miss Bloom, and sure enough, after four days, when the mysterious corpse had been buried, Miss Bloom made her appearance alive and well. The resemblance between herself and the corpse, however, was so striking as to increase the caution with which similar cases should be regarded in future. The body had a scar on the left eyebrow precisely where Sarah has one; the body had a cut on the main finger of the left hand precisely where Sarah has one of the same character; the body has a small black mole about half way between the ankle and the knee, on the shin bone, exactly where Sarah has one; but strangest of all, the body has two toes of the left foot grown together, precisely like Sarah's, except that Sarah's are not grown together so far down on the joint; the toes of both feet of the body, like Sarah's, were pressed together from wearing tight shoes, and Sarah wears a coral ring on just the finger from which on the corpse a ring had been stripped. These facts, connected with Sarah's absence, the remarkable story of Jenkins as to where he had left her, the incident of her going in a direction where she did not hear of the discovery of the body, and was not herself heard from for four days, combined to make a case of indicatory evidence on which a conviction might well have rested.

§ 1219. *b. Voice.*—Peculiarity of voice always makes a strong impression on the mind of an observer, and is a valuable assistance in identification. In Harrison's case,(*d*) a witness testified that on the night when the deceased was found strangled in a hackney coach in the street, she saw a coach stop at a place named, and heard a person in the coach tell the coachman to go to a certain house, and when he did not go fast enough she heard him swear at him for going so slow. Afterwards she saw the coachman return with the deceased who entered the coach. The witness upon hearing the voice of the prisoner declared that it was the same she heard swear at the coachman on the night in question, and in this way led to an entire identification.

§ 1220. *c. Marks.*—Besides the general appearance, dress, manner, and voice of a person, peculiar marks upon the body are a very important, perhaps much the most reliable, means of identification. Scars, burns, cicatrices, fractures, &c., upon some portion of the body of the prisoner, distinctly remembered by those who have seen them, will generally be received as evidence of identity. Very often where the scars resemble each other they may have been caused by different agencies. In such cases the evidence of physicians can be brought to testify as to the cause of the wound. Still such evidence is not always reliable, for a mark of such a nature may exist from exactly the same cause in two different persons. It goes, however, a great way in establishing identity, and is generally conclusive, unless rebutted by stronger contradictory evidence.

(*d*) 12 State Trials, 850, 860, 861.

According to Böcker,(*e*) the gender, age, size, stature, walk, bearing, color of hair and eyes, shape of eyes and nose, appearance of teeth, the condition of the hands, feet, bones, and joints, must be observed, together with changes produced by pregnancy, birth, miscarriage, disease, &c. Moles leave important evidence, which continue throughout life, unless cut away, and then a scar remains. Marks of branding and of tattooing are often also permanent, though it should be observed they may be fabricated. Scars from injuries or disease can often be observed for a long time. In reference to the hair, it is to be observed that there are various means of changing its color. Different employments often impart some peculiarity to the hands or other organs.

The above rules apply also to the examination of a dead body, in case the appearance has not yet been affected by decomposition.

§ 1221. *d. Daguerreotypes and portraits.*—This method is now coming in vogue in the police departments of our great cities. Its practical value in the determination of questions of identity has not yet been the subject of legal consideration.(*f*)

Pictures, however, have not been without their use for detective purposes. A capital conviction is reported by Mr. Wills to have been secured by the prisoner having given his portrait to a youth, which enabled the police, after watching a month in London, to recognize the culprit.(*g*)

(*e*) Gericht. Med. § 138.

(*f*) For the following note I am indebted to the officers having charge of this special department (1860) in the Mayor's office in Philadelphia.

"During the mayoralty of the Hon. John M. Scott, in 1842–43, rough pen and pencil sketches were made of the countenances of the prisoners—the remembrance of whom it was thought desirable to perpetuate. Of these there now remain on file, &c., sketches of twelve individuals; this may be considered as the first approach towards the formation of a Rogues' Gallery; these have been found useful in a number of instances. During the administration of Mayor Gilpin from 75 to 80 daguerreotypes and ambrotypes of noted men in police annals were made the nucleus of a gallery, though kept in a trunk under lock and key most of the time. They were seldom exhibited to others than officers of the detective department of police. With the present administration the gallery of photographs commenced, and has been carried forward to its present condition, numbering now (April 24, 1860) 266 portraits. It has been thought desirable, in furtherance of police ends, to add, as far as possible, the portraits of men, notorious in other cities, but who occasionally visited us professionally. Exchanges have been made to some little extent with New York, Albany, Pittsburg, &c., and pictures received have been hung up in our gallery. As it regards the *pictures* of men known to the police as rogues of a high grade, very few of these, as yet, are known to exist, in any portion of the land. Generally, these men will *not*, under any consideration, sit for their portraits. When in custody, and are therefore secure, the question is often asked, How do you get the consent of these men and women to sit and have their likenesses taken to be hung up for general exhibition? The answer is, Sometimes by threats of thirty days' imprisonment, as the alternative of refusal; at others, and in most cases, the parties have been arrested for the commission of some crime, and having years of imprisonment before them, are reckless and regardless of consequences so far as their pictures are concerned, and yield readily to the demand therefor. The greater portion of the pictures in our gallery are the pictures taken under these circumstances; and, therefore, for any practical purposes, are by the writer deemed almost useless—especially so with regard to the younger portion of them. They alter so materially in person, &c., as often to be hardly recognized after years of imprisonment.

"The one great idea in the establishment of a Rogues' Gallery should be to enlarge the acquaintance of detective officers with individuals, with whom they have to do, and thus to give the officers greater facilities in the performance of official duty."

(*g*) Wills, Circum. Ev. 95.

§ 1222. 2d. *By inferential evidence. a. Presence in the neighborhood.*— When a person very strongly resembling the accused was seen in the neighborhood of the alleged crime, it is very strong evidence of identity. Evidence of proximity, and that of presence as inferred from it, may sometimes be made out by physical facts, such as the impression of boots of a peculiar kind, afterwards discovered to be the same as those of the prisoner. This latter evidence is very common, and the one most naturally sought for directly after the commission of the crime. Footsteps, as evidence of the number as well as the particular kind of persons engaged, are important indications. In the case of Mrs. Arden, who, with a number of others, was accused of murdering her husband, at Feversham, in England, in 1551, the crime was committed in the house of the deceased, and the dead body carried out and laid on the ground. From the impressions made upon the recently fallen snow, the prisoners were tracked through all their progress back to the house, where, by means of yet stronger evidences of guilt, conviction was brought about.

Impressions from other parts of the body answer likewise a useful purpose in detecting and identifying an offender. In the case of Rex *v.* Brindley,(*h*) impressions were found on the soil, near the scene of crime, of the knee of a man who had worn breeches made of striped corduroy, with a patch of peculiar shape; which was found to correspond exactly with the dress of the prisoner.(*i*)

§ 1223. *b. Suspicious circumstances.*—Under this head we may mention anything remarkable in the appearance of the prisoner, either before or after the crime, which may lead an observer to suspect something wrong. Singularities of conduct of a criminal, from the inability to conceal the secret which is weighing on his mind, will be hereafter mentioned. Whenever any physical connection exists between something belonging to the prisoner and traces of the criminal at the scene of crime, identification may be established by actual comparison. In the case of footprints, this is done by fitting the feet or shoes of the party to the impress which they left. Footprints, or impressions made by instruments used by the person committing a crime, may aid in identification in two ways: *first*, by showing the quarter from which the criminal came immediately before the crime, or to which he went directly after it; *second*, as specially pointing out the guilty person. Marks of violence, such as impressions of instruments used in forcing the way into a house, show that the perpetrator came from without. The absence of any such traces may lead also to the inference that the criminal was an inmate of the house. Evidence of the peculiar manner in which an instrument of crime was used, may contribute material aid in fixing guilt upon a particular person. Where the evidence shows that a fatal wound has been inflicted by the left hand, for example, and the accused is found to be left-handed, this circumstance, although, of course, not conclusive, lends great force to other indications. Objects left at the scene of crime, which are found to belong to the prisoner, are evident means of identification. A connection, also, between something found at the place of the crime, and something in the prisoner's possession, may here be

(*h*) Wills, Circ. Evid. 100.

(*i*) See Wh. Cr. Law, § 862.

mentioned. Where the bullet, for instance, with which a murdered man was killed, fits exactly a fire-arm in the prisoner's possession, or where the wadding of a gun corresponds to wadding found with the prisoner, strong evidence is afforded of identification.(*j*) Chief Justice Shaw, in his charge in the Webster case,(*k*) mentions the case where a portion of a broken knife blade was found in the murdered man's body, and afterwards the handle, with a small portion of the blade remaining, was discovered, and the two parts were found to fit so exactly that no doubt could exist of their having once been joined together in the same blade. Positive evidence was adduced to show that a knife with exactly the identical handle had been in the prisoner's possession but a day or two before the crime.(*l*)

B. Of Persons Dead.

§ 1223(*a*). 1st. *Age.*(*m*)

2d. *Teeth.*(*n*)

3d. *Sex.*(*o*)

§ 1224. 4th. *Skeleton.*—This subject, in its general relations, has been already noticed.(*p*) Where nothing but the skeleton has been found, it may be identified by peculiar marks or objects found near it. In the case of Rex *v.* Clewes,(*q*) twenty-one years after the death of a certain person his body was identified by his widow from some peculiarity about the mouth, and by a carpenter's rule and a pair of shoes found near the remains, and identified as having belonged to the deceased.(*r*)

§ 1225. 5th. *Clothing.*—In Peterson's case, which has been already given, the difficulties attending this kind of evidence are illustrated. There the clothes were so much decayed as to make their recognition almost impossible. The wife of the deceased, however, was able to identify a small fragment of his vest, and a little package of needles she placed in his pocket before he left her.

(*j*) *Ante*, § 1179.
(*k*) Bemis' Report, 465, 466.
(*l*) See *ante*, § 1180, &c.
(*m*) See *ante*, § 474.
(*n*) See *ante*, § 477.
(*o*) See *ante*, § 478.
(*p*) See *ante*, § 477.
(*q*) 4 Carr. & P. 221.
(*r*) Burrill on Circ. Ev. 681.

BOOK VIII.

SURVIVORSHIP.

I. As to the parties, § 1225.
  1st. Sex, § 1225.
  2d. Age, § 1227.
  3d. Size and temperament, § 1228.
  4th. Health, § 1229.
II. As to mode of death, § 1230.
  1st. Drowning, § 1230.
  2d. Asphyxia, § 1237.
  3d. Heat, § 1238.
  4th. Cold, § 1239.
  5th. Starving, § 1240.
  6th. Poison, § 1243.
  7th. Crushing or burying alive, § 1244.
  8th. Childbirth, § 1245.
  9th. Wounds, § 1246.
III. Tests where bodies are found dead, § 1247.

§ 1225(*a*). I. *As to the parties.* 1st. *Sex.*—Generally the male is supposed to survive the female, though in cases of suffocation Zacchias assumes the survivorship to be with the woman, on account of a less liability to asthma. This is verified by one or two cases. A girl and a young man were exposed in the same apartment to coal-gas. He was dead, but she, though she had been exposed ten hours, recovered.(*a*)

A very interesting narrative to the same effect is quoted by Dr. Krügelstein. In the Catacombs near Maestricht there is a labyrinth from which, when the way is lost in the dark, it is almost impossible to escape. Among the mummies which are found in the passage is one of a Leipsig student, whose name is not recorded. This much, however, is told of him. He was a man of much beauty and accomplishments, and was preparing for a professorship. An attachment sprang up between himself and the daughter of a rich merchant from Leipsig. The father refused his consent, and the young couple eloped and hid themselves in Maestricht. They were followed there, and finally took refuge in the Catacombs, thinking that they could readily conceal themselves there for a few days. Their track, however, was followed, and at the end of the third day they were discovered in a remote hole. The husband was dead, and his body is the mummy just mentioned. The wife was resuscitated, and lived to an extreme old age.

§ 1226. According to Dr. Guy, in cases where one of each sex perishes by the

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(*a*) Henke's Zeitschrift, 1 heft. B. 75, s. 99.

same accident, the probability is that the male, being stronger, is the survivor. This rule applies only where strength and courage are the best means of safety. In those cases, however, where the danger of death is increased by struggles and resistance, the probability of survivorship is with the female, from the incapacity of action which would result from her greater liability to weakness and fainting.(*b*)

§ 1226(*a*). In 1766 General Stanwix and his daughter set sail from Ireland for England, and during the voyage both perished from shipwreck. Opposing claims were set up for the personal estate by the nephew of Gen. Stanwix and the maternal uncle of the daughter. It was argued in favor of the general's survivorship that he being a soldier and man of courage would be apt during the tempestuous weather to be upon deck, while the daughter would probably be below, and hence it was supposed that the father would struggle much longer for his life than the daughter. It was contended, on the other hand, that the general was old and feeble, while the daughter was young and healthy, and hence able to resist such an attack longer than the father.

A second wife of the general perished at the same time, and her representatives put in a claim to the property. The difficulties were such that the judges were unable to decide, and advised a compromise, which was accordingly effected.(*c*)

§ 1227. 2d. *Age.*—The body is in the possession of its maximum strength and vigor between the ages of 27 and 50. In cases, therefore, when adults between these ages perish by the same means and where strength and power of endurance only are concerned, no presumption of survivorship can be entertained between them. Before and after these ages the power of endurance is probably less, but still between the ages of 15 and 60 not enough difference can exist to establish any general rule. Where a middle aged person perishes with one under puberty or above 60, the probability of survivorship is in favor of the adult. Where one under 15 and above 60 perish together, according to the French law, the former is the survivor. The civil law of England assumes that in case the parent and child die by a common death, the child survives the parent if he is above puberty, and dies first if he is below that age.(*d*)

§ 1228. 3d. *Size and temperament.*—Hippocrates is quoted as saying *qui natura sunt valde crassi, subito moriuntur quam graciles.* The fat, in other words, die quicker than the slender. The older commentators on this passage make a still further distinction between those who are naturally stout, and

(*b*) Guy's Medical Jurisprudence, 400.

(*c*) See this question thoroughly considered in Polk *v.* Ball, *post*, § 1232.

(*d*) The duration of human life is very different in different cases, but seldom exceeds 100 years. The average duration in Russia is 21.3, in Prussia 29.6, in Switzerland 34.6, in France 35.5, in Belgium 36.5, in England 38.5 years. The probable duration of life has latterly increased. The average length of life is greater with married persons than with those who remain single; this difference is more remarkable in the case of females than in that of males, but the former are more subject to fatal attacks during the period of child-bearing. Extreme old age is oftener reached by men than by women. The average duration of life is different in different professions. Among theologians it is 65.1, among merchants 62.4, among government officials 61.7, among farmers and foresters 61.5, among soldiers 59.6, lawyers 58.9, among teachers 59.9, among physicians 56.8 years. (See Böcker's Gericht. Med. ed. 1857, § 129.)

those whose fat is the result of high living, the latter of whom they declare to be the more shortlived.(*e*)

Temperament.—Persons who are sanguine and choleric, outlive those who are melancholy and phlegmatic. *Celui qui est douē d'un temperament pituiteux meurt le premier, vient ensuit le melancholique, puis le sanguin et le bilieux.*(*f*)

The timid die much more quickly than the courageous.

Dr. Gray says: "It is necessary, however, to understand that mere muscular strength and power of endurance are two very different things, and do not often meet in the same person. Muscular strength is often greatest in the so-called lymphatic temperament; power of endurance in the bilious.(*g*)

§ 1229. *Health.*—Disease, all other things being equal, supposes an earlier death.

§ 1230. II. *As to mode of death.* 1st. *Drowning.*—Many cases of great difficulty have arisen from doubt as to the priority of death, where persons have perished from drowning. Where shipwreck occurs, men are more apt to be saved than women. They are stronger, can endure more, and are more apt to know how to swim than women, and generally they are more apt to be upon the deck, and in favorable places to secure their safety, than are women.

When the comparison is between those of the same age and sex, it is to be considered which of them was the more exposed to cold from having his body only partly immersed. Investigation should also be made as to whether any injuries may have occurred to prevent a swimmer from using his strength.

§ 1231. Where there is an explosion, those persons, according to Orfila, who are the lightest and weakest, will be presumed to have been the last who were precipitated into the water. When the water is reached, however, and in all cases of ordinary shipwreck, the presumption of survivorship is with those who have the greatest presence of mind and strength, and with those best acquainted with swimming. Besides this, the following considerations are to be noticed:—

Dress very much affects the power of keeping above water. Boots soon fill with water and interfere with swimming. A woman's clothes, as lighter, and often exposing a greater resistance to the water than those of a man, may act as floats to keep the body a few moments longer on the surface.

A power to hold in respiration, or a condition of the body that permits this, presumes a longer struggle.

It should be inquired, also, whether the death was by apoplexy or suffocation. Persons of apoplectic tendencies are very apt to be struck with the disease when suddenly precipitated into the water, and when this is the case, death is presumed to have been earlier than in the ordinary cases of suffocation.(*h*)

(*e*) See Pauli Zachiæ Quæstion Med. Leg. lib. v. tit. iii. Quæst. 12.

(*f*) Orfila, Leçons de Médecine Légale, Paris, 1825, tom. ii. p. 271.

(*g*) Guy's Med. Jur. 400.

(*h*) According to Böcker, the stronger person will live longer—the mature man longer than the child or old man. In cases of poison, the person who is found to have taken the largest dose probably died soonest. In cases of suffocation, the person who has strong lungs has probably survived one with weaker, as a young child. In cases

§ 1232. The leading American case is that of Pell *v.* Ball.(*i*) In that case it appeared that Hugh Swinton Ball, with his wife and adopted daughter, were lost on board the steamer Pulaski, in June 14, 1838. By will he left certain portions of his estate to his wife in case she survived him. The facts are thus stated by Chancellor Johnson: "The Pulaski left Savannah on the 13th of June, 1838, and arrived at Charleston that evening. The next morning Mr. and Mrs. Ball, their adopted daughter and a servant, went on board, and she departed north on her course, until about 11 o'clock of that night, when, most of the passengers having retired to their berths, the starboard boiler exploded. By the explosion an extensive breach was made on the starboard side of the vessel. Her main deck was blown off, thus destroying the communication between the forward and after part of the steamer. The forward part of the upper deck (called the hurricane deck in contradistinction to the after part, which is called the promenade deck) was blown off, carrying with it the wheel-house, in which the commander of the boat, Capt. Dubois, was sleeping at the time; the gentlemen's forward cabin was much torn, its floor ripped up, and its bulkhead driven in, and Major Twiggs, whose berth was there, gives us reason to suppose that many perished in that part of the vessel by the explosion. The gentlemen's after cabin (which was under the main deck and immediately beneath the ladies' cabin, which was on that deck) was also injured. Some part of the floor was ripped up, the bulkhead partly driven in, and the stairs communicating with the deck more or less shattered. The vessel was careened to the larboard, and as she dipped, began to fill with water. In a very short time the hold was filled, and the water gained to the level of the floor of the gentlemen's cabin. It rose higher with great rapidity, the vessel settled to the centre, where the breach was, and all hope that she could hold together was abandoned. She parted amidships, and the forward and after parts pitched into the water toward the centre, at an angle of nearly thirty degrees. The gentlemen's after cabin was now entirely filled, and the forward cabin was certainly in as bad a condition. There were some persons on the forward part of the vessel, nearly all of whom speedily perished, but the greater number were in the after part, including one or two who had passed by swimming from the forward to the after part. Of those on the after part, as many as could climbed to the promenade deck; but there were

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of drowning, a good swimmer has probably retained life longest. Persons upon whom traces of reaction are found, have survived those upon whose bodies such marks are wanting. In cases of injuries the more important the organ affected, the sooner death follows. A sick person will die sooner than one in good health. Women bear loss of blood longer than men. If the fatal instrument must have reached the different persons at intervals, the one first reached has probably died first. Where one of the persons has died by the hands of another, and the other by his own hands, the latter has probably survived the former. In cases of starvation or of freezing, young, weak, lean persons perish sooner than others. Hunger and thirst combined produce death sooner than hunger or thirst alone. If a mother and a newly-born infant are found dead, it is probable that the infant, where it was evidently born alive, lived the longer. Some physicians hold the opinion that the birth of a child may be consummated after the death of the mother. The person whose body is most advanced in decomposition has died first.

In some cases the circumstances will enable one to decide with a high degree of probability as to priority of death.

(*i*) 1 Cheves' Ch. Cases.

many, mostly ladies, among whom was Mrs. Ball, who remained on the main deck. These, as that deck sank deeper and deeper, retreated along the gangways, by the ladies' cabin, toward the stern. The promenade deck, by the action of the waves, was burst from the top of the boat and was submerged with all that were on it. Whether the stern of the boat was submerged at or after this time, is uncertain. Some of the witnesses think it was, even before the promenade deck, others, that it was not submerged at all. All these events had taken place, according to most of the witnesses, in about from forty to fifty minutes; according to others, in less time.

"Some few escaped in the boats, others on parts of the wreck, and others on rafts constructed by them as they could. Of Mrs. Ball, nothing is known, after the submerging of the promenade deck, nor for some time before. Before that event, her cries were heard by one witness, who had gained the promenade deck, as they proceeded from the place she still occupied on the deck below. No witness speaks of her afterwards.

"Within a few minutes after the explosion, according to one witness who knew her, she came out of the ladies' cabin and began to call upon her husband. The scene was one of terror, as may be supposed; and although a crowd was instantly gathered at that part of the vessel, there was not much noise. The surrounding horrors seem to have subdued the sufferers, and in mute astonishment they contemplated the fate that awaited them. Even the wheels had stopped. Nothing but the sound of the waters, which were somewhat disturbed, and the hasty exclamations of friends, as they sought each other out, and the noise occasioned by such preparations as the more active and prudent felt themselves called upon to make for themselves and others under their charge, were heard. But the voice of Mrs. Ball was heard above all others, calling upon her husband. She ran forward to the chasm caused by the explosion, retraced her steps, and continued to traverse the starboard gangway in search of him, uttering his name in tones so elevated by her agony, that they reached most parts of the vessel, and seem to have made an indelible impression upon all who heard them. Her cry, according to one witness, was a cry of bitter despair and anxious inquiry, and, according to all, it was lifted in shrill tones, carrying an irresistible appeal to all hearts.

§ 1233. "Mr. Ball was neither seen nor heard. Mrs. Ball was heard and seen by many, but no response was heard to her cries, nor was any one seen to approach her for her protection or consolation. Two witnesses, who knew Mr. Ball, saw her, but did not see him. One of them passed and repassed her, in a hurried manner to be sure, but did not discover him. He was neither seen nor heard after the explosion, unless he was the person referred to by two witnesses, who stated the following circumstances: Very shortly after the explosion, a boat was let down on the starboard side of the steamer, into which some persons descended. As the boat was lying below, a gentleman came to that side of the deck, and throwing a coat into the boat, called to those in it to hold fast a moment, and instantly disappeared. He never reappeared, but the next day the coat was found to be a black dress-coat of large size (such was the size of Mr. Ball), and in one of the pockets was discovered a shirt

collar, on which was written the name of Ball with some initials, which the witnesses have forgotten.

"Now these are the circumstances of the case. It is not the case of an unknown calamity, nor of one withdrawn from observation, nor is it a case where the calamity was of instantaneous operation. It is a case for testimony, and to be decided on testimony."

§ 1234. Chancellor Johnston proceeds to say, that as the right on the part of Mrs. Ball was derivative, the burden is on the plaintiffs to prove that she was the survivor. But although bound to prove this, it does not follow that they are to prove it to demonstration. We must take the best evidence that the case affords.

Although unwilling to rest on the fact that Mrs. Ball was the last person seen, yet he inclines to the opinion, that in cases of persons lost by a common accident, this should be the ground of decision. He prefers, in the present instance, "to put the case upon the ground of probability arising from the evidence, upon a belief engendered by a combination of circumstances, and upon the superiority of positive proof over conjecture, or even probability.

"The explosion produced its most fatal effects in the gentlemen's forward cabin, and that was the first part of the vessel which sank. The after cabin was also much injured. From the forward cabin many persons never escaped. From the after cabin, so far as we know from the evidence, all did escape except Judge Cameron, an infirm old man. But from the description given of its condition, it is possible that some others may have been detained, either from being hurt or otherwise, until the cabin filled.

"It is *certain* that Mrs. Ball escaped the explosion. Is it certain Mr. Ball did? Mr. Ball engaged a berth in the after cabin. The probability is that he got it, but this is far from certain. The boat came with many persons from Savannah, which may have occasioned Mr. Ball to be displaced and transferred forward. I think, however, it is not probable he was so transferred, because, by an arrangement between the agents in Savannah and at Charleston, they were entitled to let berths, in alternate order, throughout the boat, and we know that some of the passengers who came from Savannah had not the advantage of pre-occupying the after cabin, and that some of the Charleston passengers were let into the cabin; Mr. Ball, therefore, was probably in that cabin. But there is a probability that he was in the forward cabin, and if so, in the greatest danger from the explosion. Mrs. Ball was cleared from that danger *certainly*, Mr. Ball only *probably*. Supposing that he was in the after cabin, still there are chances of his destruction there, from which, we know, Mrs. Ball was totally free on the deck. We know Mrs. Ball was there. *That is certain.* Is it certain that Mr. Ball had hitherto escaped, and was the person who threw the coat into the boat? It may be that he was the man. I think it hardly probable. I should have thought that he was the man if he had been seen at any time near his wife, or had answered to her heart-rending calls. But it is more probable that some one else in the hurry of the moment may have mistaken Mr. Ball's coat for his own, and thrown it into the boat, than that an affectionate husband and brave man, as

Mr. Ball is proved to have been, should have heard such appeals as were made to him by his wife, and should at such a time have failed in his duty to her.

"We have indubitable evidence that she had so far escaped; the same evidence, with a moral force which cannot be resisted, convinces us that he must have already perished, or he would have been at her side. I have from all these considerations, formed the opinion that Mrs. Ball survived her husband." On appeal (February, 1840), the above decision was confirmed.

§ 1235. More lately this subject was discussed in England on the following facts.(*ii*) A testator, by his will, gave all his real and personal estate to W., in trust for his wife absolutely, "and in case my said wife *shall die in my lifetime*, then in trust for such of them, my three children, C., F., and A., as shall attain the age of 21, &c., and in case all of them shall die under the age of 21, &c.," then he gave and bequeathed all his property to W. The testator and his wife, and two of the children, F. and A., were drowned at sea, in a shipwreck, having been washed off from the side of the vessel by the same wave. The other child, C., was also drowned, but had been seen alive, after the others were drowned. W., as executor, proved the will. A bill was filed by the administrator of C., as next of kin of the wife, under an asserted intestacy, against W. There was no direct evidence on the question of survivorship as between the husband and wife, but there was considerable medical evidence of a conflicting nature, with reference to the presumptions of the case. The case came up in 1854–5, on an appeal from the Master of the Rolls, and was heard before CRANWORTH, Lord Chancellor, assisted by WIGHTMAN, J., and MARTIN, B. WIGHTMAN, J., in the course of his judgment, said: "The question of survivorship is the subject of evidence to be produced before the tribunal which is to decide upon it, and which is to determine it, as it determines any other fact. If there be satisfactory evidence to show that the one survived the other, the tribunal ought so to decide; and if there be no evidence, the case is the same as a great variety of other cases, more frequent formerly than at present, where no evidence exists, and consequently no judgment can be formed. On this point, we concur with the Master of the Rolls; we think there is no evidence to show whether the husband or the wife was the survivor. There may be surmise, and speculation, and guess, but we think there is no evidence. We have no doubt that the scientific gentlemen who were examined were perfectly sincere in their opinions, but it is obvious that their opinions were given, having reference to the case of two persons quietly submerged in water, and remaining there until drowned; or in the case of two persons, one being a swimmer, and the other not, and both thrown suddenly into the water, unincumbered, and acting on certain instinct. The present case is that of two persons clasped together, two boys clinging to one of them, and standing pretty high out of the water on the ship's side, swept off together by an overwhelming wave into a raging sea, and one or other, or both of them, may have been stunned by the violence of the blow from a wave, or they may have struck against a timber of the ship, and may, in fact, have been dead before he or she reached the water

(*ii*) Underwood *v.* Wing, 1 Jur. N. S. 169; 31 Eng. Law and Eq. 293.

at all. How is it possible, under such circumstances, for any tribunal, sitting judicially, to say which of these two individuals died first? We may guess, or imagine, or fancy; but the law of England requires evidence, and we are of opinion that there is no evidence upon which we can give a judicial opinion that either survived the other. The Master of the Rolls is reported, in the report of his judgment, to have said: 'There is, therefore, no evidence to show who was the survivor, and the conclusion of law is that both died at the same moment.' According to our view, this is not correct; we think there is no conclusion of law on the subject. In fact, we think it unlikely that both did die at the same moment of time, but there is no evidence to show who was the survivor. Our opinion, therefore, on the questions, with respect to which it was requested, is in favor of the plaintiff."

§ 1236. Lord Chancellor CRANWORTH, after adopting the views of WIGHTMAN, J., added:—

"Then we come to the question of fact. I entirely concur in what was said by the learned judges on that subject, that there is no evidence whatever which will justify anybody in coming to any such conclusion; because I take it in this case, as in all others where it is said that a person must show such and such a state of things to have arisen, that it is not sufficient to show a variety of circumstances on which it is very difficult to form your mind; that, if you had to lay a wager, you would rather lay a wager one way than the other. That is not what is necessary. The heir at law is not to be dispossessed unless the devisee or person claiming can show such circumstances as displace him—not show that there is a confusion and an ignorance as to what happened, and that it may have so happened, that the greater probability may be that it has so happened, as to entitle him; but there must be evidence as to who was the survivor. I think it impossible to carry this evidence to anything like proof as to which was the survivor. I give the medical gentlemen most entire credit for speaking scientifically and, as they believe, quite accurately. I do not think that they themselves even are very confident. Indeed, it is idle, when you are calculating and reasoning *à priori* in this way, as to which of two people may have breathed a few seconds the longest at the bottom of the sea; for that is all it comes to. To think that one can take that as establishing the fact seems to me to be quite misunderstanding the nature of human testimony. The medical men may be quite right in the observations they have made of persons dying from asphyxia; that such and such results follow; that there is a small interval, of perhaps half a minute, after sensation has ceased, in which life still continues; and I think they say that that is, as far as their observation goes, uniform in all states of health and in all states of strength. I dare say that may be very learned and probably accurate, as far as science enables us to form such an opinion; but, happily, the instances of such events cannot have been sufficiently numerous to have enabled anybody to have formed at all an accurate and certain conclusion on such a difficult subject; and I confess that I rose from the perusal of their evidence utterly unconvinced that those gentlemen can tell us which of these two persons died first; that is to say, which of them died first if they had both been taken and quietly sub-

merged to the bottom of the sea. But when you add to that, that they are all violently thrown by one blast from the side of the ship, and may have fallen against some spars (for from what we know that may have been so), and then in the whirlpool and confusion of the moment to pretend that you can come to any conclusion on which you can act, that these medical gentlemen are right in supposing the wife did die a few seconds before the husband, seems to me to be confusing and confounding the province of human testimony. I must say that I come to a conclusion upon the assumption that we cannot tell which of these two persons died first. That is the conclusion at which the Master of the Rolls arrived. In the report certain words are attributed to the Master of the Rolls. I do not mean to say that reporters are not accurate in taking down judge's words. It may be that judges use inaccurate words, or that the words are not distinctly understood as used; but I have, from personal communication, ascertained what he meant to say. He is represented in one passage to have said, he must assume they both died together. All he meant was—and I know he was not aware he ever used such an expression, but, if he did, all he meant was—that the property must be distributed just as it would have to be distributed if they had both died at the same time, *punctum temporis;* that there was not a practical difference between them, not that any person may assume it to be proved or probable or possible. That two human beings should cease to breathe at the same moment of time is hardly within the range of imagination. I suppose that time, like space, is infinitely divisible; and if we are to speculate on such a subject, one can hardly suppose that the one did not breathe a millionth part of a second longer than the other. Therefore, to adjudicate on a principle that they did actually cease to breathe at the same moment would, I think, be proceeding on false data. The real ground to proceed on is, that it cannot be proved which died first; they both probably died within a few seconds of each other, but which died first it is impossible to say. That being so, what is the result? Why, here is a will made in which in one state of circumstances, namely, that if the wife died in the husband's lifetime, the property is given away. It is not proved that that state of circumstances existed, and in no other state of circumstances is it given away. Then it is not given away at all. Therefore, it is to be taken as upon an intestacy, and must be distributed amongst the next of kin."

§ 1237. 2d. *Asphyxia.*—Where the parties are in the same circumstances, the female is presumed to have survived the male, from the fact that women consume less oxygen than men, and hence can exist longer on the same amount of air. In poisoning by carbonic acid gas, the chances of survivorship are with the female. In 19 out of 360 cases of asphyxia by carbonic acid, which took place in Paris during 1834 and 1835, a man and woman were asphyxiated together; of these, three only were saved; and these three were females.

§ 1238. 3d. *Heat.*—The young and old bear heat better than those in the prime of life. The difference between the sexes in the capacity to endure heat is not well ascertained. Fodere relates a case where an Englishman and his daughter of seven years of age, crossed the desert of Syria to the Persian

Gulf, each being in precisely the same circumstances; the father perished, but the child reached her journey's end in safety.(*j*)

§ 1239. 4th. *Cold.*—Middle aged men endure cold much better than young children or old persons. Men bear cold better than women. The amount of clothing and state of health of the parties is to be taken into consideration. Where spirituous liquors are taken in excess, they make the cold more intolerable; but if taken in moderation, they help to resist its effects.

§ 1240. 5th. *Starving.*—The aged require less nourishment than adults, and adults less than children, so that the probability of survivorship is in favor of the more aged of different persons, where death is from starving. Corpulent persons also are apt to live longer than those of emaciated frames. Where one person has had access to water, this is presumed to have prolonged his life. Active exertion to escape from the perils of their situation hastens the hour of death, so that those who possess the most passive endurance are supposed to live the longest.

§ 1241. On Friday the 13th of April, 1856, the mines known as the Blue Rock Coal Mines, situated on the west bank of the Muskingum River, in Harrison township, Muskingum Co., Ohio, fell in. At the time of the catastrophe some twenty persons were at work, of whom all but four succeeded in making their escape. The names of the four who were imprisoned in the mine were William Edgell, James Pearson, James Gatwood, and Edward Savage. Edgell was twenty years old, Pearson thirty-three, Gatwood twenty-two, and Savage sixteen. They were working at the time in a well-defended portion of the mine, and consequently escaped any immediate injury. After satisfying themselves that there was no prospect of an early escape from their confinement, they established themselves in one of the compartments scarcely large enough to contain them all, and made preparations to die together, after their means for sustaining life should be exhausted. The only food they had with them were the dinners for two persons that had been left by some of the other hands. This was shared between them, and made two scanty meals. They were all thinly clothed, none of them having more than a shirt and pair of trowsers, and the sleeves of their shirts had been torn off, as is customary with miners, to prevent them from interfering with their work. Two of the men, however, succeeded in finding jackets that afforded some warmth to the upper part of their bodies. They were well supplied with oil, but after their lamps had been replenished some nine or ten times, they ceased to burn, and the miners were left in total darkness. In this condition of things the men, huddled together upon a bed of dirt, forced to take turns in occupying the middle position as the only place of comfort, suffering intense anguish from hunger and cold, looked forward to death as their only escape. The water which they had with them soon gave out, when very fortunately they found not far off a reservoir of water strongly impregnated with copperas. The supplies of this, which they kept constantly by them, seemed to afford considerable nourishment, and were undoubtedly the means of preserving their lives. The intense pains of hunger which affected them the first two or three days afterwards in a great

(*j*) Guy's Med. Jur. 401.

measure disappeared, attributable, as the men thought, to their liberal use of the copperas-water. They were all of them delirious at different times, experiencing the dreams and visions of tempting food that so often accompany starvation. The oil which they had with them was used on two occasions for nourishment, but proved so nauseating that it was not again tried. They remained in this condition, gradually growing weaker, but still all of them able to stir about, until after two weeks had elapsed, when they were rescued by their fellow workmen and neighbors, having been entombed in their prison fourteen days and thirteen hours.

§ 1242. As indicating one of the effects of the copperas-water, and as one of the elements in this remarkable prolongation of life, it may be observed that the sufferers were "constipated during the entire time of their imprisonment. After their rescue a healthful action was restored by means of clysters, and with no great difficulty."

"Considering all things," is a statement made in a pamphlet report of the condition of the parties when brought out, "Edgell looks remarkably well; being a fleshy young man; he is not much emaciated. Pearson, and the boy Savage, are somewhat reduced; Gatwood very much so and very weak."

§ 1243. 6th. *Poison.*—Dissection alone gives here very little aid. The marks on the body are often the most unequivocal in cases where the suffering was the longest protracted. Cases are well known in which one person gave another poison, and afterwards took it himself, and in which the giver survived.

§ 1244. 7th. *Crushing or burying alive.*—Here again we fall back on the general consideration of the age, the corporeal energy, the sex, and the position of the corpse. Younger persons, in this kind of death, survive the older. After the Calabrian earthquake, the children who were buried alive were found to have survived their parents. Where the question is of continued respiration, the presumption of survivorship is with children, with whom loss of breath can be longest borne. So also when the lungs are sound, in which case a longer living will be presumed than where the lungs are weak, so as to have difficulty in obtaining the necessary air. Men are supposed, from this reason, in such cases to survive women, though this has been much controverted.(*k*)

Signs of struggling at extrication indicate a longer continuance in life than where the deceased appears to have at once succumbed.

§ 1245. 8th. *Childbirth.*—Where the mother and child have both perished in childbed, the presumption is that the mother survived, for there is *prima facie* evidence of stillbirth, and a still stronger probability that the mother was unable to render the child any assistance towards its preservation, and hence the chlid woul ddie first. A case is mentioned(*l*) where the succession to a large landed estate was thus involved. The mother and child both died during delivery. If the latter survived, the father was entitled to the property, but if the former, her relatives were entitled to it. It was proved, on trial,

(*k*) See Henke's Zeitschrift, B. 75, s. 117.
(*l*) Beck's Med. Jur. 11th ed. p. 638.

that the child was born alive, when the question was decided, that the child was the survivor.

When a mother died of a nervous attack, during, but before the birth, and when the child was in a good position, and there was no mechanical hindrance to the birth, the survivorship was ascribed to the child.(*m*)

That an unborn child can survive its mother, and even live when cut from her body after her death, is proved by many cases.(*n*) Cases even remain on record in which, after the execution, by hanging or otherwise, of pregnant women, children, at the distance of one day, were taken alive from their bodies.

§ 1246. 9th. *Wounds.*—Questions under this head very rarely arise. As an illustration, we may give the following:—

Dr. Casper, in the 1857 edition of his *Handbook of Judicial Medicine*, supposes the following case. A. is killed by the thrust of a sabre on the head, B. by that of a bayonet in the heart, and C. by a shot which has torn open the jugular vein. Here the presumption would be that B. died first; that C. bore the loss of blood a little longer; and that A. resisted the deadly influence of the blow the longest of the three.

§ 1247. III. *Tests where bodies are found dead.*—Where the wounds, in case of violence, are the severest, there the earlier death is presumed.

Stiffness, coldness, discoloration, degree of putrefaction, are all to be taken into account.

As to stiffness, there are many minor distinctions to be observed. The process of stiffening is greatly affected by the age of the deceased, and by the prior state of his body. Was he strong and muscular, or meagre and feeble? With persons of powerful muscles, this stiffness is far more rigid than with those of weaker frame. The stiffness gives way after very varied intervals to that suppleness and softness which is the preliminary of putrefaction. Generally, it is not observable after corruption is begun, which is mostly earlier in cases of poisoning, and death by drowning and lightning.

The process is hastened by lethal causes which act on the brain, and delayed by those which are accompanied by the loss of blood.

Where corruption has proceeded furthest, there the death can be presumed to have been earliest.

(*m*) Henke's Zeitschrift, B. 75, s. 109. (*n*) Ibid.

BOOK IX.

MEDICAL MALPRACTICE.

CHAPTER I.

CIVIL LAW PRACTICE. § 1248.

CHAPTER II.

COMMON LAW PRACTICE.

I. In criminal prosecutions, § 1252.
II. In actions for torts, § 1273.

CHAPTER I.

CIVIL LAW PRACTICE.

§ 1248. According to the civilians, where the practice of the attending physician is called in question, the prosecution must show, 1st, that the injury to the health or body resulted from bad treatment of the case by the physician or surgeon in attendance; and 2d, that this evil result might have been certainly foreseen and avoided by a competent practitioner. The answer to this latter question will be affected by the position of medical science at the time, and often by the peculiar circumstances of the case.(*a*)

§ 1249. Malpractice can only be affirmed where the physician has set aside established principles, and neglected to employ means which are universally held to be necessary in the given case. But before the physician can be reckoned guilty of malpractice on account of such deviation, it must be established—

1. That the following of the rules prescribed by medical science for the cure of the disease never proves detrimental.

2. That there is, at least, the greatest probability that the following of the rules would accomplish the desired end.

3. That the great majority of medical authorities approve the rules.

§ 1250. In the treatment of internal diseases, the physician, according to both Casper and Böcker, can never be held guilty of criminal carelessness for failing to use any particular remedy, since there is never any remedy upon

(*a*) Böcker, Gericht. Med. § 58, &c.

which all authorities are agreed, and since it is always possible that the patient may recover without the use of such remedy. This uncertainty of remedies extends even to the antidotes recommended for various poisons. Even where the antidote produces a favorable effect, it can never be certainly determined how much of this effect is due simply to the action of the antidote. Besides, many antidotes have been recommended merely upon theoretical grounds, some of which are known to be actually injurious. But when it can be proven that there is great probability that the injurious effects of a poison might have been prevented by the use of a certain antidote, the physician is guilty of criminal carelessness when not employing it.

§ 1251. It is asserted by Casper that a physician "should be liable to punishment if in a given case he departs entirely from the treatment which the great majority of physicians of his time adopt in such cases, and which the great majority of medical authorities recommend for such cases." Great difficulty might arise from this test. It would be impossible, for instance, for a physician to stop to inquire, in any given case, what is the practice of the majority of his contemporaries; and if he should, he has often no means of answering the question.

This principle would also render all homœopathists liable to punishment. Besides, it would be impossible to collect the views of the great majority of authors upon the given case. Many will not have noticed the particular case in point, and much difference of opinion will be found among those who have.

In America, in consequence of these doubts, the opinion has been laid down that if a physician gives himself out as acting on a particular basis, and is employed by persons knowing that this is the case, he is at least not civilly responsible to them because his views do not accord with those of what are called regular practitioners.(*b*)

CHAPTER II.

COMMON LAW PRACTICE.

I. *In Criminal Prosecutions.*

§ 1252. The accountability of medical men has been a fruitful source of lego-medical discussion, and in early times was the subject of much variety of judicial, as it is still of popular, sentiment. At one time, so great was the rigor with which the courts were disposed to treat irregular practitioners, that it was held that while if a potion or plaster administered *bona fide* by a licensed physician or surgeon unexpectedly killed the patient, this was but misadventure, yet if the defendant was not a regular physician or surgeon he was guilty of manslaughter.(*c*) Thus, where an old woman, who sometimes dealt in medicines, gave to a party asking for an emetic, a solution of white vitriol, which caused his death, Bayley, J., said: "I take it quite clear that if a person,

(*b*) Bowman *v.* Woods, 1 Iowa, 441.
(*c*) Brit. C. 5; 4 Inst. 251; Wilcock's L. Med. Prof. Append. 227.

not of medical education, in a case where professional aid might be obtained, undertakes to administer medicine which may have a dangerous effect, and thereby occasions death, such person is guilty of manslaughter. He may have no evil intention, and may have a good one; but he has no right to hazard the consequence in a case where medical assistance may be obtained; if he does so, it is at his peril." The prisoner was convicted.(*d*) But even as far back as Lord Hale, the distinction between regular and irregular practitioners began to be doubted, and that learned but quaint judge did not hesitate to ascribe to the doubt greater antiquity than the doctrine, since, as he said, it was clear that physic and salves were in use before physicians and surgeons.(*e*) And now, in England and in this country, the great weight of authority is that no such distinction exists.

From the leading cases, which will be presently given in full, the following propositions may be extracted :—

1. If the defendant acted honestly, and used his best skill to cure, and it does not appear that he thrust himself in the place of a competent person, it makes no difference whether he was at the time a regular physician or surgeon or not.

2. To constitute guilt, gross ignorance or negligence must be proved.

3. A defendant who, with competent knowledge, makes a mistake in a remedy, is not answerable; but it is otherwise when a violent remedy, shown to have occasioned death, is administered by a person grossly ignorant, but with average capacity, in which case malice is presumed in the same way that it is presumed when a man *compos mentis* lets loose a mad bull into a thoroughfare, or casts down a log of wood on a crowd.

4. Where competent medical aid can be had, the application of violent remedies, by an ignorant person, though with the best motives, involves him in criminal responsibility.

5. Express malice, or an intent to commit a personal or social wrong, makes the practitioner criminally responsible in all cases of mischief.

§ 1253. In 1807, before Lord Ellenborough, Chief Justice of the King's Bench, John Williamson, a man midwife, seventy-five years of age, who was shown to have been in the habit of acting as such among the lower classes of people, though not a regularly educated *accoucheur*, was tried for the murder of Ann Delacroix, of Westminster. From the evidence of the female nurse, it appeared that the deceased had been delivered by the prisoner on Friday, September 17th, of a male child, and on the following Sunday was attacked with a *prolapsus uteri*. This was mistaken by the prisoner for a remaining part of the *placenta*, which had not been brought away at the time of delivery; and upon attempting to tear away the *prolapsed uterus* by force, he lacerated the uterus and caused the death of the patient. It was proved on the one hand, by a number of medical witnesses, that there must have been great want of skill in the prisoner, and on the other, by several women whom he had delivered, that he always acted with kindness and attention, and, as far as they could judge, with skill. The prisoner, in his defence, said that he had acted according to the best of his judgment. Lord Ellenborough took from the

(*d*) R. *v.* Simpson, 4 C. & P. 407.

(*e*) 1 Hale, 429.

jury the question of murder, and in submitting to them that of manslaughter, said: "To substantiate that charge, the prisoner must have been guilty of criminal misconduct, arising either from the grossest ignorance or the most criminal inattention. One or other of these is necessary to make him guilty of that criminal negligence and misconduct which are essential to make out a case of manslaughter. It does not appear that in this case there was any want of attention on his part; and from the evidence of the witnesses on his behalf, it appears that he had delivered many women at different places, and from this he must have had some degree of skill.(*f*) It would seem that having placed himself in a dangerous situation, he became shocked and confounded. I think that he could not possibly have committed such mistakes in the exercise of his unclouded faculties; and I own that it appears to me, that if you find the prisoner guilty of manslaughter, it will tend to encompass a most important and anxious profession with such dangers as would deter reflecting men from entering into it." The result was an acquittal.(*g*)

§ 1254. In 1829, an unlicensed practitioner, named Van Butchell, was indicted for manslaughter, by thrusting "a round piece of ivory into and up the fundament and against the rectum of the deceased, William Archer, thereby making one perforation, laceration and wound, of the length, &c., in and through the rectum of the said William Archer." It was proved by Mr. Lloyd, an eminent surgeon, that he opened the body of the deceased, and found a portion of the *ileum* adherent to the rectum, and that on separating this adhesion, he discovered a small hole perforated through the rectum. Upon cross-examination he said that operations must sometimes fail, notwithstanding they might be skilfully performed; and he added that he himself had operated in extracting an encysted tumor from the breast of a woman at a time when she was pregnant, and who soon afterwards died; and he and many other surgeons thought that correct practice, though he admitted that the propriety of the operation was doubted by others. The counsel for the defence offered to prove that the defendant had a regular medical education, when Hullock, B., said that this was not material, and in summing up said: "This is an indictment for manslaughter, and I am really afraid to let the case go on, lest an idea should be entertained that a man's practice is to be questioned whenever an operation fails. In this case there is no evidence of the mode in which this operation was performed; and even assuming for the moment that it caused the death of the deceased, I am not aware of any law which says that this party can be found guilty of manslaughter. It is my opinion that it makes no difference whether the party be a regular or an irregular surgeon. Indeed, in remote parts of the country many persons would be left to die, if irregular surgeons were not permitted to practise. There is no doubt that there may be cases where both regular and irregular surgeons might be liable to an indictment, as there might be cases when, from the manner of the operation, malice might be inferred. All that the law books have said has been

(*f*) In a subsequent reference to this same case it is stated that he had attended the deceased in seven previous confinements with success, and that he attended in this instance at her request. 4 Car. & P. 398.

(*g*) R. *v.* Williamson, 3 C. & P. 635, note.

read to you, but they do not state any decisions, and their silence in this respect goes to show what the uniform opinion of the lawyers has been upon this subject. As to what is said by my Lord Coke, he merely details an authority, a very old one, without expressing either approbation or disapprobation; however, we find that Lord Hale has laid down what is the law upon this subject. This is copied by Mr. Justice Blackstone, and no book in the law goes any further. It may be that a person not legally qualified to practise as a surgeon may be liable to penalties, but surely he cannot be liable to an indictment for felony. It is quite clear you may recover damages against a medical man for want of skill; but, as my Lord Hale says, 'God forbid that any mischance of this kind should make a person guilty of murder or manslaughter.' Such is the opinion of one of the greatest judges that ever adorned the bench of this country, and his proposition amounts to this, that if a person, *bona fide* and honestly exercising his best skill to cure a patient, performs an operation which causes the patient's death, he is not guilty of manslaughter. In the present case no evidence has been given respecting the operation itself. It might have been performed with the most proper instrument, and in the most proper manner, and yet might have failed. Mr. Lloyd has himself told us that he performed an operation the propriety of which seemed to have been a sort of *vexata questio* among the medical profession; but still it would be most dangerous for it to get abroad, that if an operation performed by either a licensed or unlicensed surgeon should fail, that surgeon would be liable to be prosecuted for manslaughter. I think that in point of law this prosecution cannot be sustained; and I feel bound to say, that no imputation whatever ought to be cast upon the gentleman who is now at the bar in consequence of anything that has occurred." The prisoner was acquitted.(*h*)

§ 1255. In 1830 and 1831, John St. John Long, who had acquired great popular celebrity as a practitioner in cases of consumption, even among the more aristocratic and educated portions of London society, was tried on two successive indictments for manslaughter. In the first case the indictment charged him with sponging the back of Catharine Cashin with an inflammatory and dangerous liquid, which produced inflammation and consequently death.

It appeared from the evidence of Mr. Sweetman, a surgeon, that two of the family of Mrs. Cashin had died of consumption; but that Miss Cashin, who was twenty-four years of age, had enjoyed good health; and that Mr. Long told him that he (Mr. L.) had informed a young lady that unless Miss Cashin put herself under his care she would die of consumption in two or three months; and that, on this being communicated to Mrs. Cashin, she placed her daughter under Mr. Long's course of treatment, hoping to prevent her having a consumption. Mr. Sweetman also stated, that Mr. Long told him that he rubbed a mixture on different parts of the bodies of his patients, and that this had been applied to Miss Cashin. It was proved by Mrs. Roddis, who was also a witness for the prosecution, that she, on Friday, the 13th of August, went with Miss Cashin to Mr. Long's, respecting a wound on her back, and that

(*h*) R. *v.* Van Butchell, 3 C. & P. 629.

Miss Cashin then inhaled; and that on the next day Mr. Long examined Miss Cashin's back, and said it was in a beautiful state, and that he would give one hundred guineas if he could produce a similar wound on the persons of some of his patients. Mrs. Roddis stated that she directed Mr. Long's attention to a part of the wound which was of a darker appearance, and that he stated that this proceeded from the inhaling; and that, unless those consequences were produced, he could expect no beneficial result. The wound, at this time, was about five or six inches square. Mrs. Roddis further stated, that Miss Cashin was suffering much from sickness, and that she mentioned this to Mr. Long, who said that it was of no consequence, but, on the contrary, a benefit; and that those symptoms, combined with the wound, were a proof that his system was taking due effect; and that on Sunday, the 15th, Miss Cashin, having got worse, Mr. Long said that in two or three days she would be in better health than she had ever been in her life, and spoke very confidently that the result of his system would be to prolong her life; and that no person could be doing better than Miss Cashin was. At this interview Mrs. Roddis showed Mr. Long the wound on Miss Cashin's back, which had extended. Mrs. Roddis also stated that Mr. Long, on Sunday, the 15th, was desired to do something to stop the sickness of Miss Cashin, but that he said he had a remedy in his pocket which he would not apply, as he knew that the sickness had been beneficial; and he also stated on that day, and on Monday, the 16th, that Miss Cashin was doing uncommonly well. On Tuesday, the 17th, she died.

§ 1256. It was proved by Mr. Brodie, the surgeon, that he saw Miss Cashin on Monday, the 16th, and that her back was extensively inflamed, as large as a plate; and that, in the centre, was a spot as large as the palm of his hand, black and dead, which was in a sloughing or mortified state. Mr. Brodie stated that he did not consider Miss Cashin to be in any immediate danger, and that he thought that some very powerfully stimulating liniment had been applied to her back. In his cross-examination, he said that it was very common to produce a counter-irritation, and that the things used to make that produce different effects on different constitutions; but, in re-examination, he stated that applying a lotion of a strength capable of causing the appearances he saw, to a person of the age and constitution of the deceased, if in perfect health, was likely to damage the constitution and produce disease and danger. Mr. Brodie also stated, that the appearances on Miss Cashin's back were quite sufficient to account for her death. Several medical men who had examined the body of the deceased stated that, on the most careful examination, they could not discover any latent disease, or seeds of disease. A servant of Mr. Long, named Ann Dyke, proved that, on the 3d of August, she, by the direction of Mr. Long, rubbed Miss Cashin's back with a liquid, but that she did not know what the liquid was. In her cross-examination, she stated that Mr. Long had a great many patients, many of them persons of rank, and that she rubbed Miss Cashin with the same liquid that was used for the other patients. The witness stated that the Marchioness of Ormond and Lady Harriet Butler were at Mr. Long's at the same time as Miss Cashin, and that the same lotion was applied to them, and also to Mrs. Ottley, and many others.

§ 1257. For the defence, twenty-nine witnesses were called, including the Marchioness of Ormond and Mrs. Ottley, who stated that they had been patients of Mr. Long, and that they were satisfied with his skill and diligence. One of the witnesses said, that he should never cease to pray for Mr. Long as long as he lived. Another (a lady) said, that she could never be sufficiently thankful to him for what he had done for her family. And another was a surgeon, who had lived in Jamaica for thirty-six years, and he expressed himself perfectly satisfied with Mr. Long's treatment and conduct.

§ 1258. Mr. Justice Park, in summing up, said: "The learned counsel for the prosecution truly stated, in the outset, that, whether the party be licensed or unlicensed is of no consequence, except in this respect, that he may be subject to pecuniary penalties for acting contrary to charters or acts of Parliament. But it cannot affect him here. For this I have the authority of that great and eminent person, Lord Chief Justice Hale, who has expressly said, that, though physicians and surgeons, if they are not licensed, may be subject to penalties, yet they are not answerable criminally on that account. His phrase is, 'God forbid that any mischance of this kind should make a person guilty of murder or manslaughter.' And, therefore, licensed or unlicensed, certainly does not signify. I agree with my learned brother, that what is called malapraxis in a medical person, is a misdemeanor; but that depends upon whether the practice he has used is so bad that everybody will see that it is malapraxis. The case at Lancaster differs from this case. I have communicated with Lord Chief Justice Tindal, who tried that case, and he informed me that the man was a blacksmith, and was drunk, and was so completely ignorant of the proper steps, that he totally neglected what was absolutely necessary after the birth of the child. That certainly was one of the most outrageous cases that ever came into a court of justice. I would rather use the words of my Lord Ellenborough, in the case of Rex *v.* Williamson. He says, 'that a medical man is not to be charged with manslaughter unless he has been guilty of criminal misconduct, arising either from the grossest ignorance, or the most criminal inattention.' And this is important here; for, though he be not licensed, yet experience may teach a man sufficient; and the question for you will, by and by, be, whether the experience this individual acquired does not negative the supposition of any gross ignorance or criminal inattention. The case quoted from the institutes of Lord Coke, who lived upwards of two hundred years ago, occurred at a time when there were very few cases of the kind, and was deemed to be a case of manslaughter. But I do not derogate from his high and illustrious character, when, as far as criminal law is concerned, I set against it the authority of my Lord Chief Justice Hale, on whom, when authority is quoted, reliance is always placed. He says: 'If a physician gives a person a potion without any intent of doing him any bodily hurt, but with the intent to cure or prevent a disease, and, contrary to the expectation of the physician, it kills him, this is no homicide; and the like of a chirurgeon;' and he quotes the Year Book, 3 Edw. III. And he goes on to say, 'And I hold their opinion to be erroneous' (evidently alluding to my Lord Coke), 'who thinks if he be no licensed chirurgeon or physician that occasioneth this mischance, that then it is felony; for physic and salves were before licensed phy-

sicians and chirurgeons.' And he proceeds further, and says: 'These opinions may serve to caution ignorant people not to be too busy in this kind with tampering with physic, but are no safe rules for a judge or jury to go by.' I say the same, that the public weal is deeply interested in preventing ignorant persons from tampering with these subjects. It is true his next reason, about the want of surgeons in the country, does not apply here, because, in London, all persons can obtain the assistance of the best men, however poor they are. The question is, whether there was gross ignorance in this gentleman, or scandalous inattention in his treatment of this lady. The opinion of Lord Chief Justice Hale is recorded and adopted in Sir Edward East's Pleas of the Crown, and in Mr. Justice Blackstone's Commentaries. I come now to the case of Van Butchell, decided here only twelve months ago by Mr. Baron Hullock, of whom it may be said that a sounder lawyer or a stronger headed man never was known in the profession. I quote this case rather to show you what that learned person's strong opinion was upon the general question, on the danger, not of punishing the man found guilty of gross negligence, but whether his practice can be questioned whenever an operation happens to fail. He says: 'It is my opinion, that it makes no difference whether the party be a regular or an irregular surgeon.' And also, 'There is no doubt that there may be cases where both regular and irregular surgeons might be liable to an indictment, as there might be cases where, from the manner of the operation, even malice might be inferred.' I agree with him that there may be such cases as those he has first mentioned; and you will have to decide, by and by, whether this case is one of them or not. I wish also to state to you what Lord Ellenborough said in the case of the King *v.* Williamson, which was the case of a man who acted as a man midwife. (His lordship here read the case as reported in 3 C. & P. 635 (*a*), and observed): Lord Ellenborough there says, that, from the evidence, it appeared that the prisoner had delivered many women at different times, and, from this, he must have had some degree of skill. He goes along with me in thinking that skill may be acquired by practice. That is my opinion here, and there are twenty-nine witnesses all speaking to the prisoner's skill in their cases. (His lordship read the evidence, and then observed): There is clear proof that the prisoner did the act which shortened Miss Cashin's life. But that does not prove the case, unless you think that there was gross ignorance, or inattention to human life to be inferred from it. It is evident he had some information; whether he drew improper conclusions from it, is not for you or me to say. It seems, from Mr. Sweetman's evidence, that the disorder had been in the family; that a son was dead, and a daughter was likely to die. The prisoner always said that his remedy would cure consumption; and, if the disease had not been in the family, they would not have sent to him at all. The prisoner's counsel could not by law ask the defendant's witnesses any questions as to their respective disorders, and the mode of cure, as my brother and I were of opinion that it was not evidence. All that was evidence was, that he has displayed so much skill in other cases as to show that he was not that grossly ignorant or inattentive person who could be guilty of manslaughter according to my Lord Ellenborough's opinion in the case before mentioned. The refusal by the pri-

soner to apply the medicine in order to stop the sickness, although he had it with him, would, in my opinion, if wickedly done, amount to murder; but he mentioned a case in which sickness had been beneficial. Undoubtedly, the result proves a very erroneous opinion on his part; and it seems singular that the restlessness and other circumstances did not awaken apprehension and call for further measures. But the question again recurs, whether this was an erroneous judgment of a person who was of general competency, though he unfortunately failed in the particular instance. It appears that he said, on examining the wound on Miss Cashin's back, that he would give 100 guineas if he could produce a similar wound in some of his patients. This seems to show his confidence in his proceedings. And there is this observation to be made of him throughout, that he seems to have been living in a fashionable part of the metropolis, and attended by right honorable persons; and it would be against his interest to act ignorantly and carelessly. It appears, with respect to Miss Cashin, that he did not go to seek her out, and this will be for you to take into your consideration. With respect to the application of the mixture, if he commanded the woman to use it, it is the same as if he used it himself. Perhaps, from the evidence, you will think that the act caused the death; but still the question recurs, as to whether it was done either from gross ignorance or criminal inattention. No one doubts Mr. Brodie's skill, but that is not quite the question; it is not whether the act done is a thing that a person of Mr. Brodie's great skill would do, but whether it shows such total and gross ignorance in the person who did it, as must necessarily produce such a result. On the one hand, we must be careful and most anxious to prevent people from tampering in physic, so as to trifle with the life of man; and, on the other hand, we must take care not to charge criminally a person who is of general skill, because he has been unfortunate in a particular case. It is God that gives, man only administers medicine, and the medicine that the most skilful may administer may not be productive of the expected effect; but it would be a dreadful thing if a man were to be called in question criminally whenever he happened to miscarry in his practice. These are things for your consideration when you are considering whether a man is acting wickedly; for I call it acting wickedly when a man is grossly ignorant, and yet affects to cure people, or when he is grossly inattentive to their safety. With respect to the evidence on the part of the prisoner, all the witnesses that he has called have spoken of him as being perfectly satisfied with his skill, attention, and behavior in every respect. It is observable of several of them, that, after their families had been attended, they put themselves under his care, so satisfied were they with his conduct. One of them says, that he shall pray for him as long as he lives, and another, a lady, says, she can never sufficiently thank him for what he has done for her family. It is also to be remarked, that one of these witnesses is himself a surgeon, who lived for thirty-six years in a hot climate, and he expresses himself perfectly satisfied. You will take the whole case into your consideration, and if you think there was gross ignorance or scandalous inattention in the conduct of the prisoner, then you will find him guilty; and if you do not think so, then your verdict will be otherwise."

The jury, after some deliberation, found the prisoner guilty, and he was subsequently sentenced to pay a fine of £250 to the king.(*i*)

§ 1259. Very shortly afterwards, Long was tried before Bayley, B., Bolland, B., and Bosanquet, J., for manslaughter in causing the death of Colin Campbell Lloyd, wife of Edward Lloyd, by causing her to inhale certain noxious and injurious vapors, and sponging her breast and chest with a corrosive and inflammatory liquid, which produced a gangrenous sore. The witnesses called on the part of the prosecution, were Captain Lloyd, the husband of the deceased; Mrs. Campbell, a relation, at whose house she was staying; Mr. Campbell, Mr. Vance, Mr. Brodie, and Mr. Franklin, surgeons.

§ 1260. The examination of Captain Lloyd, as stated in the report, was as follows: The deceased had been for several years troubled occasionally, when she caught cold or anything excited her, with a choking sensation in the throat, for which she had about three years before her death consulted a medical man, and for which she was in the habit of applying a blister to the throat, and afterwards of healing the wound with a simple dressing of spermaceti ointment. A son of the deceased was under the care of Mr. Long; and on various occasions when the deceased attended with her son, she mentioned, in conversation with Mr. Long, the complaint she had in her throat; and the conversations eventually led to her putting herself under his care on the 6th of October, 1830, at which time she was in very good general health. On the 3d of October she had applied a small blister to her throat, but the wound occasioned by it was nearly well on the 6th; on the 7th, 8th, 9th, and 10th, she went to Mr. Long's, and on the evening of the 10th, complained to her husband of a violent burning across her chest, in consequence of which he looked at it, and found a great redness across her bosom, darker in the centre than at other parts; she also complained of great chillness, and shivered with cold, and passed a very restless and uncomfortable night. On the 11th, she was very unwell all day, and complained of great thirst, the redness was more vivid, and the spot in the centre darker, round the edges white and puffed up, and there was a dirty white discharge from the centre. Cabbage leaves had been applied, and when they were removed, they appeared slimy from the discharge; the night of the 11th was passed very uncomfortably. On the morning of the 12th, the redness on the breast and chest was, if anything, greater, and the spot in the centre more puffed up and darker; the redness was more spread round the edges, and, where it stopped, there were blisters in the skin, apparently from the discharge; the inner part of the arms also was very red where the discharge had run down on each side. On the 12th, she was very feverish and restless, and had no appetite, and in consequence of these symptoms, Capt. Lloyd went to Mr. Long about the middle of the day; Mr. Long asked why Mrs. Lloyd had not come to inhale, and go on with rubbing; Capt. Lloyd replied, it was impossible, she was so very ill; that she had been constantly unwell since the night of the 10th, and was suffering a great deal of pain and sickness; Mr. Long said he dare say it would soon go off, it was generally the case. He was told of the shivering and chillness, and that some

(*i*) R. v. Long, 4 C. & P. 398.

hot wine and water had been given to relieve her; he said hot brandy and water would have been a better thing, and to put her head under the bedclothes. He was told that the breast and chest looked very bad and very red; he said that was generally the case in the first instance, but it would go off as she got better, and that Capt. L. need not be uneasy about it, as there was no fear or danger; Capt. Lloyd requested him to call in the evening, and then told him where Mrs. Lloyd was, which it appeared he did not know before; in the evening he came and saw her; in the course of the day the cabbage leaves had been removed, and a dressing of spermaceti ointment put on the chest instead. He said he was very sorry to see her so unwell, that she ought to have endeavored to get up and come to him, and he would have relieved her; she said it was impossible, she was in such pain and suffering, and with her breast open in that way, it might be dangerous.

He desired to look at it, and observing the dressing, said, those greasy plasters had no business there, and she ought to have continued the cabbage leaves. She said she could not bear the pain of keeping them on. He then took off his great coat, and said he would rub it out; and he turned up the cuff of his coat as if for the purpose of doing so. She exclaimed very much with fright, and expressed her wonder that he should think of rubbing in the state her breast was in. She asked if there was no way of keeping the leaf on without touching the breast; and he asked her what she wished. She replied, "To be healed." He said it would never heal with those greasy plasters, that was not the way in which he healed sores. He then asked for a towel, and began dabbing it on the breast, particularly in the centre, where the discharge came from. He said that old linen was the best thing to heal a wound of that kind. She said her skin and flesh were very healthy, and always healed immediately with the simple dressing she had used. He said old linen was better, but she might use the dressing if she liked, he saw no objection, and when it skimmed over, he would rub it again. She said no, she thought she could never submit to rubbing again, from what she was then suffering. He then went away. On the evening of the following day (the 13th), he called again, but Mrs. Lloyd would not see him, and begged her husband not to allow him to come up; and he never saw her afterwards. She died on the 8th of November, just a month and a day after she put herself under Mr. Long's care.

§ 1261. On the cross-examination of Capt. Lloyd he said, that his son continued to attend Mr. Long for several days after the commencement of the deceased's illness, and on one occasion was desired to tell Mr. Long that he need not come to see her, as she was better. He also added that a person describing himself as a medical man, and saying that he was sent by Mr. Long, applied to see Mrs. Lloyd, and was not allowed. He also admitted that he had told Mr. Long that he could not pay fees for his son until after Christmas, and that Mr. Long said that would not make any difference, he might send him and he would attend to him. Mrs. Campbell stated that Mrs. Lloyd was in a very good state of health, except that her throat was sometimes troublesome, that she complained of a stoppage in swallowing; that on the 10th of October, when the shivering came on, the bed was warmed and Mrs. Lloyd put

in, and bottles of hot water were applied to her feet; and that when Mr. Long went away, after having seen her, he did not give any directions as to diet, or order her any internal medicine. It also appeared from her evidence that, previous to Mrs. Lloyd's putting herself under the care of Mr. Long, she had attended three days at the inquest held on the body of Miss Cashin.

§ 1262. From the examination-in-chief of Mr. Campbell, the surgeon, it appeared that he was the son of Mrs. Campbell, at whose house the deceased was on a visit, and that he first saw the deceased about four o'clock in the afternoon of the 12th of October, at his mother's desire; at which time he found a very extensive wound covering the whole anterior part of the chest, which in his opinion might be produced by any strong acid; that the skin was destroyed, and lay in folds on the chest, entirely separated; that the cellular tissue was partly destroyed, and there was a considerable discharge generally; that the wound extended nearly from one armpit to the other, and from the throat down to the pit of the stomach; that the skin was off both breasts, and the centre of the wound was darker and in a higher state of inflammation than other parts; that he removed the cabbage-leaves and applied the dressing of spermaceti ointment; that he saw the deceased on the 13th and afterwards daily, several times a day, till her death; that he considered the wound very dangerous to life when he first saw it, but only continued to apply the spermaceti dressing until the 21st of October, when he called in the assistance of Mr. Vance, who continued at first to apply the same dressing, only adding to it a little calamine powder; that on the second or third day of his attendance Mr. Vance applied a bread and water poultice; that he (Mr. Campbell) at first gave Mrs. Lloyd some saline aperient medicine, and when the centre spot and upper part of the chest became gangrenous, which they did in about a week, in order to support nature she had bark, mineral acid and quinine. The witness added that in his opinion Mrs. Lloyd died of the wound which he first saw; that according to his judgment it was not necessary or proper to produce such a wound to prevent any difficulty in swallowing; and that he did not know of any disease in which the production of such a wound would be necessary or proper. He further stated, that he informed Mr. Vance of the course he had pursued, and that nothing which he and Mr. Vance applied could possibly increase the danger of the patient. On his cross-examination he said that he had been in practice six or seven years; that in the course of his practice he had known a common blister often produce very injurious effects which the person who prescribed it never contemplated, and that a medical man must regulate his treatment as well by the statements of the patient as by external appearances; that he did not wish for any additional assistance till gangrene commenced, though he feared it would take place from the first; and that he stated the danger he apprehended, very soon after he was called in, to his mother and Capt. Lloyd and a sister of the deceased, but that twice they had some hopes of her eventual recovery. On his re-examination he said that he did not consider it a case of difficulty in the treatment; that he was present at the post-mortem examination; and that the wound did not present the appearances which he had ever seen produced by a common blister. In answer to questions from the judge he said, that he thought

rubbing, on the 12th of October, when he first saw the wound, would have increased the inflammation, and could not have been in any respect beneficial.

§ 1263. Mr. Vance's evidence agreed in substance with the account of the appearances of the wound, as given by other witnesses. He stated also that he approved of the treatment pursued by Mr. Campbell. He added that he had attended Mrs. Lloyd about three years before her death for an affection of the throat, which he at first thought a case of narrow œsophagus, but afterwards ascertained to be globus hystericus, which he described as an inverted motion of the muscular fibres of the canal, very common among women in early life, and of which he had seen many thousand cases, but never knew it produce death. He described the appearance of the body after death, and said it was internally and externally in perfect health, with the exception of a partial disease of the thyroid gland, and an inflammatory affection of the lining of the windpipe (occasioned by their contiguity to the ulcer), and a little narrowness at the entrance of the œsophagus, which he believed to be congenital, as there was no thickening of the part. He attributed the death of Mrs. Lloyd to the extent of the mortification caused by high inflammation, produced by some powerful application. On his cross-examination he said, that at one time he had hope, because he found the healthy and unhealthy parts were separating. In answer to questions from the judge he said, that the state of the wound, as described, on the 12th of October, might produce the result stated; that he thought a man of common prudence or skill would not have applied a liquid which in two days would produce such extensive inflammation; though all irritating external applications sometimes exceeded the expectations of the medical attendant; but he should say that such conduct was a great proof of rashness and ignorance. In answer to a question from a juror he stated that it was very difficult to say whether, if he had been called in on the 12th, he could have prevented the death; but, if he were to make a positive reply, he should say that it was not likely that he could, as it seemed to be a case of great peril from the beginning.

§ 1264. Mr. Brodie stated that he saw the deceased at the request of Mr. Vance on the 29th of October, and saw a large sloughing ulcer, which he believed might have been produced by rubbing a corrosive liniment into the parts on the 10th of October; that he did not know of any disease which should lead a person to apply a liniment with the intention of producing such an effect. On his cross-examination, he said: "It is and always has been the practice to produce counter-irritation, and the same application may be beneficial to one person and injurious to another, according to the habit and constitution. The effect of a liniment or blister, or any other external irritant, as we call them, sometimes goes beyond the effect we intend, and the most scientific practitioner may often be deceived in his expectations; he cannot always calculate to a nicety. I do not recollect at this moment any instance in which death has ensued from a blister properly applied, but I suppose it may happen. I suppose over-exercise would produce over-irritation where a blister had been applied. In treating a wound, I should judge from the appearances and state of the patient; I think it would be desirable, under such circumstances, to know the nature of the application, but I do not think

it would lead to any great difference in the treatment. In cases of poison, we do not apply the same remedy, especially when it has been taken into the stomach. As to external applications, I do not think a surgeon would judge so much from what had been applied, as from the appearances. Circumstances may occur in which, when a particular course is intended, a stranger's coming in and pursuing another and different course would produce mischief."

On his re-examination, he said: "In the case of such a wound as has been described and I saw, I should not have thought it necessary to resort to the person who had produced it; and I doubt whether, in this case, it would have led to any useful knowledge."

§ 1265. In answer to questions from the judge, he said: "Though I do not think it absolutely necessary, I should have got at the matter if I could. I should think that the spermaceti ointment would not certainly increase the danger of such a wound as that described on the 12th of October. I never saw such an effect produced by an ordinary medical application. There are some constitutions in which very slight remedies will produce dangerous consequences. I have seen one person die of the bite of a leech, and another by the sting of a bee. I had no means of knowing anything of this lady's constitution. I should believe from the evidence I have heard of the way in which the inflammation made progress, that it proceeded rather from the nature of the application than from the constitution of the party; but it may have depended on both. It is usual to try to ascertain the nature of the constitution. We cannot always do it, but in using potent remedies we use great precaution. I cannot form a positive opinion whether the liniment was rashly used or not, but the impression on my mind is, that it was used without sufficient caution, and, therefore, either rashly or ignorantly. I have seen many instances of inflammation from external application, but I never saw so extensive effect produced as in this instance."

Mr. Frankum then proved that he saw Mrs. Lloyd about before her death, and was present at the post-mortem examination. His opinion was that she was very healthy, and there was not, as far as he could judge, any peculiarity of constitution which would account for the violent effects produced.

§ 1266. It was very ably argued by the counsel for the defendant, that as the motive was to do good, and as there was no personal advantage to be gained, there was no responsibility, and the older cases were cited to show that the court should at this stage take the case from the jury, and direct an acquittal. But Bayley, B., said: "There are, in my mind, contradictory authorities, and I propose, with the assent of my learned brothers, to reserve the point for you, if the prisoner is convicted. I agree with my Lord Hale, and do not think there is any difference between a licensed and an unlicensed surgeon. It does not follow that in the case of either, an act done may not amount to manslaughter. There may be cases on which a regular medical man may be guilty; and that is all Lord Hale lays down. And that may be laid out of the question at this time. But the manner in which the act is done, and the use of due caution, seem to me to be material. Mr. Justice Foster, in his Criminal Law, p. 263, speaking of a person who happens to kill another by driving a cart or other carriage, says: 'If he might have seen

the danger, and did not look before him, it will be manslaughter *for want of due circumspection.*' But all that I mean to say now is, that there being conflicting authorities, and the impression of our minds not being in your favor, I purpose to reserve the point. As to the indictment not being supported by the evidence, one of the allegations is that the prisoner *feloniously* applied a noxious and injurious matter. And there is no doubt, if the jury should be of opinion against the prisoner, that the facts proved will be sufficient to warrant their finding that the prisoner *feloniously* did the act. For if a man, either with gross ignorance or gross rashness, administer medicine, and death ensue, it will be felony." Upon the defendant's counsel urging that to make out the felony a trespass must have been affirmatively proved, and that here there was no evidence of trespass at all, Bayley, B., said: "I think that if the jury shall find a given fact in the way in which I shall submit it to them, it will constitute the crime of *feloniously* administering, so as to make it manslaughter. As, for instance, if I have the toothache, and a person undertakes to cure it by administering laudanum, and says: 'I have no notion how much ought to be taken,' and gives me a cupful, which immediately kills me; or, if a person presenting James' powder, says, 'I have no notion how much ought to be taken,' and yet gives me a tablespoonful, which had the same effect; such person acting with rashness, will, in my opinion, be guilty of manslaughter. With respect to what has been said about a willing mind in the patient, it must be remembered that a prosecution is for the public benefit, and the willingness of the patient cannot take away the offence against the public."

§ 1267. The defendant being put upon his defence, said that the prosecution was in reality that of the medical gentlemen, who did not prosecute other medical men, but attacked him because his patients were the incurables of the faculty, and because he cured consumptions, which they were never able to do. He contended that it was not just to hold him responsible where the death occurred while Mrs. Lloyd was under the care of others, and neither he nor his medical friend were able to do anything for her. He also charged Mr. Campbell with unskilfulness in his treatment of the case, and argued that if the mixture had been of the injurious kind suggested, it must have produced mortification at a much earlier period than that in which, according to the evidence, it did. He also offered to prove that he had studied anatomy, and was acquainted with the constitution of the human frame. Of his skill and acceptableness as a practitioner very strong testimony was given, to the same effect as on the former trial.

§ 1268. Bayley, B., in summing up to the jury, said: "It matters not whether a man has received a medical education or not; the thing to look at is, whether, in reference to the remedy he has used, and the conduct he has displayed, he has acted with a due degree of caution, or, on the contrary, has acted with gross and improper rashness, and want of caution. I have no hesitation in saying, for your guidance, that if a man be guilty of gross negligence in attending to his patient after he has applied a remedy, or of gross rashness in the application of it, and death ensues in consequence, he will be liable to a conviction for manslaughter. There is no pretence in the present

case for saying that there was any degree of negligence after the application of the liquid, because it seems that the prisoner did not know where Mrs. Lloyd lived; and when he was sent for, on the 12th, he went, but was almost immediately dismissed, and was not allowed to see her afterwards. If you shall be of opinion that the prisoner made the application with a gross and culpable degree of rashness, and that it was the cause of Mrs. Lloyd's death, then, heavy as the charge against him is, he will be answerable on this indictment for the offence of manslaughter. There was a considerable interval between the application of the liquid and the death of the patient; yet if you think that the infliction of the wound on the 10th of October was the cause of the death, then it is no answer to say that a different course of treatment by Mr. Campbell might have prevented it. You will consider these two points: first, of what did Mrs. Lloyd die? You must be satisfied that she died of the wound which was the result of the application made on the 10th of October; and then, secondly, if you are satisfied of this, whether the application was a felonious application. This will depend upon whether you think it was gross and culpable rashness in the prisoner to apply a remedy which might produce such effects, in such a manner that it did actually produce them. If you think so, then he will be answerable to the full extent." The defendant was acquitted.(*j*)

§ 1269. Several subsequent cases occur in the English books, in which, down to a recent day, the doctrine was repeated that death resulting from grossly incautious or grossly unskilful conduct on the part of a medical practitioner, whether licensed or unlicensed, was manslaughter. In one case the prisoner, who for nearly thirty years had carried on the business of an apothecary and man-midwife, with a very considerable practice—having, amongst others, attended the deceased on the birth of all her children—was tried for manslaughter, in having made use of a metal instrument, known as a *vectis* or *lever*, in such a way as to cause death; and it was proved by medical men, first, that the weapon was a dangerous one, and improper to be used at that stage; and secondly, that it must have been used in a very improper way, and in an entirely wrong direction. Coleridge, J., told the jury that it was for them to say whether the instrument was the cause of death, and whether it had been used by the prisoner with due and proper skill and caution, or with gross skill or gross want of attention. "No man," he said, "was justified in making use of an instrument, in itself a dangerous one, unless he did so with a proper degree of skill and caution."(*k*) In another case, where a child died in consequence of a corrosive plaster placed improperly on its head, Bolland, B., advanced a step further, saying: "If any person, whether he be a regular or licensed medical man or not, professes to deal with the life or health of his majesty's subjects, he is bound to have competent skill to perform the task that he holds himself out to perform, and he is bound to treat his patient with care, attention, and assiduity."(*l*) And again, where the defendant, who was the agent of Morrison's pills, administered a large quantity of them to the deceased, Lord Lyndhurst, C. B., after reiterating the position that in such

(*j*) R. *v.* Long, 4 C. & P. 423.
(*k*) R. *v.* Spilling, 2 M. & Rob. 107; S. P. Ferguson's Cases, 1 Lew. 181.
(*l*) R. *v.* Spiller, 5 C. & P. 333.

cases there was no difference between the licensed and the unlicensed practitioner, said: "In either case, if a party having a competent degree of skill or knowledge makes an accidental mistake in his treatment of a patient, through which mistake death ensues, he is not thereby guilty of manslaughter; but if, when proper medical assistance can be had, a person totally ignorant of the science of medicine takes on himself to administer a violent and dangerous remedy to one laboring under disease, and death ensues in consequence of that dangerous remedy having been administered, then he is guilty of manslaughter."(*m*)

§ 1270. Varying in no essential degree from the English doctrine on the main point, though much more liberal in its application, is that determined by the Supreme Court of Massachusetts in the trial for murder of Samuel Thompson, the founder of the Thompsonian system. The report states that on the trial it had been proven that the prisoner, some time in the preceding December, came into Beverly, where the deceased then lived; announced himself as a physician, and professed an ability to cure all fevers, whether black, gray, green, or yellow; declaring that the country was much imposed upon by physicians, who were all wrong, if he was right. He possessed several drugs which he used as medicines, and to which he gave singular names. One he called *coffee;* another *well-my-gristle;* and a third *ram-cats.* He had several patients in Beverly and in Salem, previous to Monday, the 2d of January, when the deceased, having been for several days confined to his house by a cold, requested that the prisoner might be sent for as a physician. He accordingly came, and ordered a large fire to be kindled to heat the room. He then placed the feet of the deceased, with his shoes off, on a stove of hot coals, and wrapped him in a thick blanket, covering his head. In this situation he gave him a powder in water, which immediately puked him. Three minutes after, he repeated the dose, which in about two minutes operated violently. He again repeated the dose, which in a short time operated with more violence. These doses were all given within the space of half an hour, the patient in the mean time drinking copiously of a warm decoction, called by the prisoner his *coffee.* The deceased, after puking, in which he brought up phlegm, but no food, was ordered to a warm bed, where he lay in a profuse sweat all night. On Tuesday morning the deceased left his bed, and appeared to be comfortable, complaining only of debility; and in the afternoon he was visited by the prisoner, who administered two more of his emetic powders in succession, which puked the deceased, who, during the operation, drank of the prisoner's coffee, and complained of much distress. On Wednesday morning the prisoner came, and, after causing the face and hands of the deceased to be washed with rum, ordered him to walk in the air, which he did for about fifteen minutes. In the afternoon the prisoner gave him two more of his emetic powders, with draughts of his *coffee.* On Thursday the deceased appeared to be comfortable, but complained of great debility. In the afternoon the prisoner caused him to be again sweated, by placing him, with another patient, over an iron pan with vinegar heated by hot stones put into the vinegar, covering them at the same time with blankets. On Friday and Saturday the prisoner did not

(*m*) R. *v.* Webb, 1 M. & Rob. 405.

visit the deceased, who appeared to be comfortable, although complaining of increased debility. On Sunday morning, the debility increasing, the prisoner was sent for, and came in the afternoon, when he administered another of his emetic powders, and in about twenty minutes repeated the dose. This last dose did not operate. The prisoner then administered pearl-ash mixed with water, and afterwards repeated his emetic potions. The deceased appeared to be in great distress, and said he was dying. The prisoner then asked him how far the medicine had got down. The deceased, laying his hand on his breast, answered *here:* on which the prisoner observed that the medicine would soon get down and unscrew his navel; meaning, as was supposed by the hearers, that it would operate as a cathartic. Between nine and ten o'clock in the evening, the deceased lost his reason, and was seized with convulsive fits, two men being required to hold him in bed. After he was thus seized with convulsions, the prisoner got down his throat one or two doses more of his emetic powders, and remarked to the father of the deceased, that his son had got the *hyps* like the devil, but that his medicines would fetch him down; meaning, as the witness understood, would compose him. The next morning the regular physicians of the town were sent for, but the patient was so completely exhausted that no relief could be given. The convulsions and the loss of reason continued, with some intervals, until Tuesday evening, when the deceased expired. From the evidence it appeared that the *coffee* administered was a decoction of *marsh-rosemary*, mixed with the bark of *bayberry bush*, which was not supposed to have injured the deceased. But the powder, which the prisoner said he chiefly relied upon in his practice, and which was the emetic so often administered by him to the deceased, was the pulverized plant commonly called *Indian tobacco*. A Dr. French, of Salisbury, testified that this plant, with this name, was well known in his part of the country, where it was indigenous, for its emetic qualities; and that it was gathered and preserved by some families, to be used as an emetic, for which the roots, as well as the stalks and leaves, were administered; and that four grains of the powder was a powerful puke. But a more minute description of this plant was given by the Rev. Dr. Cutler. He testified that it was the *lobelia inflata* of Linnæus;(*n*) that many years ago, on a botanical ramble, he discovered it growing in a field not far from his house in Hamilton; that, not having Linnæus then in his possession, he supposed it to be a nondescript species of the lobelia; that, by chewing a leaf of it, he was puked two or three times; that he afterwards repeated the experiment with the same effect; that he inquired of his neighbor, on whose ground the plant was found, for its trivial name. He did not know of any, but was apprised of its emetic quality, and informed the doctor that the chewing of one of the capsules operated as an emetic, and that the chewing more would prove cathartic. In a paper soon after communicated by the doctor to the American Academy, he mentioned the plant, with the name of the *lobelia medica*.(*o*) He did not know of its being applied to any medical use until

(*n*) Lobelia. Class Pentandria. Order Monogynia. Capsule 2 or 3 celled, corol. irregular, cloven; antheræ united; stigma simple; species inflata; stem erect; leaves ovate, slightly serrate, longer than the peduncle; capsules inflated.—*Turt. Lin.* vol. iv. pp. 259, 330.

(*o*) Ibid.

the last September, when, being severely afflicted with the asthma, Dr. Drury, of Marblehead, informed him that a tincture of it had been found beneficial in asthmatic complaints. Dr. Cutler then made for himself a tincture, by filling a common porter bottle with the plant, pouring upon it as much spirit as the bottle would hold, and keeping the bottle in a sand heat for three or four days. Of this tincture he took a tablespoonful, which produced no nausea, and had a slight pungent taste. In ten minutes after he repeated the potion, which produced some nausea, and appeared to stimulate the whole internal surface of the stomach. In ten minutes he again repeated the potion, which puked him two or three times, and excited in his extremities a strong sensation like irritation; but he was relieved from a paroxysm of the asthma, which had not since returned. He had since mentioned this tincture to some physicians, and has understood from them that some patients have been violently puked by a teaspoonful of it; but whether this difference of effect arose from the state of the patients, or from the manner of preparing the tincture, he did not know. The Solicitor-General also stated that, before the deceased had applied to the prisoner, the latter had administered the like medicines with those given to the deceased to several of his patients, who had died under his hands; and to prove this statement he called several witnesses, of whom but one appeared. He, on the contrary, testified that he had been the prisoner's patient for an oppression at his stomach; that he took his emetic powders several times in three or four days, and was relieved from his complaint, which had not since returned. And there was no evidence in the cause that the prisoner, in the course of his very novel practice, had experienced any fatal accident among his patients. The defence stated by the prisoner's counsel was, that he had for several years, and in different places, pursued his practice with much success, and that the death of the deceased was unexpected, and could not be imputed to him as a crime. But as the court were satisfied that the evidence produced on the part of the commonwealth did not support the indictment, the prisoner was not put on his defence.

§ 1271. The chief justice charged the jury: and the substance of his direction, and of several observations, which fell from the court during the trial, is condensed by the reporter as follows:—

"As the testimony of the witnesses was not contradicted, nor their credit impeached, that testimony might be considered as containing the necessary facts, on which the issue must be found. That the deceased lost his life by the unskilful treatment of the prisoner, did not seem to admit of any reasonable doubt: but of this point the jury were to judge. Before the Monday evening preceding the death of Lovett, he had by profuse sweats, and by often repeated doses of the emetic powder, been reduced very low. In this state, on that evening, other doses of this *Indian tobacco* were administered. When the second potion did not operate, probably because the tone of his stomach was destroyed, the repetition of them, that they might operate as a cathartic, was followed by convulsion fits, loss of reason, and death. But whether this treatment, by which the deceased lost his life, is or is not felonious homicide, was the great question before the jury. To constitute the crime of murder, with which the prisoner is charged, the killing must have been with malice, either

express or implied. There was no evidence to induce a belief that the prisoner, by this treatment, intended to kill, or to injure the deceased; and the ground of express malice must fail. It has been said that implied malice may be inferred from the rash and presumptuous conduct of the prisoner, in administering such violent medicines. Before implied malice can be inferred, the jury must be satisfied that the prisoner, by his treatment of his patient, was wilfully regardless of his social duty, being determined on mischief. But there is no part of the evidence, which proves that the prisoner intended by his practice any harm to the deceased. On the contrary, it appears that his intention was to cure him. The jury would consider whether the charge of murder was, on these principles, satisfactorily supported. But though innocent of the crime of murder, the prisoner may, on this indictment, be convicted of manslaughter, if the evidence be sufficient. And the solicitor general strongly urged that the prisoner was guilty of manslaughter, because he rashly and presumptuously administered to the deceased a deleterious medicine, which, in his hands, by reason of his gross ignorance, became a deadly poison. The prisoner's ignorance is in this case very apparent. On any other ground consistent with his innocence, it is not easy to conceive that on the Monday evening before the death, when the second dose of his very powerful emetic had failed to operate, through the extreme weakness of the deceased, he could expect a repetition of these fatal poisons would prove a cathartic, and relieve the patient; or that he could mistake convulsion fits, symptomatic of approaching death, for an hypochondriac affection. But on considering this point, the court were all of opinion, notwithstanding this ignorance, that if the prisoner acted with an honest intention and expectation of curing the deceased by this treatment, although death, unexpected by him, was the consequence, he was not guilty of manslaughter. To constitute manslaughter, the killing must have been the consequence of some unlawful act. Now there is no law which prohibits any man from prescribing for a sick person with his consent, if he honestly intends to cure him by his prescription. And it is not felony, if through his ignorance of the quality of the medicine prescribed, or of the nature of the disease, or of both, the patient contrary to his expectation should die. The death of a man, killed by voluntarily following a medical prescription, cannot be adjudged felony in the party prescribing, unless he, however ignorant of medical science in general, had so much knowledge, or probable information of the fatal tendency of the prescription, that it may be reasonably presumed by the jury to be the effect of obstinate wilful rashness at the least, and not of an honest intention and expectation to cure. In the present case there is no evidence that the prisoner, either from his own experience or from the information of others, had any knowledge of the fatal effects of the *Indian tobacco*, when injudiciously administered: but the only testimony produced on this point proved that the patient found a cure from the medicine. The law, thus stated, was conformable, not only to the general principles which governed in charges of felonious homicide, but also to the opinion of the learned and excellent Lord Chief Justice Hale. He expressly states that if a physician, whether licensed or not, gives a person a potion, without any intent of doing him any bodily hurt, but with intent to cure or prevent a disease, and, con-

trary to the expectation of the physician, it kills him, he is not guilty of murder or manslaughter. If in this case it had appeared in evidence, as was stated by the solicitor general, that the prisoner had previously, by administering this *Indian tobacco*, experienced its injurious effects, in the death or bodily hurt of his patients, and that he afterwards administered it in the same form to the deceased, and he was killed by it, the court would have left it to the serious consideration of the jury, whether they would presume that the prisoner administered it from an honest intention to cure, or from obstinate rashness and fool-hardy presumption, although he might not have intended any bodily harm to his patient. If the jury should have been of this latter opinion, it would have been reasonable to convict the prisoner of manslaughter at least. For it would not have been lawful for him again to administer a medicine of which he had such fatal experience. It is to be exceedingly lamented, that people are so easily persuaded to put confidence in these itinerant quacks, and to trust their lives to strangers without knowledge or experience. If this astonishing infatuation should continue, and men are found to yield to the imprudent pretensions of ignorant empiricism, there seems to be no adequate remedy by a criminal prosecution, without the interference of the legislature, if the quack, however weak and presumptuous, should prescribe, with honest intentions and expectations of relieving his patients." The prisoner was acquitted.(*p*)

§ 1272. The more reeent American cases follow the views of Chief Justice Parsons, in Thompson's case.(*q*)

II. *In Actions for Torts.*

§ 1273. Where a medical man is sued in a civil court for damages for malpractice, the law as held by the English and American courts may be stated as follows:—

a. A physician or surgeon is only responsible for ordinary care and skill, and for the exercise of his best judgment in matters of doubt. He is not accountable for a want of the highest degree of skill.(*r*) And in determining whether the practitioner possesses ordinary skill, regard must be had to the advanced state of the profession at the time.(*s*)

b. A *volunteer* is held to much more strict responsibility. Thus, when medicine was administered to a slave without the owner's consent, the practitioner was held responsible for all the evil consequences which resulted.(*t*) And this rule is still more strictly applied when the volunteer excludes a competent practitioner, otherwise attainable.(*u*)

c. Where the law prescribes no absolute system, a physician is expected to practise according to the system he professes and avows. It was accordingly

(*p*) Com. *v.* Thompson, 6 Mass. 134; and see also Fairlee *v.* People, 11 Ill. 1.
(*q*) See Rice *v.* State, 8 Miss. 561; Fairlee *v.* People, 11 Ill. 1; Holmes *v.* State, 23 Alab. 17; Wh. C. L. § 1015.
(*r*) Leighton *v.* Sargent, 7 Fost. 460; Simonds *v.* Henry, 39 Maine, 155.
(*s*) Slater *v.* Baker, 2 Wils. 359; McCandless *v.* McWha, 22 Penn. St. R. 261.
(*t*) Hood *v.* Grimes, 13 B. Monr. 188.
(*u*) *Ante*, § 1252, and cases cited.

held admissible for a defendant, in an action for malpractice, to prove that his treatment of the case was according to the *botanic* system of practice, which he professed, and was known to follow.(*v*)

d. Such an action does not lie when it appears the plaintiff refused to co-operate with the practitioner, and to conform to his prescriptions.(*w*)

(*v*) Bowman *v.* Woods, 1 Iowa, 441.
(*w*) Leighton *v.* Sargent, 7 Fost. 460.

BOOK X.

PSYCHICAL INDICATIONS.

Mr. Rawlinson, as his motto to the Bampton Lectures of 1859, takes the following from Aristotle :—

Τῷ μὲν γὰρ ἀληθεῖ πάντα συνᾴδει τὰ ὑπάρχοντα, τῷ δε ψευδεῖ ταχὺ διαφανεὶ τἀληθές.

(FOR WITH THE TRUE ALL THINGS THAT EXIST ARE IN HARMONY; BUT WITH THE FALSE THE TRUE AT ONCE DISAGREES.)

This conflict between the true and false arises in all cases where guilt is attempted to be screened by human contrivance. The mind involuntarily becomes its own prosecutor. It drops at each point evidence to prove its guilt. Each statement that it makes—each subterfuge to which it resorts—each pretext it suggests—is a witness that it prepares and qualifies for admission on trial. In this, and in the universality of the psychological truth that guilt cannot keep its counsel, we may find an attribute of divine justice by which crime is made involuntarily its own avenger. Man cannot conceal the topic of a great crime, either anticipated or committed. It sometimes leaps out of him convulsively in dreams; sometimes a false cunning leads him to talk about it to know what suspicions may be afloat; sometimes that sort of madness which impels people to dash themselves from a high tower, forces him to the disclosure. Even his silence tells against him; and when it does not, the tremor of the body supplies the place of the tremor of the mind. Nor can he keep peace with his associates. There is a disruptive power in a consciousness of common guilt, which produces a hatred so demonstrative, that if it does not supply the proof, it attracts the suspicion of a great wrong having been done.

§ 1275. It is proposed to discuss these psychical proofs of guilt as follows :—

I. Prior to Crime.
- 1st. Preparations, § 1276.
- 2d. Intimations, § 1278.
- 3d. Overacting, § 1284.

II. At Crime.
- 1st. Incoherence, § 1285.
- 2d. Self-overreaching, § 1288.

III. After Crime.

1st. Convulsive confession, § 1291.

2d. Nervous tremor, § 1307.

3d. Morbid propensity to recur to scene and topic of guilt, § 1314.

4th. Permanent mental wretchedness, § 1318.

5th. Animosity between confederates, § 1322.

§ 1276. I. *Prior to crime.* 1st. *Preparation.*—The most astute here fail. Poison has to be obtained somewhere. For domestic purposes it might be boldly purchased; but the poisoner, in a vast majority of cases, is impelled to a more circuitous course. He buys it to kill vermin, and then gives a false excuse—as in a case where the prisoner pointed to a mouse which he said was killed by the poison, when in fact, it turned out that the mouse was not so killed. He places a loaded pistol on his person on a pretext which he takes care to announce, but which turns out in like manner to be false. There is, in almost every kind of crime, a swelling of the upper soil which shows the subterranean road which the criminal travelled. It would seem as if it were a germinal element of guilt that it cannot work without such memorials. The most adroit hand may get witnesses away from the intended spot—the greatest caution may be shown in the purchasing, the collecting or the fashioning of instruments—but still the traces remain, ready to increase the presumption, if not the positive material for conviction.

§ 1277. At the Shrewsbury races, in November, 1856, appeared two young men, each of whom had large stakes involved—in each case those of life and death. Polestar, one of the horses entered, belonged to John Parsons Cook; a sporting character and spendthrift, and not much besides. He had inherited a considerable estate, but a large portion of this had gone in dissipation, and now, the result of the race was to decide whether the remnant was to be doubled or destroyed. Watching him pretty closely, though with an off-hand familiarity which required an experienced eye to penetrate, was William Palmer, a man several years his senior, whose fortune, which had also been considerable, was now entirely gone. The "Chicken" was Palmer's horse, and on this he had ventured enormous bets. But he had a double game. Ruin, it is true, was imminent, but there was a method of escape. He was a medical man, and he had discovered the fatal properties of strychnine—how that it produced a disease scarcely to be distinguished from lock-jaw—how it could be administered without exciting the victim's attention—what was the minimum dose necessary to take life, and how, when this dose alone was administered, the poison was dispersed, leaving no traces behind. He had a book in which these points were stated, and to make himself certain, he not only turned down the book at the place, but made a memorandum giving the substance in his note-book. He was a man of the world, and he made himself, without appearing to do so, thoroughly master not only of Cook's confidence, but of his secrets. He knew that Cook had a disease which produced sores on the tongue which might be considered, if talked about in the right light, as the cause of lock-jaw, so he proceeded to tell about them in this light. He knew how to imitate hand-writing. So he wrote a paper by which Cook

acknowledged himself his debtor in a sum sufficient to absorb all Cook's effects. "Polestar" won and "Chicken" was beaten. Palmer, in his careless, sporting way, borrowed Cook's winnings to pay his losses. Then everything was ready to poison Cook, and the work was done with complete coolness and success. A little preliminary sickness was induced, during which nothing could be more kind and yet less officious than Palmer's attentions. It is true the strychnine had to be bought, but this was done in a circuitous way, and under a false color. Then it had to be administered, but two medical men, of undoubted probity, were called in, and as they recommended pills, it was very easy to substitute pills of strychnine for pills of rhubarb. So Cook was killed, and this so subtly, that the attending physician gave a certificate of apoplexy. As to the *post-mortem*, Palmer knew it would not amount to much, nor did it. No strychnine was discovered, but here the nerves of Palmer gave way. He showed an undue fidgetiness while the examinations were going on. He tried to tamper with the vessels in which the parts to be examined were placed. Then, also, the note he produced to show Cook's indebtedness to him was suspected; and then Cook's betting book could not be found. This led to Palmer's arrest. The first medical authorities in England proved that Cook's death came from strychnine and nothing else. The apothecaries from whom the strychnine was bought, attracted by the discoveries, identified Palmer. In a dark passage he had been seen to drop something into a glass for the sick man, but the passage was not so dark but that he was observed. Then his note-book turned up, showing how acquainted he was with the poison. And upon these facts, skilful as he was, and completely as he had covered up his guilt from the superficial eye, he was convicted and executed.

§ 1278. 2d. *Intimations.*—Intimations are to be tested by the character of the party from whom they emanate. In the present connection, they may be divided into three classes.

Direct intimations are the least frequent. The coarse old feudal baron, over whom there was no law which would interfere to make a threat defeat itself—whose importance depended upon the emphasis with which he pursued his enemies—to whose temper deceit was intolerable—threatened dashingly, and performed implacably. So the Scotch clansman followed his hereditary vengeance until the last of the tribe he hated was extinguished.

Now in these cases there was neither parsimony nor insincerity in the threat, and no reserve in the execution. What was said was meant. It is only, however, in the rudest and most lawless states of society that we now find this phase. In a community where there is a justice of the peace, to threaten life is followed by a binding over to keep the peace; and such a threat, therefore, is rarely heard except as a bluster. Civilization, it is true, has not extracted the venom from homicide, but it has silenced its rattle.

There are cases, however, where the rattle is still heard. A purpose of vengeance may be whispered in a friend's ear. Among men over whom there is no law, in the mountain slopes or prairie sweeps to which no jurisdiction except that of the vigilance committee has reached—among the hunters of the wilderness who have preceded law, or the wreckers of the coast who have defied it, or the outcasts of the city who have been rejected by it—in those

cases of domestic outrage where social usage seems to permit vengeance being taken into private hands—here threats may be the precursors of deeds. Desperation, also, gives out the same warning; and in such cases the warning uttered is of real consequence.

§ 1279. Then again a threat which may be meant merely as bravado, may afterwards become a real and desperate purpose. Provocation—opportunity—the desire to save the character from the imputation of mere bullying—may stiffen the attempt to frighten into an attempt to destroy. Or again, a settled animosity may be produced which may lead, though circuitously, to secret mischief.

Taking out these exceptions, however, and assuming the case to be one of a man of ordinary prudence, where there is no proved settled purpose of revenge, and in a community where the usual restraints of the law are applied, it becomes very unsafe to connect threats previously uttered by such a party with a recent homicide. "The tendency of such a prediction," says Mr. Bentham, "is to obstruct its own accomplishment. By threatening a man, you put him upon his guard, and force him to have recourse to such means of protection as the force of the law, or any extra-judicial powers which he may have at command, may be capable of affording him." In the case last put, it is not likely that the one who really accomplished a deed which would lead to condign punishment, was the one who publicly threatened it.

§ 1280. Then, however, comes the *ambuscade* intimation. The more refined society becomes, the more likely is this kind of preparation to precede crime. It may be adopted to lull the victim. When the massacres of St. Bartholomew were planned, the Huguenot chiefs were invited to Paris on the pretence of the wedding between Henry of Navarre and Margaret of Valois. "This politeness of the Italian Queen is very suspicious," said the more wary of them; "she kisses whom she would betray." But they went, were caressed, and were massacred.

The Admiral Coligny had been wounded by an assassin under the pay of the Duke of Guise. He lay helpless on his sick-bed, when Charles IX., then a boy of only nineteen, but thoroughly schooled by his malign mother, was announced. The Huguenots were thoroughly aroused by the attack on the admiral. The preparations for crushing them, however, were not then complete. It was necessary that they should be quieted and kept together. So Charles entered into the admiral's chamber, and throwing his arms around the aged warrior, said, "Father, *you* received the wounds, but *I* the sorrow." Two or three nights afterwards, Coligny, hacked and helpless as he was, was torn from his bed and cut to pieces. Then his body was dragged through the streets, and at last his trunk was kicked about like a foot-ball in the presence and for the diversion of the young king, who had shortly before embraced it. "Had it been the mother," said the survivors, "we would have had suspicion; but it was only the boy." Here was the Medicean mask—the very luxury of artifice in which Catharine of Medicis enveloped herself when about to commit a crime; and yet, from its very excess, it was a premonition. So it is that subtle guilt, in the very degree to which its subtlety is refined, gives its own warning, and at all events invokes its own retribution. For the

recoil of St. Bartholomew's night destroyed the House of Valois far more effectually than did the massacre the Huguenots. Charles IX. died only a few years after, of a disease in which nervous horror, if not remorse, was the prime agent, and so did men turn from him, even in Catholic Paris, that his body was deserted when on its way to the grave, and was followed to St. Denis by only three private gentlemen. His brother, Henry III., who succeeded him, was the last of his race.

§ 1281. Cowardice may work in the same way, from the fear of being struck back, if a face-to-face blow be attempted. So it was with James I. :—

"Willing to wound, and yet afraid to strike."

When he was rolling the execution of the Earl of Somerset as a sweet morsel in his mouth, he hung about the neck and slabbered over the face of that unfortunate favorite. It is not that he wanted to entrap—Somerset was caught already. Nor did he want to prevent detection, for he afterwards never shrank from the moral consequence of the deed. It was merely because he was physically afraid to face a collision.

Then come *precautionary* intimations. Of these the following may be taken as illustrations. Captain Donellan was tried in Warwick, in 1781, for poisoning Sir Theodosius Boughton, on whose estates his wife had a reversionary interest. The defendant had no doubt long formed a plan by which the deceased was to be removed. To exclude suspicion, the idea was thrown out long in advance that the latter's health was desperate—that speedy death was certain —that his imprudence was constantly heaping up causes upon causes to produce it.

When Sir Thomas Overbury was in the Tower, and when the arrangements for his poisoning, under the direction of the Countess of Somerset, were made, the doctors, whom the countess had in pay, were careful, long before the poison took effect, to announce that the patient was very sick, and, indeed, "past all recovery." It was a trick to prevent surprise.

§ 1282. Then come *prophetic* intimations. Those who approach a crime under the stress, either felt or assumed, of a supernatural decree, often move with the pomp worthy of so grand a mission. The muttered forebodings of the fanatic precede the fanatic's blow. The assassinations of John of Leyden and the assassinations of Joe Smith were always ushered in by intimations, more or less obscure, that the intended victim had fallen under the divine ban. Nor can we dismiss this as mere hypocrisy. The consciousness, though only partially sincere, of a supernatural impulse, cannot be completely repressed. The Greek tragedians felt this when they made those who meditated, under such an impulse, a deed of blood, bear witness to their awful mission by their dark forebodings of misery to him they would destroy. So it was that Clytemnestra stalked over the stage, relating to the sympathetic chorus the terrors before her eyes and the fate by which she was driven, and so it was that they ejaculated back their admiring horrors. So it was with the first Napoleon, with whom this sense of the supernatural was sometimes master, sometimes creature. He knew how to use it to overreach others; but he knew not how to use it without its sometimes overreaching himself. In the very face of

policy he could not always conceal within himself the decrees of destiny with which he supposed himself charged. Thus the death of the Duke d'Enghien was muttered forth by him long before the fatal arrest; and so before sovereign houses ceased to reign came the intimations of this vice-regent of destiny that the decree was about to issue. It was not mere threats—it was not ambuscade—it was the involuntary witness born against itself by crime acting under the guise of fate.

§ 1283. Among the vulgar these intimations are not unfrequent. Murderers, especially in the lower walks of life, are frequently found busy for some time previous to the act in throwing out dark hints, spreading rumors, or uttering prophecies relative to the impending fate of their intended victims. Susannah Holroyd was convicted at the Lancaster assizes of 1816, for the murder of her husband, her son, and the child of another person. About a month before committing the crime, the prisoner told the mother of the child that she had had her fortune read, and that, within six weeks, three funerals would go from her door, namely, that of her husband, her son, and of the child of the person whom she was then addressing. And so, on the trial of Zephon, in Philadelphia, in 1845, it was shown that the prisoner, who was a negro, had got an old fortune-teller in the neighborhood, of great authority among the blacks, to prophesy the death of the deceased.(*a*)

Where there is a family or local superstition, it may be invoked for the same purpose. Thus Miss Blandy, when her preparations for poisoning her father were in progress, threw out references to the supernatural music with which the house was pretended to be pervaded; music which, according to tradition, betokened a death in twelve months.

It is in these several classes of intimations, most of them involuntary, that we find another instance of the self-detective power of guilt.

§ 1284. 3d. *Overacting.*—Extraordinary affection is often simulated before a near relative is removed by poisoning. Thus, a husband is reconciled to and lives with his wife whom he intends to dispatch; and a wife, as in Mrs. Chapman's case, becomes singularly demonstrative in her public attentions to her husband. Mary Blandy, at the time her father was writhing under poisons she had herself administered, garlanded him over with caresses so inappropriate to his condition as to become the subject of suspicion then, and the items of proof afterwards. So industrious declarations of friendliness and fairness not unfrequently are thrown out prior to an assassination.

§ 1285. II. *At crime.* 1st. *Incoherence.*—"Providence," said Mr. Webster, in his speech in Knapp's case, "hath so ordained, and doth so govern things, that those who break the great law of Heaven by shedding man's blood, seldom succeed in avoiding discovery. Discovery must come, sooner or later. A thousand eyes turn at once to explore every man, everything, every circumstance, connected with the time and place; a thousand ears catch every whisper; a thousand excited minds intensely dwell on the scene, shedding all their light, and ready to kindle the slightest circumstance into a blaze of discovery."

While there is on the one hand this concentration of observation, there is

(*a*) Wh. Crim. Law, § 726.

an almost unlimited multiplication of points to be observed. The criminal stands in the position of a country which has a coast line of indefinite extent, compelled to meet an adversary whose powerful and vigilant fleet commands the seas. There is this distinction, however, between the cases. The coast line may be broken without ruin, but not so the line of a criminal's defence. A single false position in his plans—such, for instance, as the omission to wash off a blood-stain—the leaving a letter or a paper disclosing identity, in the room—the forgetting that snow was on the ground, by which footprints could be tracked—over-industry in setting up a sham defence—sudden forgetfulness in answering to a real and not a feigned name—is destruction. And yet this is the necessity of all who seek to cover up guilt. They are acting a part which, to be perfectly acted, requires perfect skill, perfect composure, perfect foresight, perfect powers of self-transposition. Now we all know how impossible it is for even the most consummate actor to be true to an assumed character for an hour, and this under the tension of the stage. Yet this is required of a criminal constantly, in the lassitude of home, as well as in the excitement of public observation, in his chamber as well as in the court-house.

§ 1286. Of all the great poisoners, the most stealthy and feline, we have been told, was the widow Zwanziger, known in history by the name of her last husband, the Privy-Councillor Ursinus, of Berlin. Madame de Brinvilliers was an enthusiast, who poisoned with a spread and dignity of circumstances which necessarily invited detection. The widow Zwanziger, on the other hand, slid softly about from house to house poisoning unobtrusively. So quiet and home-like were her attentions to the deceased—so deep and yet so well controlled her grief—so completely her whole deportment that of a tender, sober, and yet undemonstrative friend, that when her lover, who began to be tired of her—her husband, of whom she began to be tired—her aunt, whose heir she was—successively sickened and died; she was the last who would have been suspected of having dispatched them. Yet this most experienced, self-disciplined, and wary of poisoners—this actress so consummate that to the end she played the parts of the lady of fashion, and the sentimental and pietistic poetess with a perfection that showed no flaw—was careless enough, when engaged in such common game as the poisoning, as if merely to keep her hand in, of an ordinary man-servant—to leave the arsenic open in a room where her intended victim, made curious by one or two abortive operations she had attempted on him, scented it out, carried it to a chemist, and established the fact that it was of the same character with the poison by which she had seasoned some prunes she had been giving to him for dessert.

§ 1287. Equally wary and artistic, though in a different line of guilt, was Fauntleroy, perhaps the most complete forger of modern times. He was subtle, reticent, accomplished, and imperturbable. In a long course of years, he perfected a system of forgery, by means of which he obtained the transfer of stocks entered in the Bank of England, in the names of various persons, to the amount of £100,000. Such was the thoroughness of the fictitious accounts and false entries by which his forgeries were covered up, that his partners and clerks, as well as the bank, were deceived, and yet, at the very time he was weaving a veil otherwise impenetrable, he took the extraordinary step—a step unaccount-

able except on the hypothesis of the innate inability of the mind to act out with perfection any fabricated part—of keeping a private diary of his guilt, and executing a paper, signed with his name, and carefully put away among his vouchers, in which he expressly declared that guilt.

Richard Crowninshield, of Salem, Massachusetts, was, in 1830, a young man of family and education. Of dark and reserved deportment, subtle and self-possessed, he united a depravity and malignity of heart which made crime natural and normal to him, with a courage of purpose, a temperance in sensual indulgence, and a sagacity and adroitness in the choice and in the use of means, which made crime easy. His tastes and temperament were such as to cover his tracks with almost impenetrable darkness. "Although he was often spoken of as a dangerous man, his person was known to few, for he never walked the streets by daylight. Among his few associates he was a leader and a despot."

Joseph White, a wealthy merchant, eighty-two years of age, was found murdered in his bed, in his mansion house, on the morning of the 7th of April, 1830. His servant man rose that morning at six o'clock, and on going down into the kitchen and opening the shutters of the window, saw that the back window of the east parlor was open, and that a plank was raised to the window from the back yard; he then went into the parlor, but saw no trace of any person having been there. He went to the apartment of the maid-servant, and told her, and then went into Mr. White's chamber by its back door, and saw that the door of his chamber leading into the front entry was open. On approaching the bed he found the bedclothes turned down, and Mr. White dead; his countenance pallid, and his night-clothes and bed drenched in blood. He hastened to the neighboring houses to make known the event. He and the maid-servant were the only persons who slept in the house that night, except Mr. White himself, whose niece Mrs. Beckford, his housekeeper, was then absent on a visit to her daughter, at Wenham.

The physicians and the coroner's jury, who were called to examine the body, found on it thirteen deep stabs, made as if by a sharp dirk or poniard, and the appearance of a heavy blow on the left temple, which had fractured the skull, but not broken the skin. The body was cold, and appeared to have been lifeless many hours. On examining the apartments of the house, it did not appear that any valuable articles had been taken, or the house ransacked for them; there was a package of doubloons in an iron chest in his chamber, and costly plate in other apartments, none of which was missing. The first clue obtained to the murder was by the arrest, at New Bedford, of a man named Hatch, who stated, when under examination for another offence, that he had heard Crowninshield mutter intimations of violence towards Mr. White. Soon another thread was found. Mr. White was childless, and left as his legal representatives Mrs. Beckford his housekeeper, the only child of a deceased sister, and four nephews and nieces, the children of a deceased brother. He had executed, as was known in the family, a will by which he left by far the larger portion of his estate to Stephen White, one of the few children of the testator's brother, reserving but a small legacy to Mrs. Beckford. A daughter of Mrs. Beckford married Joseph J. Knapp, Jr., who, with his brother, John

Francis Knapp, were young shipmasters of Salem, of respectable family, the sons of Joseph J. Knapp, also a shipmaster. Shortly after the murder, the father received a letter obscurely intimating that the party writing the letter was possessed of a secret connected with the murder, for the preservation of which he demanded a "loan" of three hundred and fifty dollars. This letter Mr. Knapp was unable to comprehend, and handed it to his son, Joseph J. Knapp, who returned it to him, saying he might hand it to a vigilance committee which had been appointed by the citizens on the subject. This the father did, and it led to the arrest of Charles Grant, the person writing the letter, who, after some delay, disclosed the following facts: He (Grant) had been an associate of R. Crowninshield, Jr., and George Crowninshield; he had spent part of the winter at Danvers and Salem, under the name of Carr, part of which time he had been their guest, concealed in their father's house in Danvers; on the 2d of April he saw from the windows of the house Frank Knapp and a young man named Allen ride up to the house; George walked away with Frank, and Richard with Allen, and on their return, George told Richard that Frank wished them to undertake to kill Mr. White, and that J. J. Knapp, Jr., would pay one thousand dollars for the job. They proposed various modes of doing it, and asked Grant to be concerned, which he declined. George said the housekeeper would be away all the time; that the object of Joseph J. Knapp, Jr., was first to destroy the will, and that he could get from the housekeeper the keys of the iron chest in which it was kept. Frank called again in the same day in a chaise, and rode away with Richard, and on the night of the murder, Grant stayed at the Halfway House, in Lynn. In the mean time suspicion was greatly strengthened by Joseph J. Knapp, Jr., writing a pseudonymous letter to the vigilance committee, trying to throw the suspicion on Stephen White. Richard Crowninshield, George Crowninshield, Joseph J. Knapp, Jr., and John F. Knapp, were arrested and committed for murder. Richard Crowninshield made an ineffectual attempt, when in prison, to influence Grant, who was in the cell below, not to testify, and when this failed, committed suicide. John F. Knapp was then convicted as principal, and Joseph J. Knapp, Jr., as accessory before the fact. George Crowninshield proved an alibi, and was discharged.

§ 1288. We have here a murder coolly planned and executed by persons of consummate skill, and yet we find the whole scheme disclosed by the following incoherences:—

a. Joseph J. Knapp, Jr., instead of retaining or destroying Grant's letter, as he could readily have done, losing his presence of mind so far as to hand it to his father with directions to give it to the vigilance committee.

b. Crowninshield, ordinarily so astute and reserved, letting Grant, who was not even an accomplice, and who therefore was not pledged by fear to silence, into the secret.

c. All the parties basing the assassination on a mistake of law, they supposing that Mr. White's representatives, in case of his death intestate, would take *per stirpes*, whereas in fact they would take *per capita;* so that actually Mrs. Beckford, to increase whose estate the murder was committed, received no more by an intestacy than she would have by the will.

§ 1289. 2d. *Self over-reaching.*—The Earl of Northampton, the second son of Henry Howard, Earl of Surrey, was the uncle of Lady Frances Sussex, the wife first of the Earl of Essex, and afterwards of Robert Carr, the famous Earl of Somerset. Private revenge and state policy led this beautiful and brilliant though bad woman to desire the murder of Sir Thomas Overbury, who opposed her marriage with her second husband, and who held secrets which might, if disclosed, thwart her political ambition. She procured or promoted the committal of Overbury to the Tower, where poison was administered to him under her direction. In the attempt, at least, she had as accomplices, her husband, and her uncle, Lord Northampton. The work was successful. The next effort was to conceal it. Helwysse, the Lieutenant of the Tower, was instantly to advise Lord Northampton of the result. This he did, and then came a letter, evidently meant to be confidential, from the Earl in reply:—

"NOBLE LIEUTENANT—If the knave's body be foul, bury it presently. I'll stand between you and harm: but if it will abide the view, send for Lidcote, and let him see it, to satisfy the damned crew. When you come to me, bring me this letter again yourself with you, or else burn it. NORTHAMPTON."

This was written early in the morning. So great, however, was the turmoil in Northampton's mind, lest the body should not be got out of sight, that at noon on the same day he hurries off the following:—

"WORTHY MR. LIEUTENANT—Let me entreat you to *call Lidcote and three or four friends*, if so many come to view the body, if they have not already done it; and so soon as it is viewed, without staying the coming of a messenger from the court, in any case see him interred in the body of the chapel within the Tower instantly.

"If they have viewed, then bury it by and by; for it is time, considering the humors of the damned crew, that only desire means to move pity and raise scandal. Let no man's instance cause you to make stay in any case, and bring me these letters when I next see you.

"Fail not a jot herein, as you love y^{r} friends: nor after Lidcote and his friends have viewed, stay one minute, but let the priest be ready; and if Lidcote be not there, send for him speedily, pretending that the body will not tarry."

§ 1290. This had no signature, and was evidently meant for the eye of Helwysse alone. But what would the world say if the proud and great Earl of Northampton, the "wisest among the noble, and the noblest among the wise," should seem to be silent when officially informed of the death of one with whom he and Lord Rochester (the first title of Somerset) had been on such intimate terms. So he writes to the Lieutenant the following artful letter, meant for the public eye:—

"WORTHY MR. LIEUTENANT—My Lord of Rochester, desiring to do the last honor to his dec'd friend, requires me to desire you to deliver the body of Sir T. Overbury to any friend of his that desires it, to do him honor at his funeral. Herein my Lord declares the constancy of his affection to the dead, and the meaning that he had in my knowledge to have given his strongest straine at this time of the King's being at Tibbald's, for his delivery. I fear

no impediment to this honorable desire of my Lord's but the unsweetness of the body, because it was reputed that he had some issues, and, in that case, the keeping of him above must needs give more offence than it can do honor. My fear is, also, that the body is already buried upon that cause whereof I write; which being so, it is too late to set out solemnity.

"This, with my kindest commendations, I ende, and reste

"Your affectionate and assured friend,

"H. NORTHAMPTON.

"P. S. You see my Lord's earnest desire, with my concurring care, that all respect be had to him that may be for the credit of his memory. But yet I wish, withal, that you do very discreetly inform yourself whether this grace hath been afforded formerly to close prisoners, or whether you may grant my request in this case, who speak out of the sense of my Lord's affection, though I be a counsellor, without offence or prejudice. For I would be loath to draw either you or myself into censure, now I have well thought of the matter, though it be a work of charity."(*b*)

Unfortunately for the success of the plot, both sets of letters were preserved; and their inconsistency formed one of the chief presumptions in the remarkable trials that ensued.

§ 1291. III. *After crime.* 1st. *Convulsive confession.*—"The guilty soul," said Mr. Webster, in a speech already quoted, "cannot keep its own secret. It is false to itself; or rather it feels an irresistible impulse of conscience to be true to itself. It labors under its guilty possession, and knows not what to do with it. The human heart was not made for the residence of such an inhabitant. It finds itself preyed on by a torment, which it dares not acknowledge to God or man. A vulture is devouring it, and it can ask no sympathy or assistance, either from heaven or earth. The secret which the murderer possesses soon comes to possess him; and, like the evil spirits of which we read, it overcomes him, and leads him whithersoever it will. He feels it beating at his heart, rising to his throat, and demanding disclosure. He thinks the whole world sees it in his face, reads it in his eyes, and almost hears its workings in the very silence of his thoughts. It has become his master. It betrays his discretion, it breaks down his courage, it conquers his prudence. When suspicions from without begin to embarrass him, and the net of circumstance to entangle him, the fatal secret struggles with still greater violence to burst forth. It must be confessed, it will be confessed; there is no refuge from confession but suicide, and suicide is confession."

Confessions that are voluntary are out of the range of the present discussion. Of those that are involuntary or convulsive we may take the following illustrations.

§ 1292. John Whitney, a wealthy farmer of Loudonville, Ohio, was robbed and murdered in November, 1856. Great but unsuccessful efforts were made to ferret out the murderer. A man named Stringfellow, who was living at Loudonville at the time, was strongly suspected of the crime, but nothing could be fastened upon him. Stringfellow soon afterwards left the neighbor-

(*b*) Amos' Great Oyer, 173, &c.

hood, and, after an absence of two years, settled in the village of Johnstown, Hardin County. Here he was taken sick, and in his illness became delirious. It would seem that conscience was constantly at work within him, for during his delirium he mentioned Whitney's name frequently, and divulged a number of secrets which had been long hidden in his bosom, and which left not the shadow of a doubt but that he was a blood-guilty man. After Stringfellow became convalescent, he was told of the guilty secrets he had laid bare: the murder was charged upon him, and he was placed under surveillance.

Here is murder confessed in delirium. Cases of confession in dreams are more numerous. A person who worked in a brewery at Basle, in Switzerland, quarrelled with a fellow workman, and struck him in such a manner as to produce instant death. He then took the dead body and threw it into a large fire under the boiling vat, where it was in a short time so completely consumed that no traces of its existence remained. On the following day, when the man was missed, the murderer observed that he had seen his fellow servant intoxicated, and that he had probably been drowned in crossing a bridge which lay on his way home. For seven years after no one entertained any suspicion as to the real state of the case. At the end of this time, the murderer, being again employed in the same brewery, was constantly reflecting on the singularity of the circumstance that his crime had been so long concealed. One night one of his fellow workmen, who slept with him, hearing him say in his sleep, "It is now fully seven years ago," asked him, "What was it you did seven years ago?" "I put him," he replied, still speaking in his sleep, "under the boiling vat." As the affair was not entirely forgotten, the man, suspecting that his bed-fellow might allude to the person who was missed about that time, informed a magistrate of what he had heard. The murderer was apprehended, and though at first denying all knowledge of the matter, afterwards confessed and was executed.

§ 1293. That guilt takes the dreaming state as a peculiar site for the exercise of its retributive retrospections, is a familiar psychological fact. "If," said Pascal, "we dreamt every night of the same thing, it would perhaps affect us as powerfully as the objects which we perceive every day." "Dreams," was the comment of Sir W. Hamilton, "have frequently a degree of vivacity which enables them to compete with the reality." And a keen observer of the human mind—one whose keenness is not made the less remarkable by the fact that he was both the tenderest and most humorous poet of his day—has given us a vivid picture of the misery which marks this form of remorse:—

"—Her sleep was restless and broken still;
For turning often and oft
From side to side, she muttered and moaned,
And tossed her arms aloft.

"At last she started up,
And gazed on the vacant air,
With a look of awe, as if she saw
Some dreadful phantom there;
And then in the pillow she buried her face
From visions ill to bear.—" (c)

(c) See Hood's Lady's Dream.

Now, on confessions emitted when in this troubled state, not a few criminal processes have been made to depend. One well-known case is referred to, in another relation, elsewhere. A peddler was murdered. All attempts to discover the assassin failed. At last a wayfaring man, who had been strolling about the neighborhood, dreamed that the body would be found in a particular spot, and that certain persons with whom he had lately been sleeping in a barn were the guilty parties. It turned out that this was true. But it also turned out that the dreamer had, in his own dreams, heard the convulsive confessions of one of the assassins, the latter also dreaming.

§ 1294. Before, however, a confession should be taken as real, it should be subjected to certain psychological tests. Delusion; a morbid desire to attract attention; a sort of epidemic which sometimes strikes down whole classes with a passionate impulse to insist upon some blood-stain on the conscience, something like the hypochondriac epidemic impulse which insists upon some personal abnormity;(*d*) weariness of life; a propensity to self-destruction through a channel which from its very tortuousness possesses its own fascination; a Lara-like desire to appear mysterious and dark, though in this case the propensity exudes in vague intimations of participation in

"Nameless deeds of guilt"

rather than in confessions of specific offences;—the existence of such elements as these should be inquired into before a confession is received as absolute.

§ 1295. Delusions, either sane or insane, have produced many false confessions. A very singular illustration of the first has lately been revived before the American public, and has already been more than once cited. Two brothers, named Boorn, living in Vermont, had an altercation with their brother-in-law, a man named Colvin, a partial lunatic. They left him, as they may well have supposed, in a dying state. He crawled off, however, and fled to the middle States. Several years afterwards, suspicion was excited by a dream of an uncle of the supposed murderers. In this dream he was told that Colvin had been murdered, and that his remains would be found in a spot that was pointed out. The dream was repeated three times until at last the place was searched, and some articles of clothing were found which were identified as Colvin's. Then a spaniel, connected in some way with the Colvin family, was seen snuffing uneasily about a spot close by, calling attention to it by his importunities. It, too, was examined, and a cluster of bones were drawn up by the dog's paw. That these were Colvin's, and that these almost miraculous interpositions were designed to bring the murder out, there were none in the community who doubted.

§ 1296. Other circumstances led to the arrest of the Boorns. They were conscious of guilt, and it is no wonder that these strange prosecutors, which after so long an interval had united by means so supernatural to ferret out their guilt, should have impressed them with a belief that it was vain to fight against what seemed to be Divine vengeance. So one of them confessed the

(*d*) We have an illustration of the latter in a convent of nuns, near Chalons, who were stricken down with the belief that they were cats.

murderous assault, and went on further to state how, in order to evade detection, the body had been partially burned, and the clothes destroyed. The first part of the story was true. The last was a fabrication, the result either of delusion, or of desperation, or of that impulse to complete a story with which the imagination is sometimes seized. That the actual death was indeed false, was shown by the subsequent appearance of Colvin himself, in time to intercept the execution of at least one of his supposed murderers.

But a still more singular confession followed. The first was in 1819. In 1860, a very old man named Boorn was arrested in Cleveland for counterfeiting. When in custody, he confessed that forty years before he had been concerned in a murder, and escaped by a false personation of the deceased. The confession led to a re-investigation of the former trial. That the second confession, as well as the first, was a delusion, was established finally. But the retention of this delusion for forty years in the criminal's breast, shows the enduring effect on the nervous system of the guilt of blood, even though that guilt was not consummated.

§ 1297. Perhaps the same hypothesis will explain a class of cases which have recently been revived in the public attention.(*e*) Prominent among these is what was long called the Campden Wonder. An old man, named William Harrison, steward to Lady Campden, went out on foot on the 16th of August, 1660, to collect rents. He did not return at his usual hour, and his wife sent his servant, John Perry, to inquire after him. Perry, according to his own account, wandered about during the night without finding his master. The next morning, however, a hat and comb much hacked and cut, and a band stained with blood, which had been worn by Harrison the evening before, were found in a wild spot, near a large furze brake, where he would have been likely to have been met by Perry. The neighborhood naturally enough jumped at the conclusion that Harrison was murdered, and that Perry was the murderer. Perry soon came to this conclusion too, and made a confession to this effect, implicating his brother and mother. The trial took place, and though there was no proof of the *corpus delicti*, the mother and the two sons were convicted and executed. Some years afterwards Harrison reappeared at Campden, stating that he had been robbed by two horsemen on the night in question, and then kidnapped beyond seas.

§ 1298. So much for *sane* delusions. Somewhere between sane and insane delusions, may be classed those of witches. So far as concerns the spiritual sin, they had no doubt a foundation of fact. The loosest deist will admit that there are exterior agencies, in the shape of temptations, which assault the human heart, and with which it is a sin to tamper. The Christian ascribes these temptations to the direct agency of Satan. Now let us suppose the temptation of jealousy. A rival is hated, and his death vehemently agonized for. Here is a positive sin of the heart. Let the law ascribe this—as the common law did and does—to the instigation of the devil; and let a tampering with this temptation, as a sort of commerce with the evil one, be made a specific offence, as it once was. And add to this the spites arising from the petulances

(*e*) See Blackwood's Magazine, July, 1860, p. 54.

of old age. Here you have a series of subjective crimes which may be confessed with truth.

But the witches did not stop here. They confessed to all sorts of consequential overt acts. Their machinations had taken effect. Infants had melted away before their evil eye, as wax before the fire. The old had withered and wrinkled as the same glance fell on them. Hearts which loved were alienated; hearts that believed were made to curdle in unbelief. Mothers dropped their untimely fruit. The warrior's courage forsook him in battle. Cattle took sick, and pains, through the witches' magic, tore and wrung the frames of those who crossed the witches' path.

Now many of these confessions were the result of mere insanity. But it would be wrong, however, not to recognize in others of them incidents of that divine economy which makes a superstitious foreboding, and sometimes a monomaniac realization of the consequences of crime, one of the results of the criminal conception. The mind that revels in intended guilt is apt, in the delirium of remorse, if it be not in the development of the imagination under the fervor of a wounded conscience, to see the consequences which that guilt would have produced. There is never an entire orphanage of the deed from the intent. There are few who cannot recall waking in an agony of terror at the picture brought before them, of the consummation of some unlawful purpose. They *dreamed* they did the thing over which they were brooding, but from which they were held back by want of opportunity, or fear of consequences.

Hawthorne thus vividly portrays this phenomenon :—

"In the depths of every heart, there is a tomb and a dungeon, though the lights, the music and revelry above may cause us to forget their existence, and the buried ones, or prisoners whom they hide. But sometimes, and oftenest at midnight, those dark receptacles are flung wide open. In an hour like this, when the mind has a passive sensibility, but no active strength; when the imagination is a mirror, imparting vividness to all ideas, without the power of selecting or controlling them; then pray that your griefs may slumber, and the brotherhood of remorse not break their chain. It is too late! A funeral train comes gliding by your bed, in which Passion and Feeling assume bodily shape, and things of the mind become dim spectres to the eye. There is your earliest sorrow, a pale young mourner, wearing a sister's likeness to first love, sadly beautiful, with a hallowed sweetness in her melancholy features, and grace in the flow of her sable robe. Next appears a shade of ruined loveliness, with dust among her golden hair, and her bright garments all faded and defaced, stealing from your glance with drooping head, as fearful of reproach; she was your fondest Hope, but a delusive one; so call her Disappointment now. A sterner form succeeds, with a brow of wrinkles, a look and gesture of iron authority; there is no name for him unless it be Fatality, an emblem of the evil influence that rules your forture; a demon to whom you subjected yourself by some error at the outset of life, and were bound his slave forever, by once obeying him. See! those fiendish lineaments graven on the darkness, the writhed lip of scorn, the mockery of that living eye, the pointed finger touching the sore place in your heart! Do you remember any act of enormous

folly, at which you would blush, even in the remotest cavern of the earth? Then recognize your Shame.

"Pass, wretched band! Well for the wakeful one, if, riotously miserable, a fiercer tribe do not surround him, the devils of a guilty heart, that holds its hell within itself. What if remorse should assume the features of an injured friend? What if the fiend should come in woman's garments, with a pale beauty amid sin and desolation, and lie down by your side? What if he should stand at your bed's foot, in the likeness of a corpse, with a bloody stain upon the shroud? Sufficient without such guilt is this nightmare of the soul; this heavy, heavy sinking of the spirits; this wintry gloom about the heart; this indistinct horror of the mind, blending itself with the darkness of the chamber."

§ 1299. Poets, who have observed human nature the most closely, and this not from its religious side, have recognized in mere unexecuted guilt, this retributive energy. Shakspeare makes Cardinal Beaufort, when dying, collect these phantoms of undeveloped purposes. Hood, in one of the most exquisite of his poems, a poem which has been already noticed, describes to us a lady of refinement and elegance, whose sins had been those of mere omission—who had dressed in silk and satin, and fed on the dainties of the land, and whose hardness consisted merely in a neglect to look after the poor—as writhing in a dream at the sight of the crowd of miserable outcasts whom she might have relieved but did not. It may have been that many of these vivid and awful confessions of the witches were produced, though with a greater self-deceiving power, by the same influence. A fevered conscience in both cases was at work. The witch, however, threw the phantom outward, on the canvas, as it were, of a magic lantern, until it became a reality; with others, who were more enlightened, or who have less deliberately and persistently delighted in the conception of the crime, the phantom was thrown inwards, and was detected as a phantom, though perhaps at the same time as a rebuke. But the witch believed in the *fact*, and confessed it.

§ 1300. Now the policy which permitted the execution of these poor wretches, without proof of a *corpus delicti*, was no doubt barbarous and wrong. But this should not lead us to refuse to recognize as a part of the divine economy of rewards and punishments, this very self-punishing incident of that criminal purpose on which the mind has consciously and determinedly revelled. The intent brings its phantom consequences with it. Sometimes they continue phantoms, but they do not the less torture or degrade the mind they haunt. They may torture it by the presence of a tribe of avenging shades, or they may degrade it by introducing into it a progeny of foul and polluted consummations. The monastic system has brought many witnesses to this. So it was with the phantoms of sensuality of Jerome, and the phantoms of pride of Simon Stylites. Wilkie, in one of his drawings, brings before us—and no one who has studied it can forget it—a copy of a Spanish picture, where a young monk, feverish and macerated with the internal gnawings of a brood which had been hatched in his heart in the heat of mere permitted conceptions—appeals for pity and solace to an aged confessor; and the agonized expression of the suppliant, and the sad, wise, sympathy of the confessor, tell

the story but too plainly. But the story is not one of the confessional alone, but of every heart which, before whatever throne, bears itself and pours forth the story of indulged conceptions. And every lunatic asylum bears witness to the same fact in the cases of imbecility in which unexecuted purposes of sin—purposes which had only been thought over, but at the same time nursed—are babbled out, and with all their coarse consequences told by the tongue of age. The muscular hand of youth kept the curtain down—and the secret though nourished sin was thus concealed. But when the power of self-restraint weakened—when the cords and rings of the curtain decayed—then the secluded contents of the heart—these unexecuted sins, now exhaling phantoms by their very exposure—rise and spread themselves in their deformity before the public gaze. Sometimes overt acts follow, and we hear of sudden falls in old and heretofore correct men—falls, however, which were not sudden, for there were back-stairs in the heart down which the culprit had been for years descending. Sometimes the act is one of imagination only, but is talked out in the gross familiarity of senility. But, however this phenomenon may exhibit itself, it is a part of that grand system of Providence, by which guilt is lodged in the *intent*, and by which, as a compensation for human law, which judges of the overt act alone, the intent incloses in itself its own retribution. The thing is patent in the history of society, and is meant to be so, as a mark of the divine purpose—as a deterrer—as an avenger—as an element to be received into consideration in adjusting the balance of human jurisprudence.

§ 1301. But there are cases in which these delusive confessions may be the offspring of pure mania, though in such the delusion must be proved by the mania, not the mania by the delusion. Bunyan speaks of such a case, half pityingly, half doubtingly:—

"Since you are entered upon stories, I also will tell you one, the which, though I heard it not with my own ears, yet my author I dare believe. It is concerning one old *Tod*, that was hanged about twenty years ago or more, at *Hartford*, for being a thief. The story is this: At a summer assize holden at *Hartford*, while the judge was sitting upon the bench, comes this old *Tod* into the court, clothed in a green suit, with his leathern girdle in his hand, his bosom open, and all in a dung sweat as if he had run for his life; and being come in, he spake aloud as follows: '*My lord*,' said he, '*here is the veryest rogue that breathes upon the face of the earth; I have been a thief from a child; when I was but a little one I gave myself to rob orchards, and to do other such like wicked things, and I have continued a thief ever since. My lord, there has not been a robbery committed this many years, within so many miles of this place, but I have either been at it or privy to it.*' The judge thought the fellow was mad; but after some conference with some of the justices they agreed to indict him, and so they did, of several felonious actions; to all which he heartily confessed guilty, and so was hanged with his wife at the same."

"I murdered my wife, some years ago," says the inmate of an insane asylum to a visitor. "It is necessary that I should be placed here in confinement." And then the supposed murderer goes on to relate with great

equanimity and circumstantiality the details of the murder. But the wife was not murdered at all, and is still alive.

So the publication of a conspicuous homicide is apt to generate a series of pretenders to the honor of being the perpetrator. Why should there not be several Charlotte Cordays among a thousand patients, as well as several Robespierres?

§ 1302. Then comes the epidemic confession—the strangest of all. We have several instances of this in the German monkish chronicles of the twelfth and thirteenth centuries. True purposes, as well as feigned facts, are often thus confessed. Whole communities, acting under that singular fascination which mind in the aggregate often acquires over mind in the individual, have thus come forward in sackcloth and ashes and accused themselves sometimes falsely of the act, sometimes perhaps truly of the intent. Nor are these epidemics peculiar to a superstitious age. Dr. Southwood Smith, in his lectures on Forensic Medicine, brings an instance down to the present century. Captain Pigot, during the naval struggles between France and England under the empire, commanded the Hermione frigate. A mutiny took place, and he and a portion of his officers were murdered very barbarously. "One midshipman escaped, by whom many of the criminals, who were afterwards taken and delivered over to justice, one by one, were identified. Mr. Finlaison, the government actuary, who at that time held an official situation at the admiralty, states: 'In my own experience I have known, on separate occasions, more than six sailors who voluntarily confessed to having struck the first blow at Captain Pigot. These men detailed all the horrid circumstances of the mutiny with extreme minuteness and perfect accuracy; nevertheless not one of them had ever been in the ship, nor had so much as seen Captain Pigot in their lives. They had obtained by tradition from their mess-mates the particulars of the story. When long on a foreign station, hungering and thirsting for home, their minds became enfeebled; at length they actually believed themselves guilty of the crime over which they so long brooded, and submitted with a gloomy pleasure to being sent to England in irons for judgment.'"

§ 1303. Then comes that morbid vanity which takes self-crimination as a way of obtaining notoriety. Hypochondria sometimes mixes with this. Persons whose temperament has become thus touched will resort to the most desperate methods to attract attention. The most innocent type that we have is that of the sentimentalist, who feigns certain mental experiences of a peculiarly poignant character; which experiences are hung out something in the way pictures are in a gallery, to excite the interest of the amateur. Of course the more lurid the coloring, and the more sad the sorrow it depicts, the more real the sympathy to be secured from an honest and kind-hearted observer, and the more profuse the ejaculations of the mere co-sentimentalist.

Next *facts* are fabricated as well as *experiences*. Thus Cherubina believes that she was changed in the cradle, and that an earl and countess are her parents, instead of the old farmer and his wife who brought her up. This big lie, of course, necessitates a myriad of minor ones, to enable it to be carried about with a proper retinue, until Cherubina's whole life becomes a

fabrication. If guilt has to be confessed, to make up a consistent story, confessed guilt is.

Persecutions with such are favorite myths. Margaret Fuller, whose attitudes and surroundings, in spite of her apparent earnestness, were all pictorial and artificial, made the neglect she suffered from her father one of the favorite topics in her letters, though even her editor, laudatory as he is, is forced to tell us that all this neglect was imaginary—that a kinder or truer father did not exist. It is still doubtful whether Caspar Hauser's wounds were not self-inflicted and his dumbness self-assumed. And it is certain that the more tender the care bestowed on such cases is, and the more confiding the sympathies, the more frequent and subtle the simulation.

§ 1304. But if the flag by which this attention is to be roused is inscribed among the more refined with a sentiment, among the coarser it is likely to be blazoned with a crime. Lord Cockburn, in his memoirs, gives us the following instance of this :—

"On the 13th of November, 1806, a murder was committed in Edinburgh, which made a greater impression than any committed in our day, except the systematic murders of Burke. James Begbie, porter to the English Linen Company's Bank, was going down the close in which the bank then was, on the south side of the Canongate, carrying a parcel of bank-notes of the value of four or five thousand pounds, when he was struck dead by a single stab, given by a single person who had gone into the close after him, and who carried off the parcel. This was done in the heart of the city, about five in the evening, and within a few yards of a military sentinel, who was always on guard there, though not exactly at this spot, and at the moment possibly not in view of it. Yet the murderer was never heard of. The soldier saw and heard nothing. All that was observed was by some boys who were playing at hand ball in the close; and all that they saw was that two men entered the close as if together, the one behind the other, and that the front man fell, and lay still; and they, ascribing this to his being drunk, let him lie, and played on. It was only on the entrance of another person that he was found to be dead, with a knife in his heart, and a piece of paper, through which it had been thrust, interposed between the murderer's hand and the blood. The skill, boldness, and success of the deed produced deep and universal horror. People trembled at the possibility of such a murderer being in the midst of them, and taking any life that he chose. But the wretch's own terror may be inferred from the fact that in a few months the large notes, of which most of the booty was composed, were found hidden in the grounds of Bellevue. Some persons were suspected, but none on any satisfactory ground; and, according to a strange craze or ambition not unusual in such cases, several charged themselves with the crime, who, to an absolute certainty, had nothing to do with it."

Then come confessions from very weariness of life—

> "I am foot-sore, and very weary,
> And I travel to meet a friend."

That friend is death, and the frame of mind which thus seeks it is very apt to engender phantoms of blood-guiltiness which soon appear as realities. Thus, cases have not been unfrequent where women, deserted by those in whom they

trusted, and sick of living, have accused themselves, and this perhaps sincerely though falsely, of the murder of infants whom they never bore, or who died naturally. By one, who was thus life-weary, was the whole scene described with the most touching minuteness—the wailing of the young child—its piteous look—its burial in a little grave under the matted and crisp spires at the foot of a pine. Yet no one had been buried there, nor had the mother aught to do with the child's death.

§ 1305. Then sometimes the same weariness of life seizes upon a false confession as a congenial method of suicide. Death is sought in a way which may best correspond to the then morbid condition of the brain; in a way which involves others, though innocently on their part, in the self-murder, and makes them strike the blow. "I fling myself, not into the river, nor into the abyss, but upon the scaffold." Thus Lord Clarendon tells us of a Frenchman, named Hubert, who was convicted and executed on his confession of having occasioned the great fire in London, "although," says that sagacious jurist and historian, "neither the judges nor any one present believed him guilty, but that he was a poor, distracted wretch, weary of life, and who chose to part with it in this way."(*f*)

§ 1306. Before a confession be acted upon, therefore, let these tests be applied. Let it be remembered, to sum up in the words of a great civilian, that "there sometimes lurks, under the shadow of an apparent tranquillity, an insanity, which impels men readily to accuse themselves of all kinds of iniquity. Some, deluded by their imaginations, suspect themselves of crimes which they have never committed. A melancholy temperament, the *tædium vitæ*, and an unaccountable propensity to their own destruction, urge some to the most false confessions; whilst they were extracted from others by the dread of torture, or the tedious misery of the dungeon."(*g*)

The last motive rarely exists among ourselves, but the first may be not infrequent. The first precaution is to have absolute proof of the *corpus delicti*. This, however, is not enough. There may be abundant proof that a crime was committed, and yet the confession may be false. We must exact proof that connects the supposed criminal with the actual crime. We must examine into his condition of mind, and see how far insanity, or remorse, or bravado, or weariness of life, or delusion, may have influenced him. When these tests are applied, we are ready to take the confession as impressed with its true significance. It thus becomes the most positive form of proof.(*h*)

(*f*) Continuation of Lord Clarendon's Memoirs, written by himself, p. 352.

(*g*) Hein. Ex. 18, § 6.

(*h*) "To guard against false confessions," says Jeremy Bentham, "the two following rules ought to be observed:—

"1. One is, that, to operate in the character of direct evidence, confession cannot be too particular. In respect of all material circumstances, it should be as particular, as, by dint of interrogation, it can be made to be. Why so? Because (supposing it false) the more particular it is, the more distinguishable facts it will exhibit, the truth of which (supposing them false) will be liable to be disproved by their incompatibility with any facts, the truth of which may have come to be established by other evidence. The greater the particularity required on the part of the confession, the greater is the care taken of the confessionalist—the greater the care taken to guard him against undue conviction, brought upon him by his own imbecility and imprudence.

"2. The other rule is, that, in respect of all material facts (especially the act which

§ 1307. 2d. *Nervous Tremor.*—The Countess of Somerset, when arrested on the charge of the murder of Sir Thomas Overbury, laughed off the possibility of guilt with that fascination which so eminently belonged to her. It was hard to believe that underneath that young and beautiful brow, so cruel and artful an assassination could have been planned. No alarm was shown, no cloud of manner by which the slightest trouble of conscience was betrayed. So she bore herself until she found she was to be taken to the Tower. There Sir Thomas Overbury, himself but a young man, and one whom she had frequently and kindly met, had just died in unspeakable torments. There she had sent, under the guise of kindness, the poisoned tarts which caused his death. One great terror grew over her—that she should be taken to his room—that she should have to pass lonely nights there, and in that bed. At last her nerves, wrought up to their highest dissimulation, snapped asunder. She sank prostrate and wretched to the ground, and then followed her confession.

From this nervous tremor arose the old habit of requiring supposed criminals to touch the corpse of the murdered man. With this was no doubt joined a superstition that the corpse would bleed when it felt the murderer's hand. But this was but collateral to the belief that in this way the conscience of the guilty party would be exposed to a test which might, in some cases at least, prove efficacious. It is true that when the criminal has time to nerve himself for the purpose, he is able, if he has much courage of manner, to bear himself calmly and innocently. This was the case with Major Strangways, in 1657, who, on being required to take the deceased by the hand and touch his wounds, did so with a demeanor undisturbed. It is true, also, that others, by a powerful effort of nervous imagination, may fling themselves into the character of an innocent person, in the same way that Mrs. Siddons could fling herself into the character of Queen Catharine, or Talma into that of Hamlet. "You looked as if you were really metamorphosed, and not merely trying to appear so." "I *made* myself believe that the audience was divested of all flesh—mere spirits, and I a spirit speaking to them," was Talma's reply.

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constitutes the physical part of the offence), it ought to comprehend a particular designation in respect of the circumstances of time and place. For what reason? For the reason already mentioned: to the end that, in the event of its proving false (a case not impossible, though in a high degree rare and improbable), facts may be found by which it may be proved to be so. 'I killed such a man' (says the confessionalist, mentioning him), 'on such a day, at such a place.' 'Impossible' (says the judge, speaking from other evidence), 'on that day neither you nor the deceased were at that place.'

"But time and place are both indefinitely divisible. To what degree of minuteness shall the division be endeavored to be carried for this purpose? A particular answer that shall suit all cases, cannot be given. The end in view, as above stated, must be considered, and compared with the particular circumstances of the case, in regard to either species of extension, ere the degree of particularity proper to be aimed at by the interrogatories can be marked out. Under the head of time, the English law, in the instrument of accusation, admits of no other latitude than what is included in the compass of a day. The nature of things did not, in this instance, render uniformity impossible; the parts into which time is divided are uniform and determinate. Place—relative space—is not equally obsequious; the house? yes; if the supposed scene of the supposed transaction be a house; the street? yes; if the scene were in a street; but a field, a road, a common, a forest, a lake, a sea, the ocean; any of these may have been the scene." (Bentham, *Rationale of Jud. Ev.* Book v. chap. vi. § 3.)

But this leap requires some little breadth of base from which to start. The mind cannot rise up to it suddenly. The murderer who might, if a due interval be given, nerve himself to the work, often collapses if suddenly brought in contact with the deceased. The old result is reversed; for in former times it was the dead man that gave sign: now it is the living. We have an instance of this in the latest American case where the process was tried. A man named Johnson, under trial for murder in New York, in 1824, was taken out of his cell to the hospital by the high constable, and required to touch the murdered body. He did so, but the touch broke the texture of the murderer's dissimulation. He fell into a nervous tremor, which resulted in a confession. This confession, when he recovered, he sought to retract; and his counsel endeavored to exclude it in court, on the ground that it had been improperly obtained. But the judges overruled the objection, without in any way objecting to the process.(*hh*)

§ 1308. William Peterson, a young man of only about nineteen, but of the most extraordinary self-control, was charged, in the Memphis District, Tennessee, in 1852, with the highway robbery and murder of Thomas Merriweather. No feature, in this very remarkable case, is more remarkable, than the mastery over his nervous system which had been obtained by this young but desperate criminal. An almost girlish delicacy and fairness of skin and features covered an iron energy of muscle and nerve that was able to brace itself against any expected attack. Yet even this power gave way. Closely resembling the murdered man—so closely as to produce mistakes between the two—was his brother, William Merriweather. The prisoner, not knowing he was suspected, was lying asleep in his bed near midnight. His chamber was suddenly entered by the officers charged with his arrest. He betrayed no sign, though the slight trembling of the eyelids showed that his sleep was feigned. "I will go with you readily," and he got up quietly to meet the charge. But suddenly his eyes fell on a figure which may well have recalled to him the dead man, for there, darkened in the background, stood William Merriweather, pale and corpse-like, in the exhaustion and excitement of his long search for, and final discovery of, his brother's murderer. It was as if the dead and living were confronted. Then, as in former cases, the living broke down. Peterson's composure could not stand the trial. The policy of his intended defence was that he did not know the deceased; but as he looked at the brother his "head dropped upon his breast, and he sighed deeply." A partial confession and a conviction followed.(*i*)

§ 1309. The following incident is given in Parton's Life of Burr. On a trial for murder, the prisoner was defended jointly by Colonel Burr and General Hamilton. "At first, the evidence against the prisoner seemed conclusive, and I think Burr himself thought him guilty. But as the trial proceeded, suspicions arose against the principal witness. Colonel Burr subjected him to a relentless cross-examination, and he became convinced that the guilt lay between the witness and the prisoner, with the balance of probability against the witness.

(*hh*) People *v.* Johnson, 2 Wheeler's C. C. 378.
(*i*) See this case reported, *ante*, § 1144.

"The man's appearance and bearing were most unprepossessing. Besides being remarkably ugly, he had the mean *down* look, which is associated with the timidity of guilt. Hamilton had addressed the jury with his usual fluent eloquence, confining his remarks to the vindication of the prisoner, without alluding to the probable guilt of the witness. The prosecuting attorney replied, and it was now Burr's province to say the last word for the prisoner. But the day had worn away, and the court took a recess till candlelight. This was extremely annoying to Colonel Burr, as he meditated enacting a little scene, to the success of which a strong light was indispensable. He was not to be balked, however. Through one of his satellites, of whom he always had several revolving around him, he caused an extra number of candles to be brought into the court-room, and to be so arranged as to throw a strong light upon a certain pillar, in full view of the jury, against which the suspected witness had leaned throughout the trial. The court reassembled, the man resumed his accustomed place, and Colonel Burr rose. With the clear conciseness of which he was master, he set forth the facts which bore against the man, and then, seizing two candelabras from the table, he held them up toward him, throwing a glare of light upon his face, and exclaimed:—

"'Behold the murderer, gentlemen!'

"Every eye was turned upon the wretch's ghastly countenance, which, to the excited multitude, seemed to wear the very expression of a convicted murderer. The man reeled, as though he had been struck; then shrunk away behind the crowd, and rushed from the room. The effect of this incident was decisive. Colonel Burr concluded his speech, the judge charged, the jury gave a verdict of acquittal, and the prisoner was free."

§ 1310. The longer the prior tension the more sudden and complete the crash. When Dr. Webster was brought by the police to the medical college, where for so many days he had with great external composure been covering up the proofs of his guilt, his whole system, at the recurrence of the scene under these new auspices, gave way. "He seemed," said one of the witnesses, "like a mad creature. When the water was put toward him he would snap at it with his teeth, and push it away with great violence, without drinking, as if it were offensive to him."(*ii*) "Dr. Webster appeared to be very much agitated," says another; "sweat very much, and the tears and sweat ran down his cheeks as fast as they could drop."(*j*) "The perspiration was so excessive as to wet through his clothing."(*k*)

§ 1311. Richard Weston was sub-keeper of the Tower at the time of the poisoning of Sir Thomas Overbury. He was the first person tried for that crime. When the bill of indictment was returned, as we learn from Mr. Amos' "Great Oyer," all eyes were turned to the bar, where the wretched prisoner was brought up. He was a man of about sixty years of age. His forehead was wrinkled with age, his hair sprinkled with gray. His countenance, though not wanting in a certain degree of comeliness, had a stern and grim expression, and was now distorted with terror. His face was deadly pale, his lips qui-

(*ii*) Bemis' Report of the Webster Case, p. 60.
(*j*) Ibid. 120, 121.
(*k*) Ibid. p. 193.

vered, and his knees tottered as he stood at the bar while the indictment was read. It charged him with having murdered Sir Thomas Overbury in the Tower of London by administering various poisons—rosalgar, white arsenic, and mercury sublimate—on four different occasions. The prisoner was then asked, in the usual form, whether he was guilty of the murder, yea, or no. The poor wretch, instead of answering became agitated, and in his distress screamed several times, "Lord have mercy on me, Lord have mercy on me." At length he stammered out, "Not guilty." But when asked how he would be tried, instead of answering in the usual form, "By God and my country," he exclaimed he referred himself to God—he would be tried by God alone. And though the Chief Justice spent an hour in persuading him to put himself upon his country, he could get no other answer out of him than that he referred himself to God.

§ 1312. The Earl of Essex was the last favorite of Queen Elizabeth. Young, brilliant, of remarkable fascination both in person and mind, he held on the queen's affections, hereditary claims of which his personal graces may well have reminded her. For—except the two Careys—he was her only male relative on her mother's side, and as she looked on his handsome person, and studied his ardent though inconsistent character—bold, rather than courageous—dashing, but inconsequent—chivalric in bearing, yet not always generous in heart—she could not but recognize the defects as well as the graces of her kinsmen of the Boleyn blood. Then, besides, his father had served her at the time when her faithful servants were few, and it was one of her principles ever to be true not only to those who had been true to her, but to their children. But even Elizabeth's constancy might be overstrained. To almost more than womanly weakness in domestic life, she added more than masculine severity in matters of state. She became piqued with Essex's waywardness to her personally, and permitted herself, upon his failure in his Irish campaigns, not only to rebuke but to degrade him. The favorite was stung to the quick, and rushed into a desperate scheme to forcibly change the administration. He was tried and sentenced to be executed. Then came with her the struggle. Whatever may have been her relations to him, she loved him still too affectionately, and had, by her indulgence, given too large a margin to his excesses, to permit her to consent to his death. That he should die she never intended. But with that singular and cruel waywardness by which her Tudor blood and her woman's caprice were alike shown, her plan seemed to have been to have humbled her favorite until she brought him to her feet as a devoted suppliant, once more to be fastened to her person, as one who first could give life, and then renew prosperity. To this plan one thing was needed on Essex's part. Elizabeth had given him a ring which he was to send to her whenever he was in straits, and which, she had given him her word, should bring back from her a free pardon. The death-warrant had issued, and she passionately waited for the ring. She recalled the warrant, to give more time, but no sign was made by Essex. The sentence of his peers hung over him—he asked not to have it remitted—and at last the queen let the axe fall.

§ 1313. Two years passed of eminent prosperity. The Spaniards were finally repulsed; the Irish subdued; a firm alliance was secured with France,

and England was placed at the head of the Protestant powers. Elizabeth had apparently deadened all recollections of Essex. But on the death-bed of the Countess of Nottingham, a scene took place which brought back the old love with all the additional power of remorse. It appeared that Essex had reserved the ring for his last extremity, and then had given it—to follow Hume's incomparable narrative—"to the Countess of Nottingham, whom he desired to hand it to the queen. The countess was prevailed on by her husband, the mortal enemy of Essex, not to execute the commission; and Elizabeth, who still expected that her favorite would make this last appeal to her tenderness, and who ascribed the neglect of it to his invincible obstinacy, was, after much delay and many internal combats, pushed by resentment and policy, to sign the warrant for his execution. The Countess of Nottingham falling into sickness, and affected with the near approach of death, was seized with remorse for her conduct; and having obtained a visit from the queen, she craved her pardon, and revealed to her the fatal secret. The queen, astonished with this incident, burst into a furious passion. She shook the dying countess in her bed; and crying to her *that God might pardon her, but she never could*, she broke from her, and thenceforth resigned herself over to the deepest and most incurable melancholy. She rejected all consolation. She even refused food and sustenance; and throwing herself on the floor, she remained sullen and immovable, feeding her thoughts on her afflictions, and declaring life and existence an insufferable burden to her. Few words she uttered, and they were all expressive of some inward grief which she cared not to reveal. But sighs and groans were the chief vent which she gave to her despondency, and which, though they discovered her sorrows, were never able to ease or assuage them. Ten days and nights she lay upon the carpet, leaning on cushions which her maids brought her; and her physicians could not persuade her to allow herself to be put to bed, much less to make trial of any remedies which they prescribed to her." And then came death.

§ 1314. 3d. *Morbid propensity to recur to scene and topic of guilt.*—There are certain abnormal states of the nervous organism in which the propensity to commit a desperate act is almost irresistible. There are few who have not felt this when standing on a tower or on the brink of a precipice. A strange curdling runs and quivers through the veins, an impulse to break this mystery of life, and desperately to face what stands beyond. There are few great criminals who have not borne witness to the same propensity. They are ever on the precipice-brink of discovery, and often comes this convulsive impulse, to throw themselves, blood-stained and confessing, into the chasm below. And even when this is not consummated, there is a strange fascination which makes them flit over the scene and topics. The impulse is to get as near to the edge as they can without toppling over.

§ 1315. This impulse, working in a mind of peculiar delicacy and culture, betrayed itself in Eugene Aram's case in a series of refined and oblique allusions to acts of guilt, such as that of which he had been the perpetrator. His mind hovered and quivered over the topic, assuming and expressing itself in varied fantastic shapes, often flitting apparently away, but floating again from the same spot, as would an exhalation from some hidden pernicious

mine. So showed the evidence on the trial, which is paraphrased, with extraordinary psychological delicacy, by Hood :—

The usher took six hasty strides,
As smit with sudden pain—
Six hasty strides beyond the place,
Then slowly back again;
And down he sat beside the lad,
And talked with him of Cain.

And long since then, of bloody men
Whose deeds tradition saves;
Of lonely folk, cut off unseen,
And hid in sudden graves;
Of horrid stabs in groves forlorn,
And murders done in caves!

And how the sprites of injured men
Shrieked upward from the sod—
And how the ghostly hand will point
To show the burial clod;
And unknown facts of guilty acts
Are seen in dreams from God!

He told how murderers walked the earth
Beneath the curse of Cain—
With crimson clouds before their eyes,
And flames about their brain;
For blood had left upon their souls
Its everlasting stain!

"And well," quoth he, "I know, for truth,
Their pangs must be extreme—
Wo, wo, unutterable wo—
Who spill life's sacred stream!
For why? Methought last night, I wrought
A murder in my dream!

"One that had never done me wrong,
A feeble man and old;
I led him to a lonely field,
The moon shone clear and cold;
Now here, said I, this man shall die,
And I shall have his gold!"

That very night, while gentle sleep
The urchin's eyelids kissed,
Two stern-face men set out from Lynn
Through the cold and heavy mist;
And Eugene Aram walked between,
With gyves upon his wrists.

§ 1316. Among coarser minds the same propensity exhibits itself in the affectation of jocularity or rude jest. Thus Robinson, who was tried for the murder of Suydam, whose body was found under the front basement floor of Robinson's house, remarked two days before the discovery, to a carpenter who found him, with a hoe, dragging the earth in the *back* basement, as if he had been getting out sand for the masons, "Here 's where I was going to poke Suydam under;" adding that "he had not time to do it." This was tossed off as a joke, and may perhaps be regarded as an artifice to divert attention. But it arose more probably from a morbid propensity impelling the murderer to dwell in language on the topic which was to him at once so perilous and so engrossing.

§ 1317. The same peculiarity was observable in Nancy Farrer's case. Whether or no that remarkable woman was technically responsible it is not proposed now to consider. Conceding, however, that she was insane (and to this effect went the last verdict taken in her case), she had a vein of shrewd

cunning running through her which enabled her to shelter herself from suspicion during two successive groups of poisonings. There were the same precautions as taken by other criminals to deaden surprise by intimations of the ill health of her intended victims—the same assertions of constitutional tendency to these particular symptoms. And with this there was the same subsequent hovering of the mind over the scene of guilt. Thus, after the death of "Johnny," one of the children whom she was employed to nurse, and whom she had poisoned, she was found "excited and anxious if any two were talking, to get close to them, and to wish to know what they were saying." And then came one of those strange convulsive confessions such as that in Robinson's case—confessions in which the truth is thrown out as if it were too hot for the heart to hold, and yet at the same time put forth as if it were a joke, so as to relieve the mind of him that speaks from the solitude of this awful secret, and yet not too boldly proclaim guilt. Nancy told a witness, after the death of one of the children, "how lucky she was with sick folks; they all died in her hands." The witness saying, "May be you killed them;" she said, "May be I did." "She seemed to be joking—seemed to be smiling —seemed to be very careless about it."(*l*)

§ 1318. 4th. *Permanent mental wretchedness.*—We may pass the case of a tender conscience, which commits a heinous act inconsiderately, or under force of strong temptation, and then is stung by bitter and enduring remorse. These cases may be said to be exceptional. We may be told, and perhaps truly, that the majority of great crimes are committed by men whose hearts are so rigid and callous as to give no sign of a troubled conscience. The sun, on the day after the crime, shines upon a face just as hard as that on which he shone the day before. Blood cannot stain a skin already black with guilt. No man is suddenly a great criminal. He becomes so, it is argued, by long and slow processes, during which all the impressible elements of the heart are hardened, and solidified.

Now this may be all true, and yet common observation tells us that there are certain types of character among which *a priori* we are accustomed to look for the perpetrator of some great crime. And this rigidity of heart is one of these. This, in itself, may give a faint though definite psychological presumption. But it is questionable whether there are any characters in which this type is permanent:—

> "The deepest ice that ever froze
> Can only over the surface close—
> The living stream lies quick below,
> And flows, and cannot cease to flow."

§ 1319. "Something was wrong with him. My suspicion was aroused by his troubled sleep." This is the frequent answer to the question as to what put the witness first on the watch. Shakspeare makes Lady Macbeth's great secret vent itself in this way, and to attract very much the same observation from by-standers. And this, in fact, is but in obedience to one of those divine sanctions by which crime is made in part its own avenger. "There are violent and convulsive movements of self-reproach," says Dr. McCosh, "which will

(*l*) Farrer *v.* State, 2 Ohio St. R. (N. S.) 64.

at times break in upon the self-satisfaction of the most complacent. Man's peace is in this respect like the sultry heat of a summer's day; it is close and disagreeable at the time, and ever liable to be broken in upon by the thunders and tempests of divine indignation. Even in the case of those who are anxious to keep their attention turned away as much as possible from themselves, and as little as possible upon the state of their hearts, there will occur intervals unfilled up between the scenes that express them, and on these occasions there will be recollections called up which occasion the keenest misery. It may be after a day of selfish business, or an evening of sinful excitement, that such unwelcome visitations are paid to them to disturb their rest, while others have buried their cares in the forgetfulness of sleep. Or it may be, in the time of disease, or in the prospect of death, that the ghosts of deeds committed long ago spring up as from the grave. These gloomy fears proceeding from conscious guilt, always rise up like a ghostly apparition, never in the sunshine of prosperity, but always in the gloom of adversity, to render the darkness more horrific.

"In other cases, the troubling of the conscience is produced, we can scarcely tell how, by the state of the nervous system, or by an accidental event, recalling the deed committed to oblivion, or by a sudden flashing of some willingly forgotten scene upon the mind, revealing, like the lightning's glare at night, dreadful depths of darkness. In regard to such phenomena we may know what are the general laws; though it may be as difficult to explain the specific causes, as it is to tell the immediate cause of the raising this gust of wind, or of this cloudy atmosphere, of both of which we may know perfectly what are the general means of their production."

§ 1320. Extraneous circumstances may produce this involuntary remorse. The culprit may form around him his own atmosphere, which will impart for a while its tinge to his conduct. He may, by a powerful effort of imagination, create for himself fictitious wrongs and fictitious justification. Suddenly, however, comes a rude touch and dissolves the whole fabric. Heretofore he believed himself a hero, or an instrument of inexorable fate. Now he sees himself a murderer, cruel and loathsome, and a spasmodic cry of agony escapes his lips, or insanity, or suicide, or, what may be worse than either, a dull and incurable despair, closes his life.

The independent existence of this latent consciousness of guilt is shown by the fact that it is called into action by events over which the will has no control. It is not the creation of a diseased brain. It is not the result of a morbid self-introspection. Were it either of these, the will could recall it, or perhaps again banish it. But it is produced arbitrarily and convulsively by circumstances with which the will has nothing to do. The sudden sight of a ring belonging to one whom Queen Elizabeth had loved but sacrificed, threw, as we have seen, that most proud and self-poised of women into an agony of demonstrative remorse. The Countess of Somerset, who had borne herself with such consummate self-possession and tact during the prior periods of the prosecution, screamed with terror at the prospect of being taken to sleep in the room of Sir Thomas Overbury, whom she had poisoned. Nor are these cases unfamiliar to our every-day observation. A little locket, a lock of hair,

a faded rose, a ribbon, taken from the person of one who has been loved and lost, will recall a passionate torrent of long buried grief. We may have been a moment before, calm or buoyant. If we had been able to exercise our own will, we would have banished these memories finally. But now, without our agency, they burst upon us and overwhelm us.

§ 1321. There is a feature, however, in respect to a consciousness of guilt thus produced, that distinguishes it from a suddenly recalled grief. The latter reproduces merely a past memory, the former a present reality. The recollection of the latter is, I WAS IN TIME PAST SO and so. The discovery with the former is: I AM NOW A CRIMINAL; I DID THAT DEED OF GUILT. Of this discovery there are but two or three consequences. One is confession, and the consequent relief from a comparatively unburdened conscience. Another is a continued condition of misery. A third is the stupor or hardness which is so common an attribute of old criminals. Either of these is a positive psychical condition, as much the subject of ascertainment as are the types or phases of the physical condition.

§ 1322. 5th. *Animosity among confederates.*—"He knows my secret, and I must dispatch him." "Because he fears my betraying him, he will try to get rid of me." One of these feelings, and perhaps both, lurk in the breast of the confederates in almost every joint secret crime. How dangerous is the possession of a political secret in a despotic government, is evidenced to us in the many assassinations by which fell the favorites of the French and English monarchs of the seventeenth century.

But another and more subtle impulse sometimes intervenes to work out the same result. It seems almost an invariable psychological rule that passionate love, producing crime, is followed by passionate hatred. Take, for instance, the reign of James I., and go to Lord Coke's great Oyer, which has been already more than once referred to. Whether or no the Earl of Somerset was really guilty of the consummated poisoning of Sir Thomas Overbury, may perhaps be doubted. It is clear, however, that his countess caused poison to be sent to the deceased to remove or punish his opposition to her marriage, and that her husband was at least privy to her designs. It is clear, also, that he must have known, if not participated in the nefarious plot by which his wife, as a preliminary to her marriage with himself, was divorced from the Earl of Essex. For by fraud, if not by bloodshed, as all England knew, was the first marriage dissolved and the second secured. To make this second marriage happy many outward circumstances conspired. The earl and his countess were each remarkable for their beauty and graces. They had wealth and station; they loved each other with a love which had torn asunder the most sacred barriers, and had conquered almost unsurmountable difficulties; but when they at last met, they found an invisible obstacle between them which they could not overcome. This was the consciousness of a common crime. Their love was followed by hatred so intense, and by quarrels so bitter, that quiet was only secured by separation. For years they lived in the same house with hearts so hostile, that they instinctively shrank from each other when they met. Aversion became divorce.

§ 1323. Poets have often dwelt upon this property of crime, but by no one

has this been done with greater energy than by Robert Browning. Ottima, an Italian woman, pursues with the utmost passion an adulterous intercourse with a German, Sebald. Together they murder her husband. Then comes for a moment the passionate voluptuousness of guilty love in its full. But while they are still in the flush of delight at the removal of the obstacle to their undisturbed enjoyment, a country girl passes under the window singing a home song which brings them back to the reality of the crime they have committed. It is the ordinary reaction produced on a morbid state of the brain by a single healthy thought. Then fierce love is followed by fierce hatred, and death by death.(*m*)

§ 1324. Catharine of Medicis, on the death of Francis II., had still three surviving sons, Charles IX., who succeeded to the crown; Henry, Duke of Anjou, afterwards Henry III.; and Francis, Duke of Alençon. Over each she had acquired an ascendency which would give her supreme power could she make the crown autocratic. There was in the way of this, however, an insurmountable difficulty. The Huguenots were a co-ordinate power in the state, and their religion and their political principles alike made them intractable. Coligny was their leader, and besides this possessed military skill, popular influence, and inflexible integrity. Assassination was to Catharine the natural remedy, and to this she obtained the ready support of the chief of the Catholic party, the Duke of Guise, and then the reluctant assent of Charles IX. The blow was struck; Coligny murdered; and forty thousand Huguenots in one night destroyed.

§ 1325. Then came the reaction, and prominent in this was the disruption between the queen, her sons, and her accomplices. To exclude Henry of Navarre from the succession was one of the chief points in the confederacy. yet eight days after the massacre, Charles IX., according to Ranke, was obliged to summon Henry to him in the night to quiet the agonies by which he was tortured. The young king was filled with dread at a wild tumult of confused voices, among which were distant shrieks and howlings, mingled with the indistinguishable raging of a furious multitude, and with groans and curses, as on the day of the massacre. So vivid was his conviction of the reality of these sounds, that he sent messengers into the city to know if a fresh tumult had broken out. But the sounds were mere delusions, which continued to torment Charles during the short remainder of his life. Thus he died, alternately cursing his mother, as the cause of his misery, and turning to her submissively, in awe of her overweening power.

§ 1326. So it was with her two remaining sons. Francis, Duke of Alençon, flew into open rebellion, making the massacres of which he was one of the joint agents the plea. Henry III., it is true, when he succeeded to the crown, bowing before the queen's superior genius, conceded to her for a while the supremacy. But this same restlessness under the joint load of a common guilt, this almost anguish to throw it off on her who produced it, soon severed the son from the mother. Then came a scene in the castle of Blois, where the

(*m*) "Pippa Passes," by Robert Browning. Mr. Hawthorne's last work, the "Marble Faun," hinges on the same topic.

Duke of Guise, almost at the foot of the throne, was obliged to defend himself by teeth and nails like a wild beast, for he had not time to draw his sword. He had been invited there by the king, as one of the counsel of State, and when there was thus massacred by his old co-conspirator. And underneath, on her dying bed, lay Catharine of Medicis, the wild tumult above giving her proof of this final dissolution of the strange partnership she had formed for the Huguenot massacre. The community of guilt had to them been indeed fatal. It had been followed by the bitterest recriminations and imprecations. It had been followed by massacres and cross-massacres. Charles IX. did not hesitate to ascribe to poison administered by his mother's hand, the disease which tore his vitals; and, though this may be discredited, she permitted his death-bed to be neglected, and his funeral deserted, to increase the welcome to her more favored son Henry. The Duke of Guise was massacred by Henry; Henry a short time after by an avenger of the Duke of Guise. Catharine, after having successively deserted those for whom she had risked so much, died at last deserted by each in turn.

Such are some of the ways in which psychology may be used in the detection of guilt. It shows how a crime betrays itself before its commission, in preparations, in intimations, in overacting; at the time of its commission, in incoherence; after its commission, in convulsive confessions, in remorse, in involuntarily haunting the guilty topic, and in disruption between confederates. The inquiry is an important one in legal psychology, for it not only aids in the enforcement of the law, but it leads us to those supreme sanctions on which all law rests. When we visit a city, and see a series of police officers engaged in ferreting out crime; when we see, in connection with this, courts in which the criminal is tried, and the penalties to which crime is subjected, we draw from these facts the inference of a government whose office it is to prevent wrong. In proportion to the perfection in which this police system is carried out, do our conceptions of the wisdom, the power, and the earnestness of the supreme authority increase. So it is with the agencies we have been examining. Wherever guilt goes, they go. They dog it in all its stages. Its most secret haunts are not closed to them. Its weakness as well as its wisdom—its triumphs and its remorse—they hear and record. Nor is their function that of detection alone. They have a strange power of compelling guilt to disclose itself. They show us that whatever doubts there may be as to the *origin* of evil, there is no doubt as to its *close*. For they show it to be pursued by a most subtle and powerful penal machinery, which leaves it not until in one sense or another it is judicially punished.

There is one difference, however, between the police of the courts, and that of the conscience. The former, in order to scent out the crime, often assumes the garb of the criminal. Vidocq goes into the thieves' den to discover the thieves' secrets. He recalls memories of past crime, so as to induce a similar communicativeness in his associates; he gloats enticingly over the pleasures of guilt; he incites to fresh adventures by which the criminal may be entrapped. But it is not so with the Angels of the conscience. They warn, they appeal, they implore, and this in tones the tenderest and holiest. Their garb is that

of light, telling from whence they come. While they announce beforehand who they are, and use the most touching entreaties to prevent wrong, they declare it will be theirs afterwards to avenge that wrong if done;—while they leave no secret as to their awful mission, they gently plead by all the powers that persuasion can give, that vengeance may not be theirs to inflict. The memories they recall are not of early guilt, but of early innocence—of periods when no mad or polluted comrade stood by, inciting to ruin, but some tender friend or relative, uttering counsels of love. They paint not the pleasures of guilt, but its misery, and they point to scenes of peace to which guilt cannot reach. It is not theirs to avenge until their final entreaties are exhausted; and when at last they hurry away to give their last report, he whose guilt is disclosed cannot but say: "This, your office of exposure as well as of restraint I knew beforehand. You told me this—you told me that my sin, if unchecked, would find itself out."

It is here that the presumptions from this agency rise a step higher than those from an earthly police. The latter tells of a government, comprehensive, sagacious, and just, so far as its general object of punishing crime is concerned, but of a government which at the same time deals in punishment alone, and that by instruments which are often as polluted as the evils they are to correct. The former tells of a government, austere it is true, yet very tender; moving to holiness through holiness; permeating not merely the outer life, but the secrets of the heart; everywhere warning and entreating, while everywhere judging; making punishment certain and terrible, and yet so working it up into the consequences of the criminal's voluntary act as to render it his own choice. So it is that while a police of mere detection and exposure argues an executive of mere power, a police of love argues an executive of mercy; a police that is omnipresent, an executive that is omnipresent; a police that for a time entreats, warns and dissuades, an executive that recognizes a temporary probation; a police that ultimately and irrevocably avenges, an executive that after a free probation judges definitely and finally. It is here we have brought before us the elements of that Christian Providence which the courts invoke as the foundation of public justice. In crime itself, therefore, we find the proof of that chief magistrate who avenges crime.

So it is that while the court-house derives its sanctions from this Supreme Power, it contributes to the proof of the existence of this Power an independent share of evidence. No witness can be sworn until he declares his belief in a future state of rewards and punishments; no trial can take place without strengthening the evidence on which this state rests. Human justice falls back on divine for its support; divine justice appeals to human as its witness. The penal precepts of the common law professedly find their basis in the dictates of an enlightened Christian conscience; the divine sanction of this conscience is nowhere so fully shown as in the course of a trial at common law. The present discussion will not be without its value, if by illustrating these truths, it shows how close is the connection between the divine law and the human; and how the science of jurisprudence, while it draws down its strength from heaven to earth, may still, if rightly studied, lead its votaries from earth to heaven.

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