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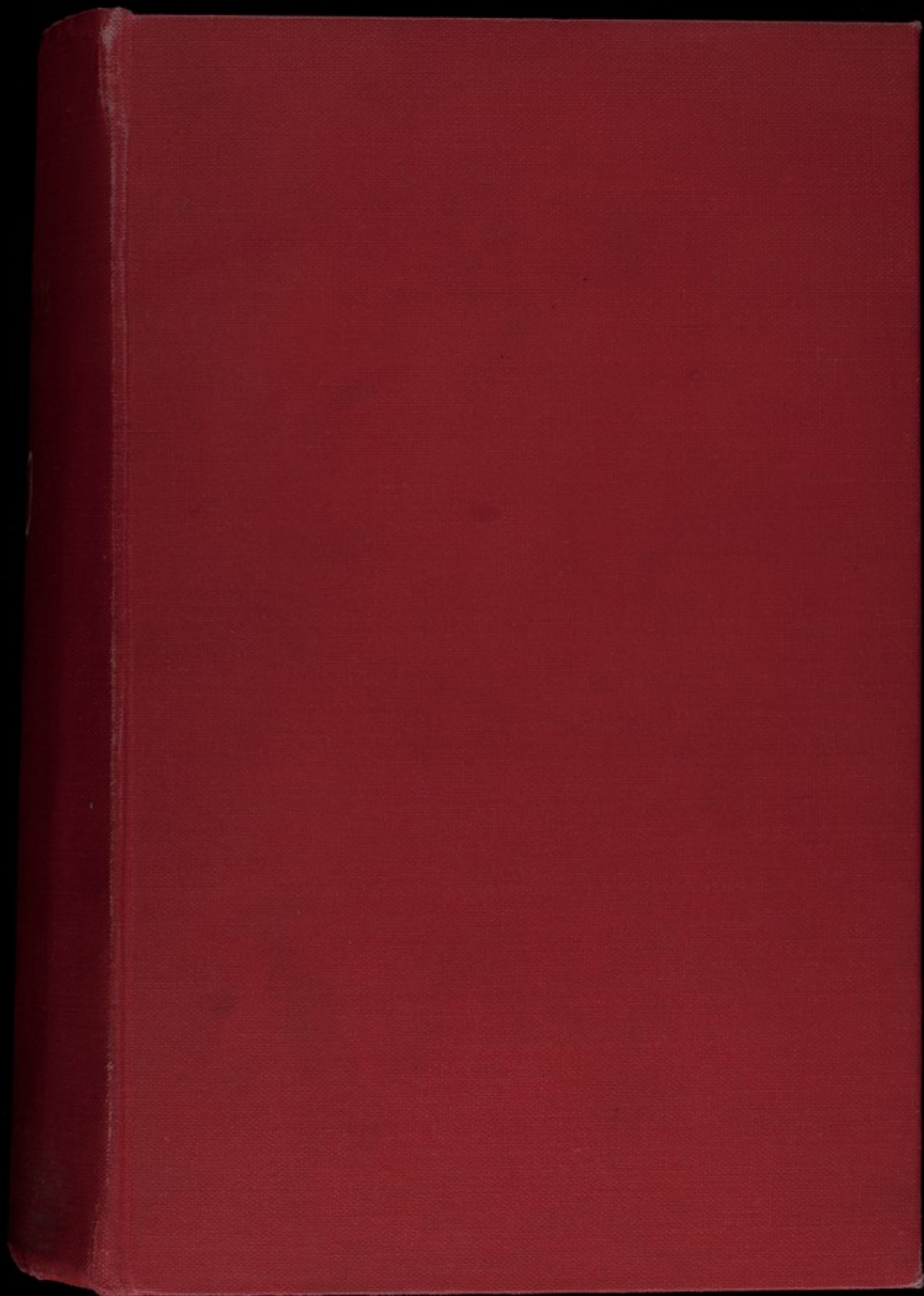
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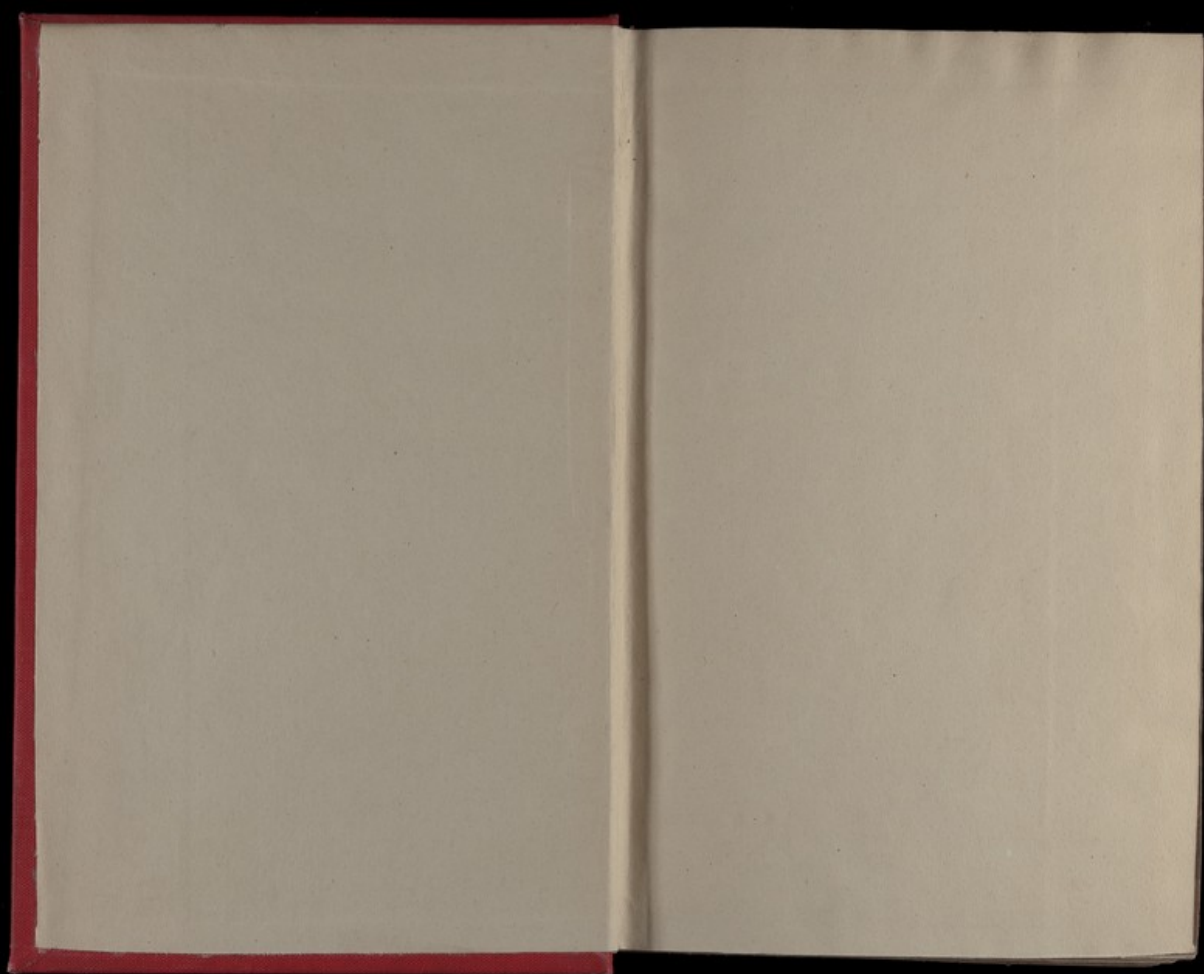
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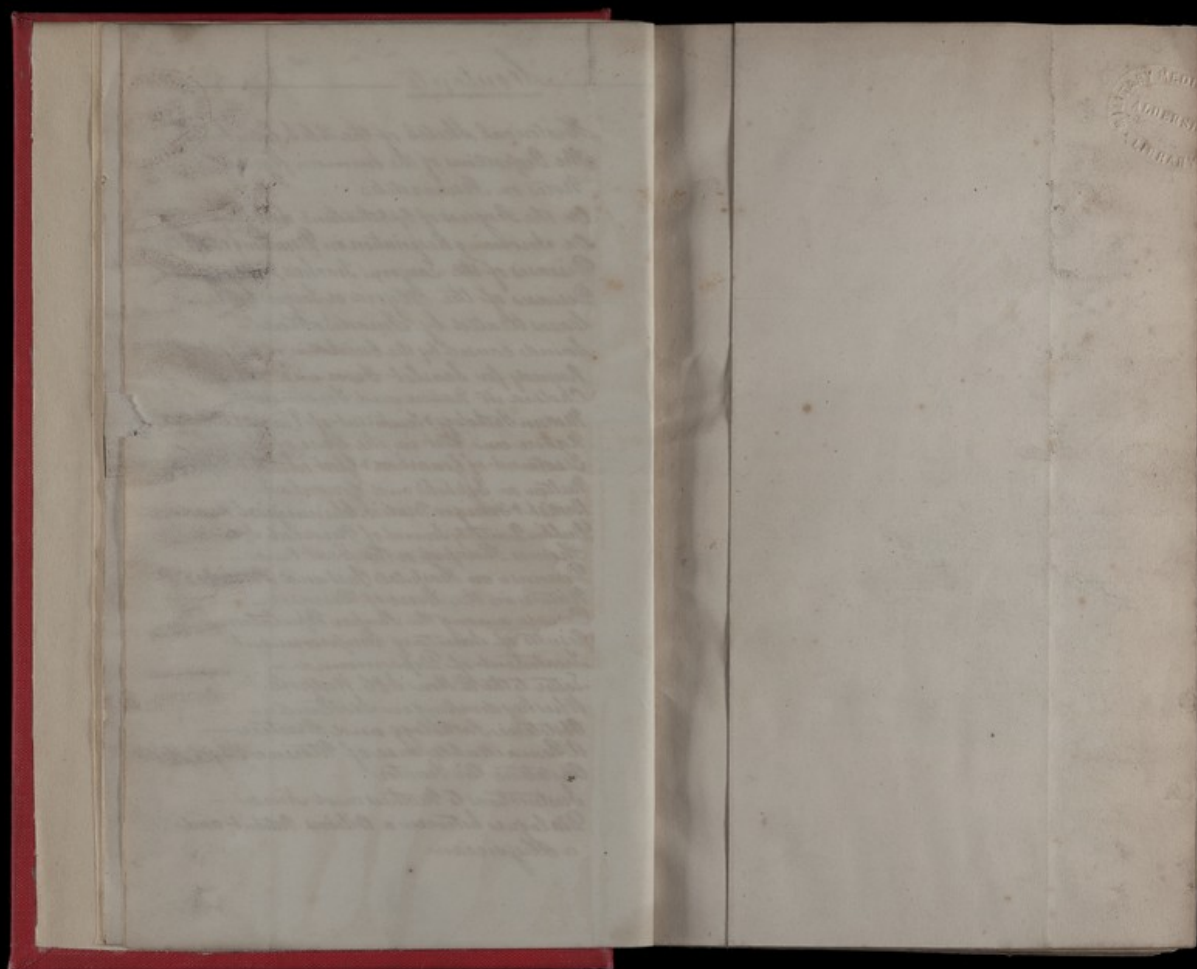
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OLD SURGEONS HALL, OF 1697.
as seen from the North

THE MEDICAL OFFICE
OF THE
SURGEONS
GENERAL
HOSPITAL

VERSASIONE

ENTS.

OX.



OLD SURGEONS' HALL, OF 1627.
as seen from the North

HISTORICAL SKETCH

The History of
THE ROYAL COLLEGE OF SURGEONS
OF EDINBURGH;

Office of
BY

AN ADDRESS DELIVERED ON 19th JANUARY 1860, AT A CONVERSAZIONE
IN THE HALL OF THE COLLEGE;

WITH NOTES AND DOCUMENTS.

from
J. H. Gairdner

BY
JOHN GAIRDNER, M.D.,
FELLOW, AND FORMERLY PRESIDENT OF THE COLLEGE.



EDINBURGH: SUTHERLAND AND KNOX.
LONDON: SIMPKIN, MARSHALL, AND CO.

MDCCCLX.



HISTORICAL SKETCH

OF THE ROYAL COLLEGE OF SURGEONS OF EDINBURGH;

Officers & Members
BEING

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HISTORICAL SKETCH.

" There is a history in all men's lives,
Figuring the nature of the times decas'd;
The which observ'd, a man may prophesy
With a near aim, of the main chance of things
As yet not come to life; which, in their seeds
And weak beginnings, lie intrested."

King Henry IV., Part II., Act III., Scene 2d.

MR PRESIDENT AND GENTLEMEN,—The Royal College of Surgeons of Edinburgh, in its commencement, was, like the University, simply a civic institution, and, like it also, was subordinate to the local authorities of our Scottish metropolis, from which it derived its original powers, and in the municipal council of which it was represented by its president, or, as he was termed, its deacon, till a period quite recent. By a series of changes, which I will endeavour to explain to you, it has become an institution of national significance,—its powers and its usefulness now extending to the wide area of the British dominions.

The word *Incorporation* is in the worst odour with many, suggesting at once the celebrated lines of Cowper in regard to chartered boroughs. But neither Cowper nor any one would include in one category of indiscriminate condemnation all incorporations in law, physic, divinity, commerce, education, and everything else. Our chartered Colleges, Faculties, Universities, and Associations, must stand or fall, each on its own merits. It is *exclusiveness* in trade, or in teaching or practising the arts and professions which has caused all the odium, and which, in our times at least, alone deserves the condemnation of all of us.

But let us place ourselves in imagination at the beginning of the sixteenth century, and endeavour to realize the state of things which then existed. Scotland was in a state of anarchy. Its barons,

more powerful than its kings, ruled despotically, each in his own circle, entrenched within his stronghold. The people, subject to cruel oppression, were unprotected by the law. The possession of the sovereign's person was often the subject of bloody strife between bodies of armed ruffians. The castles of Craig and Merchiston, situate within less than two miles of the spot from which I have the honour to address you, have, besides walls of extraordinary thickness, secret apartments entering from chimneys,—hiding-places to be resorted to when the owners were beset by a superior force. Such a fact, patent to our own senses, bears eloquent testimony to the reality of a state of things, which, happily for us, we know only through the records of the past.

Such were the circumstances in which chartered boroughs and their dependent incorporations sprang up in Scotland. Walls, ditches, and vigilant watching and warding, were things not of choice, but of indispensable requirement for the protection of peaceful industry in its rude commencement. Those who withheld their contributions of money, of labour, and of personal peril, for a purpose vitally essential to all, could not be permitted to claim protection at the hands of those who contributed. Exclusive monopoly, now so justly deprecated, was then the necessary means of emerging from barbarism.

Our first charter¹ is dated the 1st July 1505, eight years prior to the calamity which befell James IV. and his army at Flodden. It is termed a seal of cause by the Town Council, and was confirmed in the following year by the royal authority. From the terms in which it is expressed, it would appear that the "surregeanis and barbouris" had, prior to its reception, procured some recognised status in the place. Before giving you some specimens of this document, in which the interests of science, religion, and astrology are strangely blended, it may be well to remind you that Vesalius and Fallopius, those early fathers of anatomy, had not then earned their imperishable fame. Vesalius, indeed, was not born till 1514. The Emperor Charles V. was little more than five years old; that same emperor, who, many years after, called a consultation of divines at Salamanca to determine if it were consistent with conscience to dissect a human body for the purposes of science.² Bearing these circumstances in mind, let us look into this very curious document.

¹ "Royal Grants, etc., relative to the Constitution and Privileges of the Royal College of Surgeons of Edinburgh," p. 1.

² Hutchinson's "Biographia Medica," vol. ii., p. 472.

"Thatt quhair we beleve itt is weill knawin till all your wisdomes quhow thatt we uphald ane altar situat within your college kirk of Sanct Geill in the honour of God and Sanct Mongow our patrone and hes na importance to uphald the samyn but oure sober oulklike penny and upsettis quhilk ar small in effect till sustene and uphald oure said altar in all necessar thingis convenient thairto And because we ar and ever was of gude mynde till do this gude toune all the steid plesour and service that we can or may baith in walking and wairding stenting and bering of all uther portabill chairges within this burgh at all tymes as uther nichtbouris and craftis dois within the samyn We desyre at your Lordships and wisdomes till geve and grant to ws and oure successouris thir reulis statutis and privilegis vnder writtin"—"ITEM thatt na maner of persoun occupie nor use any poyntis of oure saidis craftis of Surregerie or barbour craft within this burgh bott gif he be first frieman and burges of the samyn and thatt he be worthy and expert in all the poyntis belangand the saidis craftis deligentlie and avysitlie examinit and admittit be the maisteris of the said craft for the honorabill seruyng of oure Soverane Lord his liegis and nychtbouris of this burgh And als That everie man that is to be maid frieman and maister amangis ws be examit and previt in thir poyntis following THATT IS TO SAY That he know anatomea nature and complexioun of every member In manis bodie And in lykewayes he know all the vaynis of the samyn thatt he may mak flewbothomea in dew tyme And als thatt he know in quhilk member the signe hes domination for the tyme for every man aucht to know the nature and substance of every thing thatt he wirkis or ellis he is negligent And that we may have anis in the ycir ane condampnit man efter he be deid to mak antomea of quhairthrow we may haif experience Ilk ane to instruct uthers And we sall do sufrage for the soule."

It appears from this that the difficulty which perplexed Charles V. and his divines long after, had been solved well and wisely by us and our municipal authorities in the middle of the year 1505. Perhaps you may like to be told what amount of preliminary instruction was then esteemed necessary for entering on the study of the profession. It is as follows:—

"ITEM That na maisteris of the said craft sall tak ane prenteis or feit man in tyme cuning to use the surregeane craft without he can baith wryte and reid And the said maister of any of the saidis craftis that takis anie prenteis sall pay at his entres to the reparatioun of the said alter twenty schillingis."

But the most important provision yet remains to be explained. Only listen to the following words of wisdom:—"And that na persoun man nor woman within this burgh mak nor sell ony aquavite within the samyn Except the saidis maisteris brether and friemen of the saidis craftis under the paine of escheit of the samyn but favouris."

I fear that we have lost for ever this invaluable privilege. But in this I may be wrong. There are enlightened men who hold that *aqua vita* is physic, and ought to be under the regulation of the profession to which we belong. Our chemistry would ensure a superior article, and our medical knowledge would qualify us to superintend its application. Let me solicit your concurrence in an application to Parliament to restore our ancient privilege.

But to be serious. We must recollect that these ancestors of ours had no pioneers to prepare the way before them, and we should therefore look on this very early movement, not with a proud sense of superiority, but with a respect akin to that with which we trace the risings of our own Forth, as it bursts, in apparent insignificance, from the rugged and remote solitudes of Rob Roy's country. Their exclusiveness I have shown to be the necessary result of the great law of self-defence; and, as to their ignorance, we shall do well to look that our own is not greater when compared with the great advantages we have over them.

I am no antiquary, and it has therefore been of no small consequence to me, in those investigations in which I have been engaged, that I have had the advantage of intercourse with those who have solid claims to that character. My thanks are particularly due to Mr W. Fraser, of the Register House, for deciphering some of our own earliest records, to me nearly illegible; and to Mr David Laing, of the Signet Library, for some very valuable suggestions. I must also express my thanks to Mr James Laurie, conjunct City-Clerk, for the liberality with which he made the city records accessible to me.

If there was little science among us, in the primitive period of our corporate existence, there was also but little of that pride of science which is generally found to be its bane. As in other departments of knowledge, so also in ours, those who affected to be learned were the worshippers of *authority*, not of science, for more than a hundred and fifty years after we were constituted. In our own more immediate department, surgery, we had the advantage of being brought into close contact, whether we chose or not, with the immutable

laws of Nature; and, in her presence, were taught the virtue of humility. In every age wounds required to be stitched and dressed, bleeding to be arrested, fractures and dislocations to be adjusted, teeth to be extracted, blood to be drawn, injured members to be severed. Those who could do these and the like things expertly, might justly claim to be one of the most useful of the *crafts*, as they were then termed, in a walled city; and we claimed to be nothing more or better. In corners of Scotland some of these things have been done in our own time by blacksmiths and gardeners, as they then were also by barbers. Hence arose an alliance, which, however unsuitable it may appear to us in the nineteenth century, was universal among the great cities of Europe little more than two centuries ago. That it should have continued so long as it did is the more surprising, because, here at least, some of the surgeons held high offices about the court, and some belonged to families of high consideration in the ancient kingdom of Scotland.¹ Other professions, however, present, in former times, not less striking incongruities. Prior to the Reformation, divines were often notaries public, as John Knox was before he became a Protestant; the words clergyman and clerk are identical *historically* as well as *etymologically*; the Court of Session, at its first institution in 1532, contained a moiety of ecclesiastical judges, who performed their peculiar operations less scientifically and less honestly than the barber-surgeons did their tooth-pullings. In Protestant times, David Chalmers, a judge of our supreme civil court, solicited and obtained, in 1566, the office of town-clerk of Edinburgh, with its emoluments.² Robert Pont, parish minister of St Cuthbert's, received from the Regent Morton, in 1572, the office of a judge of the Court of Session, and retained both offices, with the consent of the General Assembly, till 1584.³ Many more instances might be easily produced, but these must suffice to show you how differently such combinations of functions were then regarded.

There are no minutes of our proceedings in existence for the first seventy-six years; and, for the space of a century more, the handwriting is far from being easily legible. But by the able assistance of my friend Mr Fraser, I have been enabled to glean a few facts which occurred during this period.⁴ I find that by 1589, a practice had begun of admitting barbers, at a lower rate of entry, not to the

¹ See Note 4, p. 11, and Appendix A.

² Records of Town Council, 5th April 1566.

³ "Historical Account of the Senators of the College of Justice," 1832, p. 151.

⁴ See Appendix B.

full freedom of the incorporation, but simply to the right of practising as barbers within the burgh; and that those so admitted were specially interdicted from the practice of any "point of chirurgie under pain of tinsell of their fredome;" they were to "do their dowie when the brethren pleisses to require them thereto," and were to have "na signe of chirurgie in their bughts or houses, oppenlie or privatlie, sic as pigs [crockery], buistis, or chirurgane caiss, or box pertaining to the chirurganis." The mere barber had no deliberative voice. He was free of his own trade, but not a freeman of the incorporation; and it was only necessary for those who were full freemen to give up the inferior occupation, in order to accomplish what was accomplished about seventy years after,—the practical, though not then legal, separation of two pursuits, which, even towards the end of the sixteenth century, had begun to be regarded as incompatible.¹

In the first century and half of our existence, there were no important changes in our corporate rights. We were the sole teachers and almost the sole practitioners in this city, of what was then known of the healing art. The visit of Jerome Cardan, in 1552, for the cure of the brother of Arran, the Regent, was an exceptional thing; and there were probably other exceptions, now forgotten. But during this period our profession, like every other, was benefited by the gradual progress of literature and science. The discovery by Harvey, in the reign of Charles I., of the true course of the circulation of the blood, gave, for the first time, a scientific basis both to medicine and to surgery. The laws were better administered, especially when enforced by the iron will and stern impartiality of the Protector; and men of peaceful pursuits, more secure against violence, were less tolerant of exclusive privileges, which were plainly less necessary, and therefore less defensible. Ours were invaded by two descriptions of practitioners, unincorporated physicians and unincorporated apothecaries. The physicians sought to erect themselves into a college, not merely for Edinburgh, but for all Scotland, by means of a patent to which Cromwell was supposed to be favourable, and which contained the following clause:—"Forasmuch as the science of physick doth comprehend, include, and containe in it

¹ A painful occurrence took place in 1600. Robert Auchmowtie, one of the Incorporation of Surgeons, was capitally convicted on the 10th June, and beheaded at "the mercat croce" that year for killing James Vanehope in single combat at St Leonart's Craigs on the 20th April preceding. King James interfered in the trial against the prisoner, avowedly at the instigation of the friends of Vanehope. "Pitcairn's Criminal Trials," Vol. II. p. 112.

the knowledge of chirurgery, being a special part of the same and member thereof." They were also to have had the power of examining and licensing apothecaries, of visiting the drug-shops, and of enforcing their authority by penal clauses. The projectors of all this held for the most part only foreign degrees; for there were then few Scotch and no Edinburgh degrees in medicine.

We were in great alarm. The patent lay at Cromwell's council board, ready for his signature. But we remembered our Scotch Thistle and its time-honoured motto. The apothecaries, who had been so naughty as to meddle with our scalpels,² immediately threw them down; and, under our patronage, received in 1657 a civic status in alliance with us, which blended their interests with ours as far as the Town Council had it in its power to do so,³ and which was sanctioned by the Scotch Parliament thirteen years after.⁴ The Lord Provost (Sir Andrew Ramsay, Knight), as in duty bound, went to London to enlighten the Council of State.⁵ Old Noll was a shrewd old fellow, and had not committed himself. He had read his Bible, and knew what the wise king of Israel had said of him "who is first in his own cause,"—that he "*seemeth just*," but that "*his neighbour cometh and searcheth him*." The plot was given to the winds, as many similar plots have since been, and as more may yet be, if more should in future arise.⁶

The restored dynasty might possibly have proved more favour-

¹ "Statutes, etc., of the Royal College of Physicians of Edinburgh," 1852. Preface, p. 6. ² "Royal Grants, etc.," p. 27-31.

³ "Royal Grants, etc." p. 32, 39, and 48. The Town Council had no power to admit mere apothecaries to be members of the incorporation of surgeons, but they constituted what was termed a "Brotherhood of apothecaries and chirurgion-apothecaries," and admitted to that body freemen who had passed an examination. See Town Council Records, 1st April 1659 and 18th March 1660. The Act by which the "brotherhood" was constituted [25th February 1657] was confirmed by Parliament [23d August 1670], and the surgeons were by another Act (1695) constituted "chirurgions and chirurgion apothecaries."

⁴ In 1670. "Royal Grants," etc. p. 39.

⁵ Records of Town Council, 1st and 19th June 1657. See Appendix C.

⁶ That this attempt to supersede the Surgeons was not soon forgotten by them is evident from the minutes of their meeting of 22d August 1672. The Chairman produced to the meeting a proposed Act of Parliament "for erecting the College of Edinburgh into ane Universitie." He stated that this Act had been "given to him by ane confident person, to consider if the calling might be concerned y'in or not." There was a division of opinion; but a report framed by James Borthwick was adopted, supporting the Act under certain conditions, as one calculated to be useful, and to be a "caveat against all hazards by a College of Physitians."

able to the plotters than Cromwell had been; but we then had a different kind of security. No patent could now issue from *Westminster*. Edinburgh had two representatives in the Scotch Parliament. The Town Council in those days, and indeed for very long after, kindly saved the inhabitants the trouble of selecting them. It is not three weeks since, in the course of my diggings, I discovered a proof, to me as new as I am sure it must be to all of you, of the wisdom with which that body exercised its power. Be it known to you that the Council frequently chose our deacons to represent this metropolis in the Parliament. I find no less than three instances of this in the rolls of the Scottish Parliament between the Restoration and the Union.¹ I am sure you will agree with me that this was a far better choice of Parliamentary representatives than what was often made by their successors prior to the Reform Bill.

The period at which we have now arrived may be termed, in geological language, the *cocene* period of our Edinburgh Æsculapian formations; certainly not the *pleiocene*, judging from its fossils. But that we really had made a great advance by the time of Charles II. is plain from the fact, that rather before his time we lost sight of that megatherium, the barber-surgeon. Thirty years before he was in full force; and the curious may find a very perfect specimen of him embalmed in the statutes of Jingleing Geordie's² Great Institution. Metaphor apart, after our union with the apothecaries, our incorporation gave up the barber craft;³ not by any formal act or statute, but simply by ceasing to practise it, as we ceased to practise pharmacy in the early part of the present century. We even neglected to confer on the simple barbers that civic status which we alone could confer, and which was necessary to the legal exercise of their trade within the city, and were reluctantly compelled by the Town Council to perform this duty and keep a register of them as dependents.⁴ The barbers were often refractory; and, in the beginning of last century, brought us into the Court of Session to adjust some rights, real or imagined.⁵ But a compro-

¹ James Borthwick in 1661, Arthur Temple in 1669, and George Stirling in 1689. See Acts of the Parliaments of Scotland, published under the superintendence of the late Thomas Thomson, Esq., advocate. Folio. V.Y.

² The well-known sobriquet of 'George Heriot', applied to him familiarly by James VI.

³ Surgeons' Records, 20th July 1743, where a report may be found on the history of the Incorporation, prepared by them at the request of Maitland, the historian of Edinburgh.

⁴ Records of the Town Council, 26th July 1682.

⁵ Records of the Surgeons, 6th July and 5th August 1708; 20th May 1718;

mise, on conditions satisfactory to both parties, received the sanction of a decision of the Court of Session on the 23d February 1722; and since then they have managed all their own interests, and given us no further trouble. The gain to them was even greater than to us; for, to avoid the most remote suspicion of being shedders of blood is the beau-ideal of their art; yet, if we may trust to Maitland, the Town Council, unlike its modern representative, had the marvellous folly to compensate them for their imaginary loss, by allowing them to make *agua vitæ*,¹ thus enabling them to act on the inner man instead of the outer, and by an agent compared with which the knives of the barber-surgeons were infinitely less perilous.

On the gable of the Old Grey Friars church may be seen a remarkable monument. A skeleton is sculptured in the centre, and is festooned around with various surgical implements.² It marks the resting-place of James Borthwick, whose picture is by much the oldest we possess.³ He entered the incorporation in 1645. He was an active member, and took a large share in controlling the irregularities of the barbers. He was also among the most active in counteracting the plot of 1657. He was a cadet of the Crookston Borthwicks, and nearly related to the Borthwick peerage;⁴ and his mother, one of the Browns of Colston, belonged to a family much distinguished in Scottish history. He acquired the estate of Stow, which he planted, improved, and left to his family. James Borthwick represented Edinburgh in the Scotch Parliament of 1661. His family is now extinct.⁵

20th May 1719; 27th January, 11th November, and 23d November 1720; and 23d February 1722; also the minute already quoted, 20th July 1743.

¹ History of Edinburgh, p. 296.

² The inscription is much injured, probably during the fire of the church, which occurred about sixteen years ago; but it may be found in Maitland, p. 193, and it bears that the monument was erected by the eldest son of James Borthwick.

³ See Appendix B. He must have died early in 1676, for his name is found in a quarterly list, 16th Feb. 1676, and not in a list of 15th June following. [Records of the Surgeons.]

⁴ The following names are recorded as witnesses to the baptism of twin children of James Borthwick, in 1654,—viz., John Lord Borthwick; William Borthwick of Crookston, elder and younger; George Borthwick, son to said William; and John and George Borthwick, brothers-german to said William of Crookston.

⁵ James Borthwick inhabited a house at Stow which had once been a palace of the Archbishop of St Andrews, and of which some part exists, or lately existed, near to the manse.

In 1681, the Royal College of Physicians was established, under the judicious management of Sir Robert Sibbald, the naturalist. There was no surgery clause, and it was simply an *Edinburgh* college, not a college for Scotland. With our sister college we are now happily united in wedlock; after a reasonable amount of those jealousies by which true lovers, ever since the flood, have been accustomed to tease and torment each other, and to manifest the unutterable depth and strength of their mutual attachment. Contrary to analogy, our jealousies were at a higher point at the time of the birth of the fair lady than they have ever been since. For this there were obvious reasons. The conduct of her parents in Cromwell's day was still fresh in our memory; they *might* possibly have educated her in pragmatism notions of an aristocracy in medicine, imbibed during their education abroad, which would not have gone down with us. Since the abortive attempt of 1657, we had heartily shaken our sides, with Molière and with all Europe, at the physicians of the court of Louis XIV., who imitated the foppery and pretentiousness of his noblesse. The French might do as they listed. They might have their "*Doctissimi Doctores, medicinæ professores*," deep in Galen; and might choose that their "*chirurgiani et apothecari*" should be only "*sententiarum Facultatis fideles executores*,"¹—the humble servants, in short, of their physicians; but *we* were determined that it should not be so here; and our friends, the Physicians, to do them justice, had too much respect for our social position to offer us any such indignity.

In 1694 we received from William and Mary a patent, which was ratified by Parliament in the following year.² In this document I find a definition of the limits of medicine and surgery about as good, and about as useless for exclusive purposes, as such definitions are usually found to be. It was, however, satisfactory to both parties, and I find a proof of this in a document issued by the Physicians on 22d July 1695, five days after the passing of the Act just mentioned, in which they say "that quhairs we have now rid marches with the chirurgians in Edinburgh, we will not in any manner of way oppose the re-uniting of Chirurgie and Pharmacy."³

Till the Act of 1695,⁴ our powers were bounded by the city walls. We were by that Act constituted Chirurgians and Chirurgian-Apothecaries of Edinburgh, and empowered to examine all who practised anatomy, surgery, and pharmacy within the three Lothians, and the

¹ Molière, "*Malade Imaginaire*."

² "*Royal Grants*," p. 64.

³ "*Royal Grants*," etc., p. 48.

⁴ "*Royal Grants*," etc., p. 48.

counties of Peebles, Selkirk, Roxburgh, Berwick, and Fife. This was an important step, indicative of the desire which then existed for having educated and qualified surgeons in the rural districts. I have not a doubt that, along with other causes, it contributed, and that in no small degree, to the establishment of the medical school of this city.

Before giving you an account of our connection with this most important event, I propose to introduce you to one or two of those who were then prominent among our predecessors, and who took a large share in the deliberations of the period.

John Monro¹ was an army surgeon under King William the Third, and settled as a surgeon here in 1700. He became one of us in 1703, and was elected President in 1712 and 1713. He was a younger son of Sir Alexander Monro, of Bearcrofts, in Stirling-shire, and was related to the family of the celebrated Duncan Forbes of Culloden.² Like his distinguished relative, he was a staunch friend to the Revolution Settlement, and like him, too, was a good and amiable man. He is said to have had engaging manners, and to have enjoyed a large share of professional success. He had the merit of discovering the peculiar abilities of his son, and of educating him to be a great anatomical teacher. I need scarcely add that this son was the celebrated Dr Alexander Monro, the first of the three successive Professors of Anatomy who bore his name, one of our members at a later period, and, I may add, librarian to the Incorporation for many years.

The celebrated Dr Archibald Pitcairn³ was the leading physician here in the end of the 17th and early part of the 18th century. He was the first to discover the advantage of being connected with both Colleges, having been an original Fellow of the Royal College of Physicians in 1681, and having joined us on the 16th October 1701. His admission was unanimous, and without the customary pecuniary payment. The minute states his eminent services to his profession as the ground of this unusual compliment, and further states that it was his own expressed desire to be admitted to our fellowship. He was made Professor of Physic in the University in 1685, though there is reason to suppose that the professorship was merely an honorary distinction. In 1692 he became Professor of

¹ Portrait shown; by Aikman.

² I state this on the authority of his great-great-grandson, Alexander Binning Monro, Esq. of Auchinbowie. I have been informed that John Monro was the guardian of Duncan Forbes.

³ Portrait shown; by Medina.

Physic at Leyden, where he had among his pupils Hermann Boerhaave and Richard Mead. In the year following he returned to Edinburgh to practise his profession. At that time the study of physical science had undermined the old authoritative and scholastic medicine, and the chemical and mathematical physicians were contending with each other which should best explain the complex phenomena of animal life. Pitcairn, a very able and enthusiastic mathematician, was, in his day, the Coryphaeus of the mathematical physicians. Though he was beyond all question an accomplished scholar and a man of rare ability, yet his works are now seldom read. In matters purely practical, he shows good sense and observation. In his theoretical speculations he pushes his favourite mathematics to almost incredible paradoxes. He concludes a volume of essays, published in 1713, in the following very characteristic words:—"Quapropter non dubito me solvisse nobile problema, quod est, DATO MORBO, INVENIRE REMEDIUM."

"Jamque opus exegi,—
FINIS."¹

The last four words may imply that he was conscious of the failure of Nature; for he died almost immediately after this, his last publication, had been produced.

His wit was not always under the guidance of the most fastidious propriety,—a fact of which I *could* easily produce more instances than I *shall*. You will perhaps excuse a single sample.

By a process of very unconvincing mathematical demonstration contained in a treatise on Digestion, he so enormously exaggerated the force of the circular muscles of the alimentary canal in relation to that function, as to draw forth from Astruc, a contemporary French physician, an equally absurd attempt to prove, and *that* mathematically, that the circular muscles have no power of compression at all. Two Scotch professors, friends of Pitcairn, one of whom was Gregory the mathematical professor at Edinburgh, replied to Astruc's mathematics very effectively. After noticing their labours, and quoting Gregory's words, Pitcairn expresses himself thus — "Hæc meus Gregorius."

"Ego libellum Astrucii non vocem—cacatam chartam, quia mihi videtur Astrucius nunquam cacasse: alioquin sensisset musculos abdominis et se contrahere, et alia exprimere posse."²

¹ "Dissertationes Medicæ, Edinburgh, 1713." P. 196.

² "Dissertationes Medicæ"—(Preface).

It appears from our minutes of the 15th September 1711 that he paid a fine of six shillings Scots money (6d. sterling) "for swearing." If it did him good, which I hope was the case, he had a remarkably cheap bargain. The very contemptible trash published in this city, nine years after his death, for which some of his biographers have sought to make him responsible, appears to me to bear internal evidence of being none of his work. I allude to a drama under the title of "The Assembly." It is despicable alike in morals and in ability. Another piece of ribaldry attributed to him, and bearing the title "Babel," printed for the first time by the Maitland Club, is somewhat less reprehensible and somewhat more able; but it is a great injustice to the memory of an eminent man to make such imputations on the strength of mere hearsay. Among the disappointed Jacobites and Episcopalians of those days, there were doubtless many who were capable of effusions equally bitter, and far more able than either of those worthless productions.

His Latin poems¹ are chiefly valuable now as records of his opinions and prejudices in church and state, and also of the names of his friends and associates, of whom many belonged to this body.² One of those poems may be noticed as connected with one of our pictures, that of the Duke of Hamilton,³ whose tragical death it commemorates. After killing his adversary in a duel, he was treacherously murdered by the second of that adversary in Hyde Park in 1712. He was one of our honorary members.

Pitcairn left instructions that certain bottles of wine should not be uncorked "till the king had his own again." They were, however, uncorked, with the consent of Lady Ann Erskine, his granddaughter, on the 25th December 1800, the anniversary of the doctor's birth. They proved to be Malmesey, in excellent preservation.⁴

¹ Selecta Poemata, Edinburgh, 1737.

² Particularly Alexander Monteth and Thomas Kincaid; the latter, like himself, a writer of Latin verses.

³ Selecta Poemata, Edinburgh, p. 79. Portrait shown; by Medina.

⁴ I state this partly on the authority of a deceased Fellow of the College, Dr W. Farquharson, to whom the wine was given by the lady, and partly on the authority of a curious advertisement, pasted into the copy of Dr Webster's Life of Pitcairn in the library of the College of Physicians. Each of the contributors for the restoration of the tomb was to receive a *Jereboam* [a large glass] of the Doctor's wine. See also an account of the restoration of Pitcairn's tombstone by the medical gentlemen of Edinburgh, *Annals of Medicine*, vol. v., p. 503, and *Carm. Rar. Macaronicorum delectus*, Edinburgh, 1813, page 130. A rectangular slab on four pillars, with inscription by his friend Raddiman, marks Pitcairn's grave. It is a little way west of the north entry of the Greyfriars' churchyard.

Robert Clerk¹ was the son of John Clerk, the first of his name who possessed the barony of Pennycuik. He was an intimate friend of Pitcairn, and was eminent in his profession. Like John Monro, he educated to that profession a son who was destined to much higher celebrity than the father. This son was the celebrated Dr John Clerk, the favourite pupil of Pitcairn, and his successor as the leading physician here; the early patron, too, and intimate friend of Cullen, to whom we are indebted for his very interesting biography.

Of the origin of the medical school of Edinburgh, a good deal has already been written, especially by Bower in his History of the University. But all the published accounts of this important event are more or less inaccurate. Having consulted the original sources of information, I shall be enabled to correct some errors, to fill up some gaps, and to supply you with an account, which, so far as it goes, will be at least one on the faithfulness of which you may rely.

As a knowledge of the structure of the human frame is the foundation of all medical science, I propose to discuss the history of anatomical instruction separately, and afterwards to give some account of the other departments.

The remarkable provision for instruction in anatomy contained in our first charter is the only one, so far as I can discover, which existed here till 1694. On the 24th October of that year, an active member of ours, by name Alexander Monteath, obtained from the Town Council a gift, for thirteen years, "of those bodies that dye in the correction-house," and of "the bodies of fundlings that dye upon the breast;" also of a room for dissections, and the use of the College churchyard for the burials. There were various conditions; one of which was, that he was to attend the poor gratis, but to be paid for his "dregs" at prime cost.²

His brethren of the incorporation were immediately in the field [2d Nov.] with a similar application. They obtained "the bodies of fundlings who dye betwixt the tyme that they are weaned and thir being put to schools or trades; also the dead bodies of such as are stiflet in the birth, which are exposed, and have none to owne them; as also the dead bodies of such as are *felo de se*, and have none to owne them; likewise the bodies of such as are put to death by sentence of the magistrat, and have none to owne them,—which includes what former pretensions of that kind the petitioners have."

¹ Portrait shown; by Medina.

² Records of Town Council.

The grant to take effect in the winter between the two equinoxes, "allenary." And there is another important condition, "that the petitioners shall, befor the terme of Michallmes 1697 years, build, repaire, and have in readiness, ane anatomicall theatre, where they shall once a year (a subject offering) have ane public anatomical dissection, as much as can be shoven upon one body, and if the failzie thir presents to be void and null."¹

On the 2d June 1696, we resolved to build² our new house, assigning as a reason, that the Town Council's gift would otherwise lapse. The contract was signed on the 7th July.

On the 17th December 1697, our anatomical theatre being then completed, the Town Council confirmed its gift, but, at same time, restricted its advantages to the regular apprentices and pupils of freemen. This excited great opposition among us, but was ultimately conceded by us. The same day we chose "a committee to appoint the methods of the public dissections and the operators."³

From a minute of 1st Feb. 1705, I learn that a stranger then in Edinburgh wished to get possession of the theatre, and the use of the bodies, and was willing, in that case, to have instructed our apprentices gratis. We preferred, however, to comply with a request made by one of our own number, Robert Elliot, that we should constitute him, during pleasure, our Professor of Anatomy.⁴

On the 29th August 1705, Elliot petitioned the Town Council for encouragement in his undertaking. The Council, in consideration that he had been unanimously chosen by us, voted him an allowance of £15 a year, to be paid by the College treasurer, stipulating that he is to take a charge of "the rarities in the Colledge," and to "make ane exact inventar" of them.⁵

On the 28th July 1708, the Town Council elected Adam Drummond,⁶ on a representation made in his favour by John Mirrie,⁶ then President of the Surgeons, to be conjoined with Elliot in the professorship, and to enjoy half of the salary.

On the 5th August following, Drummond was admitted by the Surgeons, on a motion by Elliot, to be conjoined with him in the use of the theatre, both for public and private courses. He was promised, as Elliot had been, all possible aid and countenance in instructing apprentices and others.

¹ Records of Town Council.

² Records of the Surgeons.

³ See Appendix D.

⁴ See Appendix D.

⁵ Portrait shown; by Medina. See Appendix E.

⁶ Portrait shown; by Medina.

On the 24th October 1716, John M'Gill,¹ then Deacon of the Surgeons, was chosen by the Town Council Joint-Professor of Anatomy along with Drummond, in the room of Elliot, deceased,² under all the former conditions.

On the 28th March 1717, M'Gill was appointed by the Incorporation of Surgeons also.

On the 21st January 1720, Drummond and M'Gill stated to a meeting of the Surgeons their inability duly to attend to their professorship. "They and the haill calling being persuaded of the sufficiency of Alexander Monro, one of their number, did therefore unanimously recommend him to the Provost and Town of Edinburgh to be Professor of Anatomy within the said city."

On the 29th January 1720, the demissions of M'Gill and of Drummond, subscribed with their own hands on the 26th and 28th, were reported to the Town Council by Mr John Lauder,³ then Deacon, who recommended Alexander Monro, and tabled the recommendation of him by the Surgeons; upon which he was elected, at the same salary as formerly, during pleasure.

On the 14th March 1722, Alexander Monro, on a petition to the Town Council as patrons of the University,⁴ was made professor therein *ad vitam aut culpam*, with the same salary as before; but continued to hold our appointment also, and to teach in our theatre.

On the 20th October 1725, he petitioned the Town Council again, "as patrons of the Universitie, to allow him, as Professor of Anatomy therein, a theatre for public dissections." The Council appointed a committee "to appropriate ane fitt place in the said University, to be adapted for the said theatre."⁵

The different steps, then, in this history may be summed up thus:—Dissections were occasionally conducted by us during nearly two centuries, for the instruction of our own pupils. In 1697 we completed a theatre, constructed within our own Hall, for the express purpose of giving more efficient anatomical instruction. We were

¹ Portrait shown. See Appendix E. The painter is doubtful, the style of art being somewhat different from Medina's. The date of M'Gill's entry is December 1710; and as Medina died in 1711, it is chronologically possible that he may be the painter.

² There is no portrait of Elliot in our Hall. His name appears in the quarterly accounts of 3d February 1715, and is not found in those of 20th May following. He must, therefore, have died between these dates. Bower is in error in stating that he died early in 1714.

³ Portrait shown; by Medina.

⁴ Records of Town Council.

⁵ Records of Town Council.

aided with additional anatomical subjects by the Town Council, under a special Act of theirs, as *administrators of the public charities*. In 1705 we constituted a Professorship of Anatomy, in the person of one of our number. More than six months thereafter, the Town Council, as *patrons of the University*, connected our professor with that institution by a small salary. He thus came in the end to hold a double, or rather triple chair: from us, from the Town Council in its civic capacity, and from the same body as University patrons. Sometimes, as in the cases of Drummond and M'Gill, the Council, at the suggestion of our representative at its board, took the lead in appointing; at other times, as in the cases of Elliot and Monro, we appointed first, and the Council followed; in *all* cases there was perfect harmony between the different classes of patrons. In 1722 the professorship was made permanent by the University patrons, the professor still teaching, however, in our theatre. And, finally, his teaching was transferred, in 1725, from our theatre to one within the University.

On the history of the other departments of medical instruction I must now say a few words. Botany, the earliest of these, owes its origin as a University professorship in 1776, chiefly to Sir Robert Sibbald and Dr Andrew Balfour. It appears that our jealousy was at first aroused, lest it should be a cover for such a project as that of Cromwell's time; but that, being satisfied on this point, we heartily co-operated, for the sake of our pupils, with the projectors, and thus ensured the success of their project.¹

On the 11th June 1695, Sutherland, the professor, requested us to assess our apprentices and pupils "one guinea, or twenty-three shillings"² each, for instruction in Botany. The conditions of his request are curious. He was to acknowledge us "as his patrons," to "attend upon" us "in the garden, and demonstrate the plants whensoever" we "should have inclination," and to "wait upon" us "at a solemn public herbarizing in the feilds four severall times in every year." These and other similar conditions were renewed, almost in the same terms, on the applications of his successors Charles and George Preston for the same advantage, which all of them enjoyed in succession. The Botanical professorship does not appear to have been a life appointment. On the 29th August 1705, Henry Hamilton,³ Deacon of the Surgeons, complained to the Town Council that "Master James Sutherland, keeper of the Colledge and

¹ See Sir R. Sibbald in "Bower's History of the University," vol. i., p. 362.

² This seems to imply that a guinea was then worth twenty-three shillings in silver.

³ Portrait shown.

Physick Gardens, was very much defective in his duty as to teaching Chirurgeon-apprentices the science of Botany, *which was a considerable part of his employment.*" The principal and the treasurer of the College also complained "that the yeard of the said Colledge was altogether neglected." The Council applied an instant remedy. They restricted Sutherland's provision of L.20 from the "Colledge" funds to L.5 yearly, and threatened that, unless the evil were remedied, they would deprive him of the L.5 likewise. This brought matters to a crisis. Sutherland resigned. It is remarkable that the successful application of Charles Preston to us for an Act similar to that which Sutherland had obtained in 1695, bears date 8th November 1705, six months prior to his appointment by the patrons of the University, which was on the 8th May 1706. Of such importance was our support and that of our pupils deemed to be.

The Professorship of Physic, established in the University in 1685, was merely titular; so far, at least, as I have been able to discover.

Our enterprising friend Monteath became tired of teaching anatomy, and in 1697 took a lease of a chemical laboratory within our Hall for the purpose of teaching chemistry. I have here an old Edinburgh Gazette, containing an advertisement of his course of lectures in 1699. It is termed a course of "Chimie;" was to begin "on Munday the fifth day of June," and was to last six weeks. "All the usual operations" were "to be performed."¹

I much regret that I cannot show you the lineaments of this active and able member of our body from the glowing canvass of Medina. He was intimate with Pitcairn, from whom we know that he was an excellent surgeon and chemist.² I have a strong suspicion that he was also, like his friend, a staunch Jacobite; for, after having been duly elected to fill our chair, and represent us in the Civic Council, in 1699, he was deposed from both offices by the Lords of the Secret Council, at the instance of the magistrates. A dispute with them about one of the steps of the municipal election, is the only ostensible cause to be found either in the minutes of the Secret Council or of the Town Council, or in our own. But it is obvious that there must have been something deeper under it; and when you recollect that King William's throne, and even his life, had been

¹ It is found in Nos. 25 and 26 of that paper—the former bearing date from Thursday, May 18th, to Monday, May 23d, 1699; and the latter, from thence to Thursday, May 25th. The originals, which were produced at the conversation, are the property of Dr James Keith. An accurate copy of the advertisement will be seen in Bower, vol. ii., p. 150.

² *Dissertationes Medicæ*, p. 234. Edinburgh, 1713.

exposed to serious plots from the time he lost his wife in 1693, and that the execution of Sir John Fenwick was then a very recent fact, the explanation I have given will perhaps appear to you to be the probable one.

After 1720, various other departments of medicine were added to the school at our theatre. Theory of Physic was taught by St Clair, Practice of Physic by Drs Rutherford and Innes, Chemistry by Dr Plummer. On the 9th February 1726, these gentlemen applied to the Town Council to have their departments "taught in the Colledge," and were, at that date, constituted Professors of Medicine by the patrons of the University, under a variety of conditions which I will not take up your time by explaining. In short, the medical school in the University was then constituted. Midwifery was added on the same day; Mr Joseph Gibson, one of us, being the first professor. The appointment was made on the strength of an act of ours recommending him to the patrons as a fit person. The University was then first authorized by the patrons to confer degrees in medicine.¹

The mere recital of the series of facts which I have laid before you, shows better than any feeble eulogy of mine how very important was the part enacted by the first Alexander Monro in the inauguration of the medical school of this place. Without disparagement to the memory and the services of the many really great, but less known contributors to that object, I venture to say—and it is the highest praise—that even among *them* he stands forth pre-eminent. His work on Osteology will be allowed by all competent judges (and there are many such present) to be a worthy and enduring monument of his great reputation. By his talent as an anatomist, and not less by his very superior education, he gave an impulse to his own special department of instruction which stimulated the ambition of enterprising men in all the other departments. To him and to them we owe, in a very great degree, the reputation which this city has since enjoyed as a medical metropolis. Their views, for the time in which they lived, were honourably distinguished by their breadth and liberality. Living, as we now do, in an age in which nothing approaching to selfish narrow-mindedness will be tolerated, let us preserve the rich legacy which they have bequeathed to us by emulating their example.

I am indebted to Captain Monro of Craiglockhart for permission

¹ The Act is omitted at its proper place in the Town Council Records, but inserted long after, on 26th August 1747.

to show you an admirable portrait of his great-grandfather, by Allan Ramsay, son of the poet. The bust of him on the table was presented by Dr Alex. Monro, tertius, the father of Capt. Monro.

I beg also to express my thanks to Mr Rhind for the excellent drawings by which he has enabled me to show you the appearance of that ancient edifice which was the theatre of such memorable doings. Its bones yet exist in the substructions of the fever hospital. I have not been able to discover in what part of it the anatomical and other professors taught; but Montecath's chemical rooms were three in number, and were in the west wing and ground floor.¹ The two windows immediately to the west of the centre one lighted the great hall, which had also windows from the back.²

The ground formerly belonged to the Blackfriars, and was bounded on the south and the east by the second city wall; and on the west by the grounds of the High School. It was conveyed by charter of the Town Council to the Incorporation of Surgeons, 3d July 1656.³

Before quitting the period of the origin of the medical school, I may say that there are to be found in it various other indications of the healthy activity of our predecessors. Books were presented⁴ on a very large scale, specimens of anatomy, too,⁵ and of natural history;⁶ we had a fight in the law courts with the magistrates of Dundee about the carcass of "ane elephant;"⁷ and there is one other indication of activity which I must not call *healthy*, that there are frequent complaints against us or our pupils for the violation of the church-yards.⁸ There must also have been some progress in material wealth; for the old Hall was built without pecuniary aid, and not only so, but we were able to survive an unfortunate subscription of L.600 sterling, on which we paid up 25 per cent., to the

¹ Records of the Surgeons, 26th February and 16th March 1697.

² It was 95 feet long and about 20 in breadth. See Appendix F.

³ See Appendix G.

⁴ Particularly 23d March 1699 and 3d February 1709. See also 27th May 1709, 13th December 1720, and 1st March 1722. The library was incorporated with that of the University on 8th April 1763.

⁵ In 1702, Dr Pitcairn presented a skeleton, the oldest specimen in our museum; Dr Monro presented another skeleton, 13th September 1718. Both bear inscriptions on the cases inclosing them. Pitcairn designates himself "Fellow of the Royal College of Physicians, and one of the Chyrurgeon Apothecaries of Edinburgh."

⁶ "Ane egyle" was presented by Montecath, 15th September 1709.

⁷ 6th August 1706.

⁸ 17th May 1711; 24th January 1721; 17th January 1722. On the 2d March 1725, the professor was placed under special regulations on the subject of procuring bodies for dissection.

celebrated South Sea scheme, at the very time when we were about to build.¹ During this period, too, we subscribed a guinea each for a green-house in the "Physick Garden,"² and it was during the same time that most of our pictures were painted.³ By much the larger number of them were by Sir John De Medina. The only original picture of Sir John, painted and presented by himself, is among the number.⁴

The important part which the Corporation of Surgeons acted in relation to the institution of the Royal Infirmary I intend to pass over. It has been largely set forth by others, and it would take up too much of the time allotted to me.

Our erection into a Royal College in 1778 was an important change. By the charter a Widows' Fund was constituted, which, though well intended at the time, was found to be most injurious afterwards, and is now no longer an impediment to the acquisition of our Fellowship. The charter gave us a national position without depriving us of our connection with the civic incorporation. By degrees that connection became less valued, because it was coupled with a control over the choice of our president, which, though rarely exercised by the Town Council, might be so at any time, and was in fact brought once into operation in my time,⁵ to our utmost possible disgust. We made various efforts, both in this and in the last century, to shake off this miserable thralldom, but always ineffectually, till the burgh reform of 1833, to our great satisfaction, made it no longer necessary that our president should be a member of the Town Council, and left us uncontrolled in our choice. We were still, however, one of the incorporations of Edinburgh till the Act and charter of 1851 dissolved what remained of our civic character, and placed beyond all dispute our rights as a national College. These rights had been disputed eight years before by the English poor law authorities; and it was only by an opinion of counsel, sought by Sir James Graham, the Secretary for the Home Department, and by the late Lord Macaulay, who was then the

¹ 29th February 1696.

² 5th August 1712.

³ Some curious matter will be found on the subject of pictures, 17th May 1711, and 27th January 1720.

⁴ Portrait shown.

⁵ In the autumn of 1816, the late Dr Gillespie was chosen to be our president, and was excluded from the chair by the Town Council, to whom his politics were not acceptable. He was again chosen two years after, and forced on the Council by a list [list] consisting of those most unacceptable to that body as then constituted. My friend Dr MacLagan, senior, and I were among the number. The list consisted of six, of whom the Town Council could exclude any three.

member for Edinburgh, that we were enabled to protect the rights of our numerous licentiates from destruction.¹

I cannot omit here a passing notice of two important events of my own time. The first is the acquisition, in 1826, of two museums, that of the late Dr John Barclay, by bequest, and that of the late Sir Charles Bell, by purchase,—the two constituting, together with our own accumulations, an anatomical collection not inferior to any other in the kingdom, except that of the Royal College of Surgeons of London. The other event is the building of the Hall in which we are now assembled. As the occupant of that chair to which you, Sir, have been so recently and so deservedly called, I had the honour, in 1832, to preside at its inauguration.

The institution of a Professorship of Surgery to this College in 1804, in the person of Dr John Thomson (afterwards Professor of Pathology in the University),² and the subsequent abolition of our professorship some years after the institution of a Chair of Surgery in the University, are also events which I am bound to chronicle, but on which I cannot find time to dilate.

It remains that I should notice with the greatest brevity, a question recently settled, after having weighed heavily, not merely on this College, but on the interests of the whole medical profession, for more than forty years.

Our chartered rights over the practitioners of certain counties were exercised with such liberality to other boards, that I believe no instance can be produced, since the time at least of our becoming a College, of the prosecution of a licensed medical man for settling within our bounds. Even the unqualified have been totally unmolested by us during the memory of the oldest men among us. Our diploma has been by us treated, not as an exclusive license, but as a certificate of professional qualification. A different view of duty was taken by the Apothecaries' Company of London. By their Act of 1815, they acquired a right to prosecute all practitioners, English medical graduates alone excepted, who dispensed medicines to their patients in any part of this island to the south of the Tweed. Their act was an English monopoly against the holders of qualifications derived from Scotland and from Ireland, many of which inferred a higher amount of education than their own. The powers of their act were not left dormant. Holders of the best qualifications were prosecuted, and all who did not hold the license of the Company,

¹ See an account of this transaction, *Edinburgh Medical and Surgical Journal*, vol ix., p. 452.

² Portrait shown.

even if not prosecuted, were legally disqualified from holding offices essential to success in life. By a long series of remonstrances, the Legislature was at length awakened to the evil; and, after many abortive efforts, has at length established the principle that men legally qualified to practise the healing art in one part of the kingdom shall in future be legally qualified to do so in all parts of it. Our humane profession, which, in its objects, knows no local boundaries, is no longer, like the law and the pulpit, local in its rights; "a river here, there an ideal line," no longer circumscribe its beneficent operations; our medical boards are no longer debarred by vicious laws from co-operating for the good of the public and the improvement of the profession; in short, we have now got a real and *bona fide* medical reform. It would be unjust to the modern representatives of the Apothecaries' Company not to add, that, in this memorable struggle, their conduct evinced a becoming sense of what was due from them to the spirit of the age.

The most distinguished apostle of this movement was the late William Wood, by principle a reformer of all wrong things which he had the power to rectify; a man whom it was a happiness to know, and a high privilege to know as an intimate friend. Singularly fitted for his peculiar mission; swift to detect both the good and the bad effects of any given movement; ready alike in statement and in reply; of remarkable liberality and courtesy; of indomitable perseverance; and of the most perfect intrepidity and disinterestedness in the discharge of duty, he made his influence felt by medical reformers in every part of the kingdom, conciliating those whom he opposed, and infusing his own genial spirit into the hearts of many. He lived to see the dawn of the new era which his exertions had so largely contributed to bring about.³

I must now draw to a conclusion. In reviewing the long list of those who have preceded us, one cannot help being painfully impressed with the conviction that the memory of many excellent characters, and of their deeds, must necessarily have perished.

"Ilacrymabiles

Urgentur, ignotique longa

Nocte, carent quia vate sacro."⁴

"The evil that men do lives after them,

The good is oft interred with their bones."

It would be more just to say, what in fact was our great dramatist's

³ It will be satisfactory to the friends of Mr Wood who were not present to know that this short notice called forth a response which was cordial and unanimous.

⁴ Horace, Lib. iv., Od. ix., 26.

meaning, that the *memory* of the evil lives, and that the *memory* of the good often perishes. The great and striking achievements of our Harveys and our Jenners are indeed commemorated. But most of our improvements make less noise, and their sources are too apt to be forgotten. Yet there is reason in this apparent ingratitude; for that which is wrong is remembered in order to be in future avoided, and thus, instead of living after us, is gradually extinguished; whilst that which is right and good is absorbed into our habits, becomes, as it were, a part of ourselves, and far from being buried, perpetually accumulates for the benefit of millions who are necessarily ignorant of the names of their innumerable benefactors. Thus it is that, with us, as with men of other pursuits than ours, science, civilization, and religion are perpetually adding to their beneficent triumphs, acquiring new claims to our gratitude, and impressing us more deeply with the solemnity of our own responsibilities. I hope that in endeavouring, however imperfectly, to recall to memory some of our past worthies, and of our own unspeakable obligations to them, I may not be considered to have employed altogether without profit the short period that we have been together.

APPENDIX.

(A. p. 7.)—FORM OF AN INDENTURE IN 1653. *Extracted from the Minutes of Evidence in the Borthwick Claim of Peerage. Printed 1812. P. 63.¹*

"THEIR Indentourie maid at Ed^r y^e twentie two day of Feb^r. I^m VI^e and fyftie three years properlie and bearing leill and suthfast wittnessing in tham selfis, y^e it is apoynt, agreed and finallie ended betwixt y^e parteis following: To wit, betwixt James Borthwick, Chyrurgeon burges of Ed^r, on y^e one p^t, and W^m Borthwick sone lau^d to Alex^r Borthwick in Johnstoun-bourne, with y^e special advyse and assent of y^e said Alex^r his father takand burding in and upoune him for y^e s^d William his sone as cautioner for him for fulfilling of his p^t of ye indentore under written, and als ye s^d W^m for him sel in manner forme and effect as after followis: That is to say, ye s^d W^m Borthwick, with advyse and assent aforsaid, is become, be ye tenour heirof becomis bound prenteis and servant to y^e said James Borthwick, Chyrurgeon, to his art and callinge of Chyrgerie and Barbars craft and Pharmacie for all the days, space, years and

¹ These Minutes are obviously printed very inaccurately; and in the present reprint some liberties have been taken for the purpose of obviating errors.

termes of fyve years next, and immediatlie following his entrie y^e to quhilk sall be, God willing, begun y^e day and date heirof, and y^e santh (saxth ?) yeir for meal and fie as he and his s^d mastr can agrie during y^e qlk space y^e s^d W^m Borthwick faithfullie bindies and obleisies him be y^e faith and treuth of his body to serve y^e s^d James Borthwick his mastr, leillie and trowlie, night and day, holy day and week day, in all thinges godlie and honest and sall not know nor heir of his said master's skeath during y^e space aforsaid, and sall reveill the same to him and remeid y^e samyne to his power, and sall not absent him self fra his said master's service at na tyme during y^e space and terme in y^e indentor, without the special licence of his s^d master had and obtinet to yat effect, and if he doeth in y^e contrair he obleisies him to serve y^e s^d James Borthwick his mastr twa dayes for ilk dayes absence efter y^e expyryng of y^e indentor, and sall re-found convert and pay to his said Master twa pennies for ilk penny of losse yat y^e s^d James Borthwick his Mastr sall be damnefeit in his default, during y^e space forsd, and sall not drink extraordinarie nor play at Cards nor dyce, nor no other unlauffull game, nor have nor frequent na debeist or idle Company quhairby he sall be in any sort drawne fra his Master service, and if it sall happen y^e s^d W^m Borthwick (as God forbid) commit y^e filthie crymes of fornication and adulterie, at anie tyme during y^e space contenit in yir indentor, in that cause he faithfullie binds and obleisies him to serve y^e s^d James Borthwick his Mastr three years efter the expyryng of yir indentor in y^e samen estate as if he wer bound prenteis as s^d is, And for y^e s^d W^m Borthwick his lawfullie remayning and fulfilling of y^e premisses, y^e s^d Alex^r Borthwick his father, be the tenour heirof becomes bound and obleist as Cau^r and sourtie and y^e s^d W^m Borthwick binds and obleisies him for his fathers relief, Lykeas y^e said James Borthwick for the causes abovewritten and for the soume of ane thousand merks money payable be y^e s^d Alex^r Borthwick with y^e s^d W^m Borthwick his sone to y^e s^d James Borthwick in name of prenteis fie, and that at the feast and terme of Witsunday next come precisely I^m VI^e and fyftie three years, but longer delay fraud or guyll, togeder with y^e soume of ane hundred punds money of liquidate expenses, incase of failzie, by and attour y^e payment of y^e s^d principal soume with y^e ordinar annual-rent y^e of sua long as ye same remayns unpyed efter y^e s^d terme, the said James Borthwick binds and obleisies him to ken, learne, teach and instruct y^e s^d W^m Borthwick his s^d prenteis, in all the poyntes, practiques and wayes of his s^d art and calling of Surgerie, and barbor croft, and pharmacie, and sall not hyd nor conceall na poynt nor pratique hair-of fra him, but

shall do his utter and exact diligence to cause him conceive, learne and understand y^e same, so far as he is able or can do himself, and shall furnishe and sustene y^e s^d W^m Borthwick his prentis sufficientlie at bed and burd during y^e space contenit in this indentur. The said Alex^r Borthwick his father furnishing him in y^e apparell of his body of lynning and wollen, decentlie, as becometh, and according to y^e estate of sic lik ane prentis; Likeas he and his father bindis and oblesis him to content and pay and per'ssue observe of yis present indentur by and attour y^e fulfilling of y^e same the soume of ane hundred pounds money of penaltie in case of contravention; And for the mair securitie all the s^d parties ar content and consentis this presentis be insert and registrat in y^e buikes of y^e hie Court of Justice or any other Judicatories buikes within yis nation to have y^e Strength of ane act and decreet of any of the Judges y^e of and y^e auctoritie interpone y^e to, with execution of horning, poinding and warding y^e one but prejudice of y^e other, and y^e horning to be upone ane simple charge of six days allenarie, and for registrating heirof, makes and constitutes their lawfull prors, &c. In witness quhairof this presentis written be Mr Alex^r Henrysone, proir fiscal to the town of Ed^r and clerk to the chirurgions of the same, ar sub^d be all the saids parteis day year and place for^d before yir witnesses Mr John Borthwick, Advocate, Walter Borthwick, merchant burgess of Ed^r, Mr Richard Cairnes of Pilmore and y^e s^d Mr Alex^r Henrysone.

(Signed)	J. A. BORTHWICK.
"J. BORTHWICK, Witness.	WILLIAM BORTHWICK. ¹
"WALTER BORTHWICK, Witness.	ALEX. BORTHWICK."
"A. HENRYSON, Witness.	
"R. CAIRNES, Witness.	

(B. p. 7, 11.)—EXCERPTS FROM THE OLDER RECORDS OF THE COLLEGE OF SURGEONS.

Penult day of Martii 1585. The quhilk day, in presence of Henrie Blyth, deakin of the chirurgiourie, with the maist part of the brethring, comperit personalie Alexander Rattray, barbour, and gaif in his supplicatioun, declarand thairin that he had offendit the said deakin and brethir as his supplicatioun bure: For the quhilk offence he submittit himself to the deakins will and brethir. The said deakin and brethir having red the said supplicatioun, and

¹ The apprentice was a relative of the master. He became a member of the Incorporation of Surgeons on 15th Nov. 1665, and married Marioun, eldest daughter of James Borthwick, 13th Jan. 1666.

therwith being reply [ripely] aduisit, decernis and ordanis the said Alexander to humell him self to the deakin and brethring, and ask thame forgevnes on his kneis, and of his awin consent bindis and oblesis him, that gif evir he fall in the lyk offence, to tyne his fredome of the craft; and therupon the said deakin tuik instrumentis befor the brethring above written.

5 March 1589. Mark Libertoun admitted a barber "to wit to cow, clip, schaipe and vesche." He was to use "na poynt of chirurgie vnder the pane of tynsell of his fredome." He obliged himself to make his "bancat [banquet] and do his dewitie when the brether pleisses"—"and ordanis the said Mark not to haif na signe of chirurgie in his bught nor hous, oppynlie or privatlie, sic as pigis, buists or chirurgane caiss or box pertening to the chirurganis."

At Edinburcht the sextene day of Julii 1591; anent the admissioun of simpill barbouris: The quhilk day the dekin and maisteris of the chirurgianis within the burght of Edinburcht, having speciall respect to the wellfare of our soneane lordis loiges, and decoratioun of thair craft, conforme to thair seill of caus, statutis and ordanis and be the tenour heirof has statutit and ordanit of thair vniversall consentis and assentis, for thame selfis and thair successouris, that all and quhatsumevir persone that salhappin to be maid maister and freman among thame in tyme cuming that is nocht abill and expert to abyde and goif ane sufficient tryall and examinatioun of his qualificatioun, science and eruditoun of the art of chirurgie, shall haif na ferdar libertie and privilege bot to clip, cow, schaipe and vesche, allanerie, without ony ferdar libertie or licence to vse and exerce or vther poyntis of the art of chirurgie; and ordanis all personis to be ressaute heirefter to subscriue this fairsaid ordinance at thair admissioun in maister and freman of the barbour craft, and to goif thair bodillie aith to observe and keip the samyn vnder the panis of periurie defamatioun and tynsell of thair fredome for euir.

30 March 1603. The quhilk day Williame Lawson is admittit to the fredome and libertie of ane barbour, viz. to kow, schave, wasche and to mak aquavitie allanerie: Lykeas the said Williame binds and oblesis him that he sall nawayis vse the arte of chirurgie within the libertie of this burght vnder the pane of tuentie pundis to be payit be him toties quoties incas he contraveine, and sall act him in the tonnes bukis heiro to vnder the pane fairsaid: For the quhilk admissioun, the said Williame hes payit twenty merkis in respect of his payment maid of befor.

20 March 1645. The quhilk day in presens of the deakin and maisteris of the chyrurgianes, to wott, Alexander Penycuik, David

Douglas, Johne Scott, Andro Walker, David Kennedy, James Ker, Johne Murray, James Borthwick, burges of this burgh, haueing presentit himself to be admittit ane master and frie chyrurgiane conforme to his supplicatioun gevin in thairanent of befoir, and thair-after dew tryell and examinatioun takin of his qualificatioun, they have found the said James sufficientlie qualefeit and therfor vpone favour and in respect he hes exersed the operations of chirurgerie, both at home and abroad, in service with some of the present maisteris, and, namelie, with the said Alexander Penycuik the deakin himself, he is admittit to be ane frie chirurgiane and barbour in and amang thame, nochtwithstanding of any actes maid heirtofair in the contrar, quha hes gevin his aith of fidelite, and that he sall observe, keep and fullfill all the poyntes of their seall of cause (except Idolatrie contenit thairin, and speciallie that poynt thair of anent desceting of anatomic for the farder instructioun of prentissis and servandis, and that he sall meantayne and defend the liberteis and privileges of their calling already quich they have, or that they sal-happin to obtene or purches heirefter: And doth accept in and vpone him to be officer till ane new intrant, and hes payit the soume of tua hundred pundis for his vpset to the box, togidder with the clerk and officeris feis: Wherupone this present act is maid and subscriuit be the clerk.

J. HENRYSOUN.

15 July 1647. David Kennedy and James Borthwick reported that they had taken as a house of meeting for the craft "thre rowmes of ane tenement of land in Diksone Close, for payment of fourtie poundis zeirlie."

17 July 1671. William Wood barber in Portsburgh transgressed his act of admission in working barber-craft within Heriot's Hospital, without the bounds of Portsburgh, and "als had proven disobedient to the deacon for quhich he was incarcerat within the tolbuith of Edinburgh, and that since his incarceration he persests maletiouslie in his disobedience without making appellation unto the calling: Therefore the saidis deacon, masters and brethren suspends the said William Wood from the exercise of his calling, and ordains his signe to be taken down during the callings pleasure."

17 July 1671. The quhilk day the deacon, masters and brethren of the Incorporation of Chirurgions of Edinburgh being convened, and taking to their consideration that David Pringle chirurgeon, one of their number, hes transgressed the acts of the calling in his employing infriemen to work in Heriot's Hospital quhich is within their liberties, and in pleading for William Wood barber who is

disobedient to the calling and who is incarcerat therefore, and in pleading and acting against the liberties and friedomes of the calling, and in being disobedient and refractory to the deacon and calling, and persists contumaciously therein: Therefore the said deacon, masters and brethren of the said Incorporation, ordains the said David Pringle to be incarcerat within the Tolbuith of Edinburgh for the causis forsaide, therein to remaine ay and while he give the calling satisfaction."

June 1678. John Rainald fined L.20 for bloodletting etc. before his admission as a surgeon.

(C. p. 9.)—THE CRISIS OF 1657. *Extracts from Records of the Town Council.*

1st June 1657. Appoints Thesr of the Counsell formerly nominat to continue of new again with the apothecars and Chirurgeons for assisting of them in their just right before the Council of state against the passing of the patent for the erection of the Colledge of Medicines (qu. Medicinars?)

19th June 1657. Compeared Patrick Hepburne, Samuel Hunter, Thomas Kincaid, David Kennedie and with others of the apothecars and Chirurgeon apothecars, and gave in the supplication under-written desyring the samen to be insert in the Counsell books and to have the Counsell's approbation thereof and some of the Counsell appoynted for concurrence conforme to the bill which the Counsell thought reasonable and ordained the samen to be insert, whereof the tenor follows Unto the Rt Hon^{le} the Provost Baillies and Counsell of the Burgh of Edinburgh the petition of the apothecars and Chirurgeon apothecars there humbly sheweth That where it has pleased your ws [worships] to imploy the Lord Provost your ws commissioner at London in defence of our just right and priviledge graunted and established be your ws for our favours whereby we have found the reall effects of his Lops paines for all which we acknowledge ourselfis bound in dewty to give you and his Lop heartie thanks and in conscience to maintain the said right in every poynt to the outmost of our power, and seeing we have to do with a strong pairtie who will labour to subvert our right so that it will be requisite to have the countenance of your ws assistance both in word and work as formerly without whose adyce and counsell we can not move our humble desyre to your ws is to appoynt some of your ws number to con-curre and assist us for the maintenance of our right befor his Highness Counsell where it now lyes seeing your Lops is so much concerned therein and our priviledges aforesaid aimed to be sub-

verted which we are so stricte tied and obleidged to maintein and your ws &c swa subcryves John Hamilton (J^r) Hepburne, Thos. Kincaid Ja. Borthwick J. Foulis David Kennedy, Neil Murdo Jas. Calander John Kennedy, Robt. Kennedy D. Scott Walter Turnbull Hew Neilsone William Hendry.¹ The Counsell having considered this supplication approves of the samen on all poynts and ordains the samen to remain in retentis for the warrand of the act and appoyntes Robert Murray baillie George Cleghorne and William Thomsons clerk to concurre with the comitte of the burrows and assist the petitioners before the Counsell of state and whatsumever other judicatrice in defence of the rights and priviledges of the Burgh and the apothecars and Chirurgeon apothecars their rights and priviledges against the patent of the doctors of medicine whereanent thir p^{nts} shall be their warrand.

(D. p. 17.)—ROBERT ELLIOT'S APPOINTMENT TO BE THE FIRST PROFESSOR OF ANATOMY.

Extract from the Surgeons' Records.

1st Feby 1705. The Deacon etc being convened and taking into their consideration certain proposals given in unto them be Robert Elliot one of their own number bearing that sundry of the Society were informed of a person now in this city that designed to apply to this society for their allowance and encouragement in the publick and privat teaching of anatomie, and for that end was to offer to them the giving of their apprentices and servants the benefit of public dissections and demonstrations yearly gratis, he having access to the bodies they have a right to, the use of their theatre and benefit of teaching their apprentices and servants in his private colledge—So after considering the designe of the forsaid gentleman the said Robert Elliot did humbly judge it would no less tend to the credit of this honourable boord to allow and appoint such of their own number as make the same offer especially seeing they have already begun it in their own persons, and for that end did offer his service this way, hoping the table would favourable construe of this his forward offer, and at the same time rather imputt it to a desire of preventing extraneous hands in meddling in their matters than any prospect that he can have in view this way—And if the calling shall be pleased to allow to the said Robert Elliot upon the fosaids conditions the benefit of these bodies spok of and their theatre for

¹ Kincaid, Borthwick, D. Kennedy, Robert Kennedy, and W. Turnbull, were Surgeons; the rest Apothecaries.

what is publick and the encouragement he may reasonable expect from their apprentices and servants in what he does in a private colledge he shall not fail (through Divine assistance) to give all possible care etc."

This offer was accepted on the terms expressed.

Extract from the Town Council Records.

29 Augt 1705. The same day anent the petition given in be Robert Elliot Chyrurgeon apothecary, burgess of Edinburgh SHEWING that whereas it being the practice of the best regulate cities to give encouragement to the professing and teaching of liberal arts and sciences for the education of youth to the great benefite and advantage of the place, and the petitioner by an act of the incorporation of the Chirurgeon-apothecaries of this city unanimously elected their public dissector of anatomie, the petitioner was of intention to make ane public profession and teaching thereof for instructing of youth to serve her majesty's lieges both at home and abroad in her armies and fleets which he hoped by the blessing of God would be ane mean in saving much money to the natione expended in teaching anatomie in forraigne places, beside the preventing of many dangers and inconveniencies to which youth are exposed in their travells to other countries; and the Petitioner finding this undertaking will prove expensive, and cannot be done without suitable encouragement, hes therefore laid the matter before the Council who have been always ready to give encouragement to such undertakings, and therefore craved the Council to consider the premisses and to remitt to ane committee of their number to hear and receive what proposals the petitioner had to make for setting up the said professione and to report as the petition bears; which being considered be the Council they remitted the consideratione of the same to ane committee of their own number, who accordingly reported that they having considered the above petitione were of opinion that the professione of anatomie was very necessar and usefull to the natione and might be very helpfull to the youth that follow that art, and might prevent much needless expenses spent by them abroad; and in regard the petitioner was by the Incorporation of Chirurgeons unanimously chosen for that effect, therefore the Committee were of opinion that the petitioner should have ane yearly allowance of what soume the Council should think fitt towards the encouragement and defraying his charges and expenses theranent with the express provisione and conditione that the petitioner take exact notice and inspectione of the rarities in the Colledge, and that ane exact inventar be made of the same and given in to

the Council—And also to keep the said rarities in good order and condition during the said allowance as the report under the hands of the Committee bears: which being considered by the Council they with the extraordinary deacons approved thereof and for the petitioner's encouragement to go on in the same profession they allow the petitioner fifteen pound sterling money of yearly sallarie, and appoints the present and succeeding colledge Treasurers to pay the same to him termly, beginning the first term's payment thereof at Candlemas next to come, and thence forth termly thereafter during the Council's pleasure upon the provisione and conditione always mentioned in the said report.

(E. pp. 17, 18.)—DRUMMOND AND M'GILL.

While correcting the proofs, I have received some interesting information regarding Drummond. He was one of the Drummonds of Megginch, an old and well-known Perthshire family. His father was Adam Drummond of Megginch, a privy councillor of Scotland, and (1695) one of the commissioners to inquire into the massacre of Glencoe. His mother was Alison, daughter of John Hay of Hays-toun, and he is himself designated¹ Adam Drummond of Binend. His wife's name was Margaret Spittal. Their daughter Elizabeth married James Stuart of Dunearn, great-grandson of the third Earl of Moray, and chief magistrate of Edinburgh in 1764 and 1768. Dr Charles Stuart of Dunearn, who lived in George Square about 35 years ago, was a son of that marriage, and the father of several sons and daughters. His eldest son, James Stuart of Dunearn, W.S., a well-known citizen of Edinburgh, died childless in 1849. There are numerous living descendants of the Doctor, from some of whom, and especially from Dr Charles Stuart of Chirnside, and George Burnett, Esq., Advocate, my information regarding the family of Adam Drummond is chiefly derived. George Drummond, the Lord Provost, whose bust by Nollekins adorns the Hall of the Royal Infirmary, is asserted by Bower² to have been nearly related to Adam Drummond, but I have reason to think this statement to be inaccurate. There are no living descendants of Adam Drummond who bear his name.

Drummond was the Chairman of the Surgeons in the two years succeeding to Michaelmas 1748. He was alive on 21st February 1759, but his name is not found in a list on the 16th May following.³ He therefore probably died between those dates.

¹ On the authority of George Home Drummond, Esq., younger of Blair Drummond.

² Vol. II., p. 185.

³ Records of the Surgeons.

I have not been able to trace the family of M'Gill. But I refer my readers to the old Edinburgh Medical Essays [Vol. II., and V., Part 2] for unequivocal evidence of his enterprise as a practical surgeon and operator.

(F. p. 22.)—The lithograph from Mr Rhind's drawing represents the Hall as it was a century ago. About 100 feet in front of it is seen a gate in a screen-wall, which is terminated by two edifices often mentioned in the minutes as the "pavilions." The west pavilion was sold, 19th January 1778, for the uses of the High School. Neither pavilion existed in my time. The area inclosed by the screen received the name of Surgeons' Square when buildings had been erected on its east and west sides. On the west stood the Hall of the Medical Society, and, immediately to the south of it, the Anatomical Theatre of Dr Barclay. The east side was chiefly occupied by private dwellings, only one of which remains. To the south-west of the west end of the Hall, stood, in a recess, Dr John Thomson's class-room. To the south-east of the east end of it, there yet stands a house which was for some time the class-room of Mr John Bell, the eminent surgeon. The whole area of Surgeons' Square, once the property of the College, is now that of the Royal Infirmary. Part of the second or Flodden city wall is seen in the background. The sides of the Hall for the meetings of the College, in the building of 1697, were finished with oak, which, cut into smaller pannels, now adorns the Committee-rooms of the Hall in Nicolson Street. The sculptured stones, seen under the two round windows in the lithograph, are now to be seen in the front of the Medical Lecture Rooms belonging to the College, immediately behind their Hall. The lower tier of windows and doorway are unchanged. Everything above them has been altered. The silver badge worn by the officer is 162 years old, having been ordered on 18th March 1698.

(G. p. 22.)—PLACES OF MEETING OF THE SURGEONS PRIOR TO 1697.

In very ancient times the incorporation was in the habit of assembling in the house of the Deacon.¹ On the 15th July 1647, they hired premises "in Diksone close, for L.40 yearly."² On the 18th May 1669 they came to the resolution to build a "convening-house;" and it is probable that, when the Hall of 1697 was constructed, some part of that older Hall was incorporated with it; for in the resolution to build already quoted, the word "rebuild" is

¹ See Records of Surgeons, 26th September 1591.

² See ante, page 30.

employed; and the words "build, *repaire*, and have in readiness," quoted from the Town Council resolution of 1694,¹ point to the same conclusion. It is also certain that "the old convening house," wherever situate, was in existence at a later date.² In some of the remaining windows of the east end there is a difference in the style of the finishing, which makes it probable that these belonged to the old convening house.

Excerpts from Records of College of Surgeons in regard to the Erection of the First "Convening House."

18th May 1669. The quhilk day, in presence of Thomas Carter, Deaken, Alexander Penycuik, James Borthuik, Thomas Kincaid, James Clelland, Walter Trumble, David Pringle, Adam Darling, George Scot, John Forest, Samuel Cheslie, John Joyssie, Hew Broun, William Borthuik, James Ogelbie, being convened in their meeting house, and it being proposed by the deaken quhat they wold do anent the building of their convening house, they do voluntarie offer each of thame vnanimonslie to gif and lend ane hundreth pundis to be imployd thairvpon, and withall ordanes the deaken to convene the remanent members of the calling that ar absent at this meeting, with thess that ar heir mentionat, and to require and desyre of thame to do the lyk, and that the deaken go speidlie about this bussines, to the effect the house may be put up this yeir now efter so long delay, and thess that gevis sall haue their names put vp, and thess that only sall lend sall not have their names set vp but their money restoirod when the calling may convenientlie do so without entres.

25 May 1669. The sederunt of this day meeting with thess that wer formerlie meat of the aughtene of Mail of that sederunt, doeth all vnamouslie agrie, except William Temple, to gif or lend each of thame ane hundreth pundis vpon the conditiones and provisiones contened in the act of the aughtene of mail, provyding alewayes everie one of the members of the calling ather gif or lend, and therfor the calling now ordanes the deaken with M^{rs} to convene thess that ar absent both in this sederunt and the former one to sei iff they will assent or dissent to geving or lending, as wes formerlie proponit, and to that effect to wryt to Andro Broun to know his mynd theranent, and the deaken and members to report to the calling at the nixt meeting quho ar disasenteris and impederis of this work, and their names to be set doune in the buik to the effect they may be knownen.

¹ See page 17 ante.

Records of Surgeons, 4th March 1707.

THE PROPORTIONS

OF THE

HUMAN FIGURE.

With Six Illustrative Outlines.

BY

JOSEPH BONOMI, SCULPTOR,

FELLOW OF THE ROYAL SOCIETY OF LITERATURE;
AND MEMBER OF THE SYRO-EGYPTIAN SOCIETY.

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PREFACE.

IN the present treatise on the Proportions of the Human Frame, the text of Vitruvius is given as it appears in the best editions, the translation into English is that of the late Professor of Architecture at the Royal Academy,¹ amended from the Italian of Leonardo da Vinci; so that there is nothing new or original, but perhaps the idea of attributing them to the celebrated Canon of Polycletus.

JOSEPH BONOMI.

LINDSEY HOUSE, CHELSEA,
October, 1855.

¹ Wilkins' *Vitruvius*, London, 1812.

THE PROPORTIONS

OF

THE HUMAN FIGURE.

VITRUVIUS POLLIO, a celebrated architect, who lived about the beginning of our era, and wrote a treatise on architecture, has preserved in that work a Canon of the proportions of the human frame, which he states was used by all the famous painters and sculptors of antiquity, and by which they attained great excellence, and acquired great and lasting praise.

We have abundant proof that the painters and sculptors of Egypt did follow certain predetermined rules in the execution of their paintings and sculptures, because the lines¹ marking the divisions prescribed by the Canons then in use,² are very commonly found on unfinished works, and are sometimes to be detected under the paint, in finished paintings and

¹ Sir G. Wilkinson's *Materia Hieroglyphica*. Page 113. Malta, 1825.

² Three different Canons are described by Dr. Lepsius as having been used by the ancient Egyptians, delineations of which are to be found in the great work on Egypt now in course of publication by the Prussian Government. "One belonging to the most ancient Pharaonic Monarchy; another later than the Twelfth Dynasty, when Thebes first began to flourish; a third, which appears at first, in the time of the Ptolemies, with an entire alteration in the principle of the division, and which remained unaltered till the time of the Roman emperors. The last is the same which Diodorus expressly mentions in his First Book." — *Letters from Egypt, Ethiopia, and the Peninsula of Sinai*, by Dr. R. Lepsius. Translated by L. and F. B. Horner. H. G. Bohn, London, 1853.

statues. We likewise possess, in our National Collection,¹ an ancient tablet, on which is preserved an outline exhibiting the Canon of the proportions of the human frame, in use among the painters and sculptors of that country in the age of Amunophth III., about 1250² years before our era.

The Canon, however, which is preserved in the third book of the treatise on Architecture by Vitruvius, has not, in modern times, received the attention it deserves, partly—it is conjectured—from some obscurity in the text, and partly, from the very unsuccessful attempts at a delineation of the human figure by way of illustration, in some of the older editions. There exists, however, in the library of the Academy of Venice, a drawing³ by Leonardo da Vinci, and a translation into Italian by that celebrated artist, of that part of the treatise of the ancient architect, which clears up the obscurity in all the existing editions, in a way that makes it probable that Leonardo must have had access to some copy of Vitruvius which has not come down to our time.

On comparing this Canon with the proportions of the Greek statues, and with the Egyptian Canons above referred to, it will be seen that Vitruvius has handed down to us, not only the most comprehensive system of the proportions of the human frame, but in all probability, the celebrated Canon of Polykletus.

¹ British Museum Catalogue. Page 333.

Crystal Palace Handbook of the Egyptian Courts.

Lepsius's *Auswahl der wichtigsten urkunden Egyptischen alterthums*.—*Lepsius*, bei Georg Wigand, 1842.

Gallery of Antiquities. Plate 33. Selected from the British Museum, by F. Arundale, J. Bonomi, and S. Birch. John Weale, London.

² Samuel Sharpe's *Chronology and Geography of Egypt*. Moxon, London, 1849.

³ *Disegni di Leonardo da Vinci*. Milano, 1830.

Vit. Lib. iii. cap. 1.

Corpus enim hominis ita natura composuit uti os capitis a mento ad frontem summam et radices imas capilli esset decima partis: item manus palma ab articulo ad extremum medium digitum tantundem: caput a mento ad summum verticem octava: tantundem ab imis cervicibus¹: ab summo pectore ad imas radices capillorum sexta²: ad summum verticem quarta³. Ipsius autem oris altitudinis tertia pars est ab imo mento ad imas nares: nasus ab imis naribus ad finem medium superciliorum tantundem: ab ea fine ad imas radices capilli, ubi frons efficitur, item tertia partis. Pes

Nature, in the composition of the human frame, has so ordained that the face from the chin to the highest point of the forehead whence the hair begins, is a tenth part of the whole stature; the same proportion obtains in the hand measured from the wrist to the extremity of the middle finger. The head, from the chin to the top of the scalp, is an eighth.

From the top of the chest to the highest point of the forehead is a seventh.² From the nipples to the top of the scalp is a fourth³ of the whole stature. If the length of the face, from the chin to the roots of the hair, be divided into three equal parts, the first division determines the place of the nostrils; the second the point where the eyebrows meet.⁴ The

¹ This sentence is quite irreconcilable, and not found in the translation of Leonardo da Vinci: it is therefore omitted in the English.—J. B.

² Vitruvius has "a sixth," but Leonardo a seventh.

³ *Dal di sopra del petto al nasimento dei capelli sia la settima parte di tutto l'uomo*.—LEONARDO DA VINCI.

From the top of the chest to the top of the head is a sixth.

Both these measures determine the length of the neck. In adopting this last measure there would be the seventh part of an inch less in the length of the neck of a statue ten feet high than in adopting the former.—J. B.

⁴ *Dalle tette al di sopra del capo sia la quarta parte dell'uomo*.—LEONARDO DA VINCI.

⁵ The ear likewise is a third of the length of the face.

Le parti che si trovano fra il mento, il naso, il nasimento dei capelli e quel di sopra ciascuno spazio per se è simile al orecchio, il terzo del volto.—LEONARDO DA VINCI.

vero altitudinis corporis sextæ.¹
cubitus² quartæ: pectus³ item
quartæ.

Reliqua quoque membra suos
habent commensus proportionis,
quibus etiam antiqui pictores et
statuarii nobiles usi magnas et
infinitas laudes sunt assecuti.

Item corporis centrum medi-
um naturaliter est umbilicus.
Namque si homo collocatus fue-
rit supinus, manibus et pedibus
pansis, circinique collocatum
centrum in umbilico ejus, cir-
cumagendo rotundationem utra-
rumque manuum et pedum digiti
linea tanguntur.

¹ Il piè sia la settima parte del uomo.—LEONARDO DA VINCI.

The foot in the best antique statues is usually more than a seventh and less than a sixth.—J. B.

² That is to say, from the elbow to the end of the middle finger is a fourth.
Dal gomito alla punta della mano sia la quarta parte.—LEONARDO DA VINCI.

³ "Chest," i.e., the width of the shoulders across the chest.—J. B.

La maggior larghezza delle spalle contiene in se la quarta parte dell'uomo.
LEONARDO DA VINCI.

Most statues exceed one-fourth in this dimension, and Leonardo's expression, "contiene in se," would seem to imply that at least a fourth of the whole height was contained in the greatest width of the shoulders.—J. B.

This measure depends so much on the character of the statue that it is subject to great variation, as well as all the other transverse dimensions of the human frame.—J. B.

N.B.—This is (the only measure of width given in this ancient canon).—J.B.

The quotations from Leonardo da Vinci are given in the orthography of the document preserved in the Academy of Venice.

⁴ This is only conditionally true, for unless a man of just proportions raise his arms so that the extremity of the middle fingers touch a line even with the top of his head ("che colle lunghe dita tu tocchi la linea della sommità del capo")—LEONARDO DA VINCI, and so far expand the lower extremities that he lose $\frac{1}{4}$ th of his height; or, that in the space between the expanded lower extremities

foot is a seventh¹ part of the
height of the entire frame; the
cubit² and the chest³ are each a
fourth.

The other members have cer-
tain affinities which were always
observed by the most celebrated
of ancient painters and sculptors,
and we must look for them in
those productions which have ex-
cited universal admiration. . . .

The navel is naturally the
central point of the human body;
for if a man should lie on his
back with his arms and legs ex-
tended, the periphery of the circle
which may be described about
him, with the navel for its centre,
would touch the extremities of
his hands and feet.⁴

Non minus quemadmodum
schema rotundationis in corpore
efficitur, item quadrata desig-
natio in eo invenitur. Nam si
a pedibus imis ad summum caput
mensum erit, eaque mensura
relata fuerit ad manus pansas,
invenietur eadem latitudo uti al-
titudo, quemadmodum arces, quæ
ad normam sunt quadratæ. . . .

Nec minus mensurarum ra-
tiones, quæ in omnibus operibus
videntur necessarie esse ex cor-
poris membris collegerunt, uti
digitum, palmum, pedum, cubi-
tum, et eas distribuerunt in per-
fectum numerum quem Græci
reducunt.

The same affinities obtain if
we apply a square to the human
figure; for, like the contiguous
sides, the height from the feet to
the top of the head is found to
be the same as the distance from
the extremity of one hand to the
other, when the arms are ex-
tended. . . .

¹ The standards according to
which all measurements are
wont to be made, are likewise
deduced from the members of the
body; such as the digit, the palm,
the foot, and the cubit; all of
which are subdivided by the
perfect number which the Greeks
call Teleios.

It may be necessary to remark, that the outline drawings,
in illustration of the subject, are what may be called geo-
metrical delineations of the human figure. Those who are
acquainted with the laws of optics, know that it is impossible
to have such a view of any solid object, nevertheless the
architect finds it necessary to design such a view of the build-

may be drawn an equilateral triangle, the periphery of the circle having the
navel for its centre, will not touch the expanded extremities.—J. B.

"Se tu appoi tanto le gambe che tu copri dal capo $\frac{1}{4}$ th della tua altezza."

The MS. of Leonardo has $\frac{1}{4}$ th in ciphers, which I take to be a mistake for
 $\frac{1}{4}$ th, particularly as $\frac{1}{4}$ th agrees more nearly with his own diagram accompa-
nying his translation.—J. B.

¹ Leonardo da Vinci begins his translation with this clause, which in all the
existing editions of Vitruvius follows the description of the proportions. He
then proceeds with the application of the circle to the human frame, but first
determines the elevation of the arms and the expansion of the lower extremities,
(without which conditions the test or application of the circle would be vain).
Nevertheless, no existing edition of the author contains them. Then follows
the application of the square to the human frame, and afterwards the enumera-
tion of the minor divisions, with others, which will be found in the description
of the diagrams accompanying this treatise.—J. B.

ing he is about to erect, in order to proceed with its construction, so in like manner the sculptor should be acquainted with the geometrical elevation of the human figure, in order to proceed with the construction of the model of his figure, and so likewise the painter should be acquainted with its real proportions, in order to represent them as they appear to the eye in perspective.

DESCRIPTION OF DIAGRAM I.

The Diagram I. is constructed according to the proportions laid down in the text of Vitruvius, with some additional divisions given in Leonardo da Vinci's translation, which are marked by the horizontal lines that divide the square into four equal spaces. The first, beginning from the bottom, determines the length of the leg, which it crosses at the top of the tibia. The second determines the length of the thigh, crossing the body at the bottom of the pubis. The third line crosses the chest at the centre of the nipples, and the fourth touches the top of the scalp.

The perpendiculars determine the length of the cubitus or forearm, and the hand; the former will be found to be a fourth, and the latter a tenth.

The scale at the base of the diagram shows those divisions alluded to in the last clause of the text, which are by nature distributed¹ in the following manner—viz., four digits or fingers, make one palm; four palms, one foot; six palms, one cubit; four cubits or twenty-four palms, the entire height of the man; and four cubits also make one pace² (fathom). These divisions constitute the human edifice.³

¹ Sono della natura distribuiti.

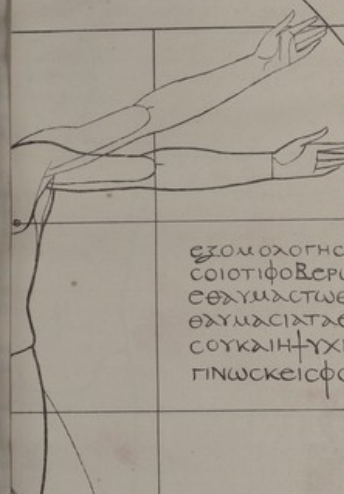
² Quattro Cubiti fa un Passo.—LEONARDO DA VINCI.

Ancient cubits. { The royal Egyptian cubit, inches . . . 20.675
The ordinary Egyptian cubit, inches . . . 17.722
Samuel Sharpe's *Egyptian Inscriptions*.
Mexico, London, 1849.

³ E queste misure sono, i suoi edifici.—LEONARDO DA VINCI.

ONS
CURE

DIAGRAM I.

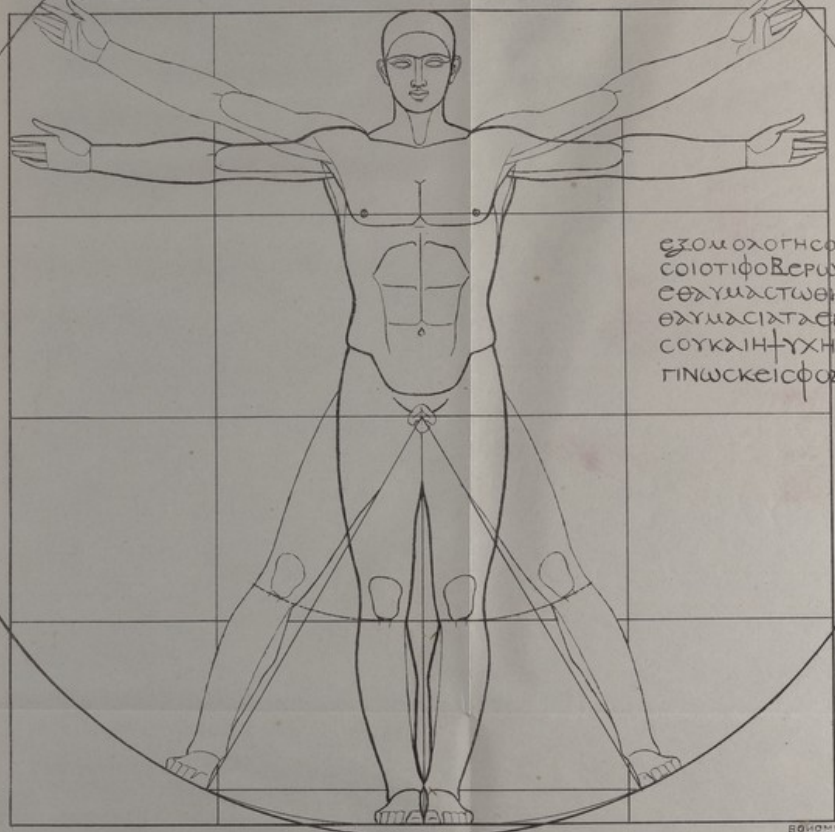


THE PROPORTIONS OF THE HUMAN FIGURE

DIAGRAM I

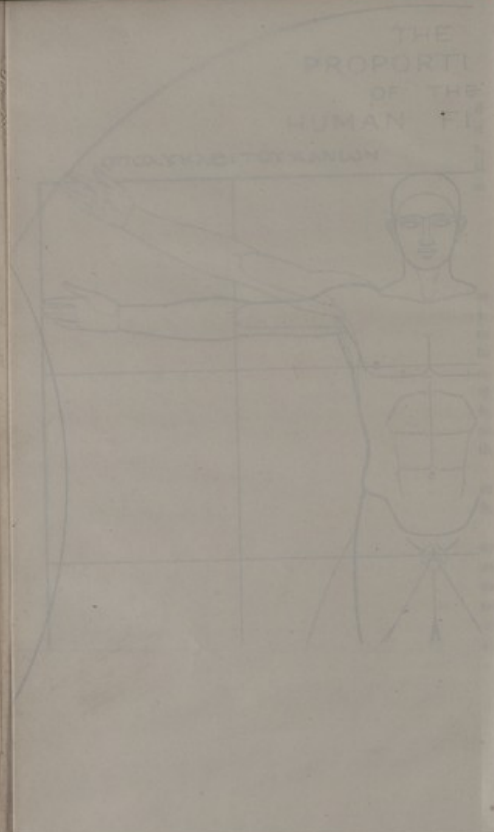
ΟΠΟΛΥΚΛΕΙΤΟΥ ΚΑΝΩΝ

ΕΞΟΜΟΧΟΓΗΣΟΜΑΙ
 ΟΙΟΤΙ ΦΟΒΕΡΩΣ
 ΕΘΥΜΑΣΤΩΘΗΣ
 ΕΘΥΜΑΣΙΣΤΑΣΕΡΓΑ
 ΟΥΚΑΙ ΗΓΧΗΜΟΥ
 ΓΙΝΩΣΚΕΙΣΦΟΡΑ



24 INCHES 1 CUBIT

DEL BY LITH.



It will be observed there is no such division in this ancient Canon, as that adopted by Audran, Clarac, and all modern artists—viz., that of the head into four equal parts, and those parts into twelve minutes; for in fact, no such division exists, the head being an eighth of the whole height, and the face a tenth of the whole height, nevertheless the scale may be applied, for each digit is equal to four minutes, and consequently three digits are equal to one part, and therefore twelve digits or three palms are equal to one head, or one-eighth of the whole height.

It will also be observed, that all the measurements of these ancient Canons, except that of the shoulder, relate to the longitudinal dimensions of the human frame, the transverse differ very considerably in every individual, and must depend on the character of the figure intended to be represented.

Three other measurements of the figure, which are marked by lines and letters on the centre figure of Diagram II., are very constantly observed in almost all the antique statues, which are nearly in the erect position—viz.,

From the heel under the inner ankle to the top of the patella, and from thence to the navel, are each equal to the distance from the pubis to the top of the chest.

Also from the same point at the heel to the middle of the patella, and from thence to the superior spinous process of the ilium, are each equal to the distance from the crest of the pubis to the top of the chest. From the bottom of the inner ankle to the top of the patella, and from thence to the spinous process of the pelvis, are equal to the distance from the acromium of the scapula on the lengthened side of the body. These three measures are very important, as they determine the great divisions of the whole figure. Perhaps they will be more intelligibly expressed by the letters of reference in the following way:—

From A to B
B to C
D to E are equal to each other.

From A to F
 F to G
 H to E are equal to each other.
 From J to B
 B to G
 K to L are equal to each other.¹

DIAGRAM II.

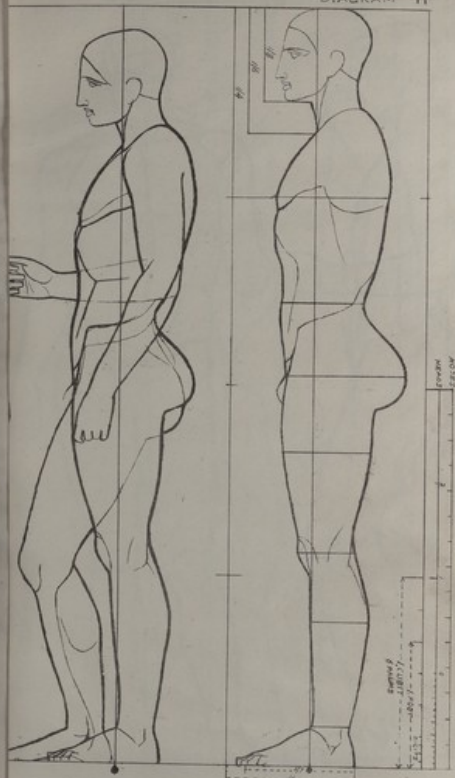
This diagram consists of five geometrical delineations of the human figure, two in the perfectly erect position; and a front view and two profiles of the same figure, standing at ease; that is to say, the whole weight of the body thrown on one leg. It will be seen by the application of the centre scale, at the right of the diagram, that in this ordinary position of antique statues, one-fourth of a head is lost in the height of the figure by the curvature of the spine and the obliquity of the leg, without any alteration in the size of the head, and thus it is that a statue is said to be seven heads and a half, when in fact the head may be an eighth.

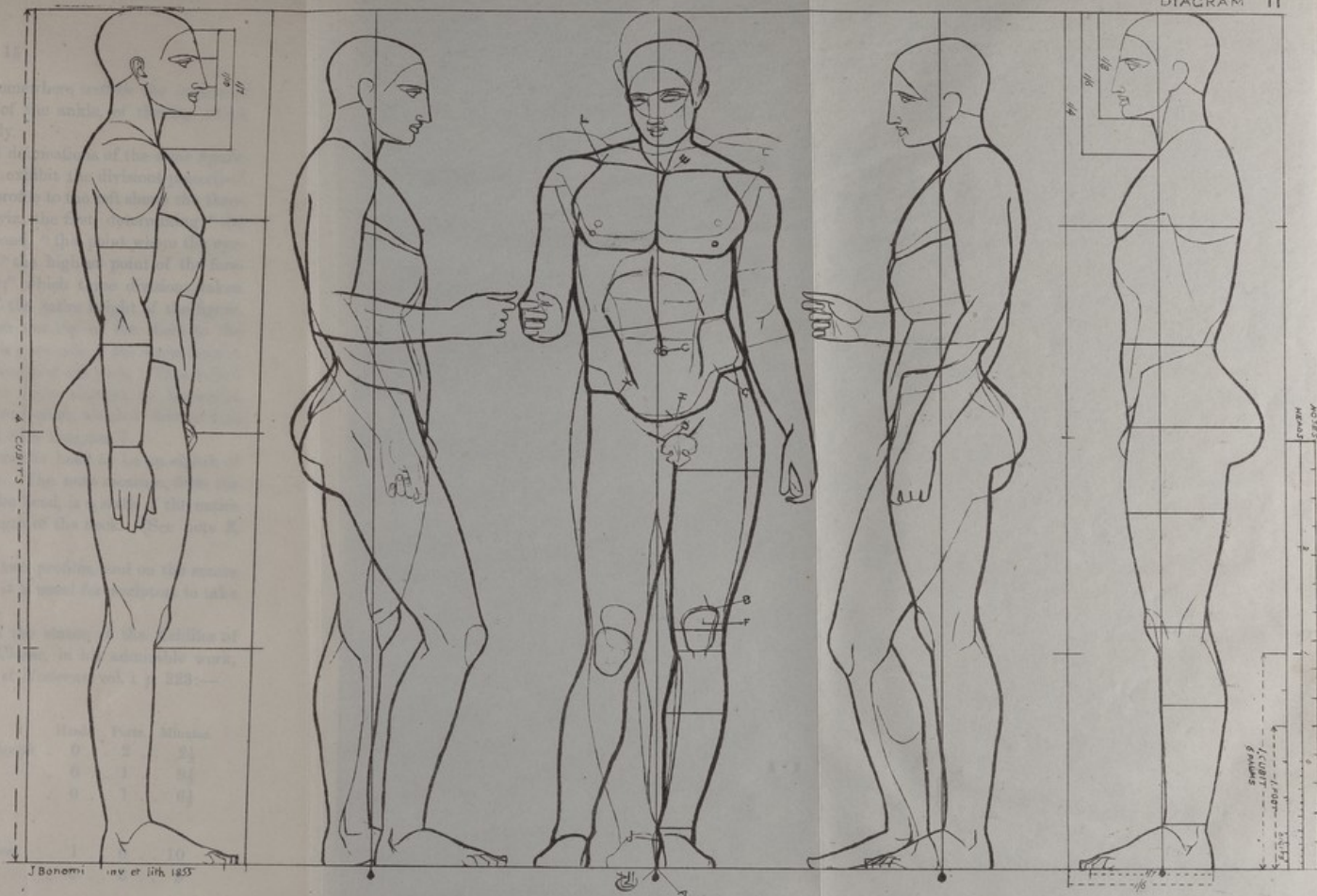
The profiles of the figure standing at ease exhibit, in faint lines, the opposite sides of the figure, so that the change that takes place in the corresponding parts of the body, by reason of the position, can be more readily appreciated by the student.

The faint lines in and about the thick outline of the centre figure represent the same figure in the perfectly erect position; and it will be observed, that where, on one side, this figure exceeds the outline of the other, there is a corresponding loss on the opposite side. The centre of gravity of the erect figure is marked by the perpendicular line, which passes through the pit of the neck, and falls exactly between the ankles. In changing from the erect position to that of standing at ease, the centre of gravity passes from between

¹ The last divisions are given by Flaxman; the former by M. Clarac.

DIAGRAM II





the ankles, and should fall somewhere *within* the outline of the inner ankle and centre of the ankle, of the leg which sustains the weight of the body.

The two profile geometrical delineations of the same figure, in the perfectly erect position, exhibit the divisions prescribed by the ancient Canon. The profile to the left shows the three equal divisions of the face—viz., the first, determining "the place of the nostrils;" the second, "the point where the eyebrows meet;" and the third, "the highest point of the forehead, whence the hair begins;" which three divisions, taken together, constitute a tenth of the entire height of the figure. The next measure taken from the top of the chest to the highest point of the forehead, is a seventh of the entire height. This measure determines the length of the neck. Then follow the four great divisions of the figure marked by horizontal lines proceeding from the perpendicular, which is divided into four equal parts, in accordance with Diagram I.

The profile to the right shows the head to be an eighth of the entire height of the figure. The next measure, from the top of the chest to the top of the head, is a sixth of the entire height, and determines the length of the neck. (See note 2, page 9.)

The horizontal lines on the two profiles, and on the centre figure, mark the places where it is usual for sculptors to take the dimensions of their statues.

The following dimensions of the statue of the Achilles of the Louvre are given by M. Clarac, in his admirable work, *Musée de Sculpture Antique et Moderne*, vol. i. p. 223:—

Profile to the left.	Heads.	Parts.	Minutes.
Across the centre of the biceps	0	2	2½
At the second line	0	1	9½
At the third line	0	1	6½

Profile to the right.

The deepest part of the chest	1	0	10
Across the loins	0	3	9

	Heads.	Parts.	Minutes.
Across the gluteus	1	0	7
" " middle of thigh	0	3	5
" " " knee	0	2	1
" " " calf	0	2	4
" " ankle	0	1	8

Front view.

Across the shoulders	2	0	8
" " thorax	1	2	1
" " narrowest part of waist	1	1	6
" " widest part of thigh	0	3	2
" " middle of knee	0	1	11
" " below the knee	0	1	9
" " middle of calf	0	2	2½
" " ankle	0	1	4

Arm, front view.

Across the middle of the biceps	0	1	8
" " widest part of fore arm	0	1	10
" " " " wrist	0	1	0½

By a part, M. Clarac means the quarter of a head; and by a minute the twelfth of a part.

THE END.

CLINICAL AND PATHOLOGICAL NOTES

ON

PERICARDITIS.

BY

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Drawn from PRESERVED SPECIMENS

On stone by Neil Stewart.

"W. & M. Jackson, Lith. N.Y."

ON PERICARDITIS.

THE object of the following paper is not to attempt anything like a systematic exposition of the extensive subject indicated in its title; but to bring under the notice of the busy practitioner a few results of observation, to which it seems more than ordinarily important to secure his best attention. I shall, therefore, carefully abstain from accumulating many details; and if I shall thereby appear at times to treat doubtful points a little too dogmatically, I trust the reader will do me the justice to believe that I am commonly embracing in my own view a much more considerable field of experience than I shall be enabled to bring before him in proof of my positions. The very nature of pericarditis, its obscurity of diagnosis in some cases, whether from the insidiousness of its invasion, or from its frequent occurrence as a complication of other diseases, precludes any attempt to render a complete statistical account even of hospital experience; and therefore I shall not claim for my observations the force which belongs to *numbered* instances, but shall be satisfied if my conclusions appear to be, on the whole, in accordance with the few illustrations I shall bring to bear on them, and also with fact and probability.

In carefully considering what has been written on the subject of pericarditis, as it has been my duty, for some years past, to do at least once a year in lecturing on *Practice of Physic*, various aspects of the subject have come gradually to appear to me as inadequately presented in many of our most approved text-books and works of authority. Of these, some refer to diagnosis, some to prognosis, and others to treatment. Under all of these heads, therefore, I shall find room for a few remarks.

I. *Diagnosis of Pericarditis.*

Three circumstances interfere with the accuracy and certainty of diagnosis in pericarditis, even where its presence may have been suspected, and where we have not, therefore, to accuse ourselves of any want of care in physical examination;—1st, Friction-sound may be absent, when pericarditis is present; 2d, Friction-sound

may be present, when there is no pericarditis; 3d. It is not always easy to recognise friction-sound (as distinguished from other cardiac murmurs) even when it is present, and distinctly heard by the ear. Let me enlarge a little on each of these sources of fallacy.

1. *Friction-sound is not necessarily present in pericarditis.*—I do not mean by this to assert that cases of pericarditis often occur in which no murmur of any kind is present from first to last; but only, that for purposes of diagnosis a murmur is not to be counted on. I am not sure, indeed, that absolutely latent pericarditis (so far as friction-sound is concerned) may not occur; at the same time, it is easier to believe, in a particular case, that we have missed the right moment—that the characteristic sound has been, or will be, there at some other time, than it is to suppose that the pericardial surfaces can have become rough and smooth again—that fluid and lymph effusion, and then adhesion, can take place—without any murmur at all. I am willing to suppose that the earliest period of pericardial effusion is not often, perhaps not ever, entirely devoid of friction-murmur. But what it is of practical importance to bring into strong relief is, that in the progress of pericarditis this most characteristic phenomenon may be absent for long periods in some cases, just as it may be present for long periods in others; that its presence and its absence bear no appreciable relation to the intensity of the disease; and that, therefore, you cannot practically make the diagnosis of pericarditis depend on the presence of friction-sound, nor can you gauge the pressure and extension of the disease by the amount and character of the murmur. This is surely a point of very great importance; and if I am correct in supposing that its importance is not fully brought out in the majority of works in the hands of our students and practitioners, it may be worth while to dwell upon it a little longer.

I think we may partially, but certainly not entirely, explain the singular diversities that occur in pericarditis as to the manifestation of friction-murmur. It is sufficiently obvious, and is indeed known to most auscultators, that the amount of fluid effusion has much to do with this. Once fairly established, the pericardial friction-murmur is less easily suppressed by effusion than the pleural; but only less easily. In the pericardium also, a really considerable effusion of fluid generally first muffles, then renders barely audible, and finally removes, the sound;¹ the friction-sound becoming indistinct as the

¹ Dr Mayne has published one, if not two cases, where this may reasonably be suspected. I have seen several in which the murmur was so very slight, that the total absence of it in other cases is not, to me, at all improbable. For Dr Mayne's paper, see *Dublin Journal of Medical Science*, vol. 7.

² It is curious, and strongly indicative of the insecurity of our knowledge of pericarditis, that two such excellent authorities as Dr Latham and Dr Walsh should be diametrically opposed to each other on this point. Dr Latham has seen "a few instances" only in which the murmur disappeared during the stage of effusion; the general fact being "that the murmur which is produced by lymph deposited upon the surfaces of the membrane, is neither abated, nor

heart's sounds are gradually extinguished, and, like the heart's sounds, continuing audible longest, and being recovered soonest, towards the base. But this is not nearly the whole explanation. For, on the one hand, I have heard friction-sound when there must have been pints of fluid in the pericardium; on the other hand, I have listened for it, and not heard it, when there were not very many ounces. The latter case has occurred to me so frequently, that I have no doubt it has also occurred to many other observers. I have observed several instances of it, so far as I can judge from merely clinical observation, within the last few months; and I shall presently give one very notable case, in which the fact was rendered quite certain by an examination after death. Of the persistence of friction-sound in the presence of very large effusion, one of the earliest cases of which I have notes, was a most prominent example. It occurred during the prevalence of scurvy in 1847, and was one of the very few well-marked examples I have seen of the form of disease called, by Laennec, hemorrhagic pericarditis. The patient was under the care of Dr Andrew.

R. L., a railway labourer, was admitted into the Infirmary on March 22, 1847, after an illness of eight weeks. He had first cough, afterwards dyspnoea, and latterly palpitations with uneasy sensations in epigastrium. On admission, there were all the signs of grave pericarditis. Cardiac dulness was from 4½ to 5 inches across, and extended as high as the second intercostal space. There was very marked friction-sound, most distinct over the lower sternum, indistinct both at base and apex. On March 29th, the dulness on percussion was much the same, friction-sound diminished. On April 10th, dulness, which had somewhat diminished, was as great as on admission; friction-sound faint, but still appreciable. After this, dulness appears to have increased, and friction-sound is not noted; it continued, however, as I distinctly remember, to be audible within a week of the patient's death, which happened on 23 May 1847.

On examination after death, the pericardium was found to extend from right nipple to an inch to the left of left nipple, and as high as the first rib. It contained nearly three pints of turbid, bloody serum. Surface of heart coated with shaggy prominent masses of tolerably firm lymph, of spongy consistence and red colour. Some of these masses were nearly half an inch in thickness, and united by bands to the opposite layer of pericardium. Both layers of the

abolished, nor otherwise altered in character by the serum effused within its cavity."—*On Diseases of the Heart*, vol. i., p. 130. Dr Walsh makes (and I think more correctly) a statement on this subject which is pretty nearly the converse of Dr Latham's proposition:—"The friction-sound of the past stage may be either completely gone (i.e., when there is fluid effusion); or heard in some spots about the great vessels; or pretty generally retained in the precordial region,—but this is very rare even with eight ounces of fluid, and it is scarcely possible with more than ten."—*On the Diseases of the Lungs, Heart, and Aorta*, p. 390. Dr Walsh also mentions the persistence of a local friction-sound with a large amount of fluid in some cases; of which he gives an instance very similar to the one recorded below. Dr Hughes goes to the opposite extreme from Dr Latham, and is undoubtedly incorrect, when he says that "the intervention of fluid between the roughened surfaces of the pericardium prevents their attrition, and most commonly removes the rubbing sound."—*Clinical Introduction to Auscultation*, 1854, p. 275.

pericardium, and also the left pleura, which presented firm adhesions, were covered with scattered milary granulations (tubercle?) in the midst of the fibrous deposit and lymph. No tubercle in lungs or other organs.

The precise amount of fluid effusion that existed in this case before the friction-sound was suppressed, can of course only be roughly estimated. But from the consideration that from the first there was dulness on percussion up to the second rib, and that the friction-sound was heard only a week before death, the course of the disease being protracted over three months, it seems probable that there was within half a pint of the quantity found on *post-mortem* examination, viz., three pints. The bands uniting the two surfaces no doubt contributed to maintain the friction-sound.

Another circumstance which greatly influences the production of friction-sound, is the amount and character of the exuded lymph. It needs no elaborate demonstration to show that a large amount of very rough lymph, adherent to both surfaces (as in the preceding case), will be more apt to produce a considerable rubbing-sound than a smaller quantity of lymph closely adapted to each surface of the membrane; or that lymph on the anterior surface will be more certain to produce audible friction-sound than a similar amount on the posterior surface of the heart. In the early stage of pericardial effusion it is probable, too, that a good deal of the lymph is unattached, or loosely attached, and that it is therefore shaken or churned about from one side to another. Hence, probably, the extremely rapid changes that take place in the character of the murmurs at this stage of the disease. Sometimes both the solid and the fluid exudation is of a singularly adhesive quality; at other times, it is little more than a thin serum with floating films of fibrin. All these circumstances, no doubt, modify the sound in an endless variety of ways. But still it remains a remarkable fact, that acute and general pericarditis, with only moderate fluid effusion, should sometimes be attended by so very little sound, or by none at all. The following case is a very striking one of the entire disappearance of friction-murmur, after it had been once recognised, and that without any appreciable increase, nay, even with diminution, of the fluid effusion:—

W. L., *et. 46*, was admitted into the Royal Infirmary, under my care, in the summer of 1854. He was considerably worn out by sickness, and had been complaining for some time of cough and dyspnoea, which obliged him to sit erect in bed. Soon after his admission the disease was recognised as pericardial and pleural effusion, and after carefully listening several times, a single friction-murmur was detected exactly over the fourth costal cartilage. This was heard by Professor Fleming, now of Birmingham, and by others who happened to visit the ward at the time, and to interest themselves in the progress of the case. None of us had any doubt of its existence, or of its being a friction-murmur; the situation, the character, the variations from day to day, and the coincident evidence of fluid effusion being regarded as conclusive. After being heard distinctly at several visits, however, the murmur disappeared; and although the patient continued several months under observation, it was never again heard. What was still more unexpected, was that the amount of effusion,

¹ See a marked instance of this in Latham, *op. cit.*, p. 128, foot of page.

as indicated by the dulness on percussion, instead of increasing, remained stationary, and finally diminished considerably before the patient's death, which happened in the beginning of November 1854.

The body was carefully examined. Both pleurae were found coated with tubercular lymph, and the lungs contained tubercles. The pericardium contained not more than six ounces of milky serum. Both its surfaces were covered with a thick coating of lymph, which had evidently been very rough, but of which several of the anterior projections were polished and rubbed away on their surface till they were as smooth as pebbles. (See Fig. 1.) To the finger this lymph felt extremely dense, not at all spongy; and it was arranged in the form of ridges and furrows, rather than of villousities. It was least rubbed on the sides and back part of the heart; most so over the right ventricle.

Nothing can be more striking than the evidence afforded by this case of the uncertainty of the diagnosis from friction-sound. Looking back on all the facts of the case from the point of view of the *post-mortem* examination, I presume that shortly before the patient's admission the period of exudation had ceased. The pericardium was then somewhat distended with fluid, and coated all over with soft, rough, spongy lymph, which, from its bulk and uneven surface, must have grated and rubbed at every movement of the heart. But this lymph must have rapidly condensed into firm granulations, and the parts of these most exposed to attrition must have become polished and rubbed away, so that, although no further effusion of fluid took place, the opposed surfaces gradually receded from each other, presenting fewer and fewer points of contact; and just as this process had reached the point of complete separation of the surfaces, the vanishing point of friction-murmur, the patient was brought under our observation. The diminishing power of the heart's beat probably also contributed greatly to this result. Had the patient recovered, it is very certain that friction-sound must have re-appeared; but it probably would have been of a very different quality from that first observed.

2. But to proceed to the next proposition. *The presence of friction-sound is not necessarily a proof of the existence of pericarditis.*—This sound proves, indeed, that there is something abnormal in the state of the pericardium or adjacent parts; but it neither shows the existence of active inflammation there, nor of any active morbid process whatever. It requires no lengthened argument, nor any considerable details of observations, to make it apparent that a condition of the pericardium like that represented in Fig. 11, must necessarily produce a very decided rubbing-sound. Such friction-sound will, moreover, be very permanent. It will be every way a most marked and typical example of the phenomenon: for the close approximation of the surfaces, the freedom of movement of the heart, the considerable degree of roughness, will all contribute

¹ *Explanation of the Plate*—The left hand drawing, Fig. 1, shows the granulations of fibrin, polished by continued friction, in the case of W. L. The right hand drawing, Fig. 2, shows a brush of organised fibrin projecting from the heart, such as must necessarily have caused a permanent friction murmur.

to its production; and the only natural termination of such a murmur would be in the absorption or polishing down of the lymph, neither of them processes likely to occur at all rapidly. I have repeatedly observed during life what I have believed to be permanent exocardial murmurs; and on several occasions, on which they had been accidentally observed during a fatal illness, I have had the opportunity of tracing them to their cause in such a loose floating piece of organised fibrous tissue as is represented in the plate. Sometimes they have been heard with the first sound only, sometimes with both sounds; occasionally they have strongly resembled endocardial murmurs. I need hardly say that they were unaccompanied by symptoms, or that the symptoms which accompanied them had a cause independent of the cause of the murmur. But imagine for a moment the confusion which might arise to diagnosis, were one of these rough villousities to exist in a person having a recent attack of acute rheumatism, or a somewhat hypertrophied or strongly acting heart. To the mere auscultator, who depends upon his ear, and not on his intelligence, such a case would almost certainly be interpreted as acute pericarditis; and to any one, however judicious and full of experience, it would be a startling, if not a perplexing case. Moreover, it is precisely in the rheumatically disposed that such chronic conditions are apt to occur.

It is commonly assumed by writers on pericarditis, that those curious and very common sequelae of disease, variously called "milk-patches" and "white lymph-patches," are practically soundless, as well as devoid of symptoms. This is a very convenient doctrine, and leads to great simplification of the subject of cardiac murmurs; but I am quite sure that it is not always in accordance with fact. On the contrary, although the paucity of symptoms in these cases is a great obstacle to their recognition during life, I have again and again detected, quite accidentally, over the cardiac region, murmurs which to the best of my knowledge and belief could have no other probable origin than these white patches; and I have in a few instances traced these murmurs also to their cause by a *post-mortem* examination, which has shown both the existence of the white patches, and the non-existence of any other recognised cause of murmur. Let any one, moreover, observe how very frequently slight, short, and ill-defined murmurs, especially with the first sound of the heart, may be discovered in perfectly healthy persons about the left border of the sternum,¹ at the level of the third and fourth intercostal spaces, or lower;

¹ Some such murmurs were probably included among those described as "xiphisternal" by Dr F. J. Brown. I have often thought it probable also that some, at least, of the murmurs heard over the pulmonary artery by Dr Latham in phthisis may have been exocardial. But I would not be understood to insist upon this as a complete explanation of the phenomenon described by that distinguished physician; nor can I profess to understand fully the distinctive characters of the "chisel-sound," as described by Dr Brown. See the *Association Journal* for May 1856, pp. 394 and 409.

let him study these murmurs in various positions of the body, and in connection with every known test of their character; and then let him study equally closely the habitual position, relations, degree of roughness, and general characters of the white patches, and I believe he will come to my conclusion, that these two classes of facts are in some degree related to each other. I do not assert, because I do not believe, that all murmurs in this situation are exocardial; still less do I believe that all white patches may be detected by the presence of such murmurs; but that many white patches, which are passed over as insignificant, and believed to be soundless, are attended with a certain degree of murmur, I have no doubt whatever.

Another element in the diagnosis of pericarditis which is usually stated much too absolutely, is the cessation of the friction-sound on the occurrence of adhesion. While I fully admit that this is often the case (and perhaps it will hold good, as a general rule, that all *well-marked* friction-sound ceases with the formation of adhesions), I believe it is very far from true that adhesion of the pericardium necessarily leads to the absolute suppression of murmur. Loose adhesions, indeed, I have oftener than not found to be associated with a degree of murmur; a murmur very different, it is true, from the friction of recent acute pericarditis in its most characteristic stage; but quite sufficiently resembling friction-murmurs in general to be readily suggestive to some persons of a recent attack of pericarditis. And that such murmurs may persist for a long time I have equally good evidence. I have watched them, in fact, in cases of old pericarditis, for months together, and lost them only on losing sight of the patient.

I hardly think that any hospital physician of experience will refuse to bear me out in the observation just made with respect to lax adhesions. Possibly the following remark may not meet with so ready an assent; but it is, nevertheless, no doubtful matter with me that, under certain circumstances, the most close and dense adhesions possible are compatible with the existence of distinct friction-sound.¹ For a long time I did not suppose this to be so, and accepted the common doctrine; but the following case can hardly be explained without a modification of it. The facts are so curious and important, that I give them at greater length than the preceding cases.

M. R., a dressmaker, *æt.* 27, and in wonderfully good condition of body considering the length of her illness, but of sickly appearance, and feeling very weak, was admitted to the Royal Infirmary, September 27th, 1855. Her history was as follows:—Two years before admission she had a severe cold, with much cough and spitting of blood, which continued for a month. She also felt pain in the left side, and considerable difficulty of breathing. Under the care of Dr Robertson, in the Infirmary, she underwent the operation of tapping on the left

¹ Dr Walshe refers to a somewhat similar observation. "It has appeared to me that sound is sometimes generated in layers of firm false membrane, though so perfectly agglutinated together that attrition or separation of the opposed surfaces is physically impossible."—*Op. cit.*, p. 255.

side, for a collection of fluid, on two occasions. In four months she was dismissed, being much better; but slight cough still remained, and about a year afterwards all her symptoms returned. Two months before admission she observed her feet to swell, and she began to have precordial pain, palpitation, and a peculiar sense of stuffiness in the chest, with occasional fainting fits and night sweats, under which symptoms she re-applied for admission.

On examination of the chest all the signs were found of a contracted left lung with excavation; and of disease also of the right apex. But the most striking phenomenon in the case was a loud friction-murmur heard at the base of the heart, over the upper part of the right ventricle. The heart's action was regular; the impulse strong; the apex beat in the fifth interspace, and there was no marked increase of the cardiac dulness on percussion.

After this the patient suffered many attacks of sinking or fainting, bearing a strong resemblance to angina pectoris, though not devoid of hysterical character. Vomiting also became a distressing symptom, and towards the end of November she had an attack of spitting of blood, which lasted several days. The appetite at the same time fell off; she became thinner, lost her sleep, and was evidently much exhausted. The catamenia were suppressed for three months before death, which happened on December 14th, 1853.

During the whole course of this fatal illness, from September to December, the murmur over the heart maintained its position and its essential characters with remarkable constancy. It was loud and rough with the first sound, very short and indistinct with the second. I frequently demonstrated it to pupils as a good example of a permanent friction-sound, probably caused by roughness or by very lax adhesions of the pericardium. When the action of the heart was feeble and fluttering, it was usually indistinct, but otherwise it was never at all difficult to make out. It was quite limited to the region indicated, over the upper part of the right ventricle and the pulmonary artery.

The following are the details of the *post-mortem* examination, transcribed with a little condensation from the very full and accurate report by Dr Haldane, the pathologist to the Royal Infirmary.

External Appearances.—Limbs fat and rounded. Fully an inch of fat in the subcutaneous cellular tissue of the abdomen.

Thorax.—The heart contained a good deal of blood, nearly all fluid; there were a few small loose, undecolorized clots.

The pericardium was found to be universally adherent over the surface of the heart. The adhesions consisted of a thin layer of cellular tissue, pretty readily broken down, but apparently of some standing.

The valves of the heart were quite healthy (*i.e.* free from deformity). The heart was enlarged; it weighed 13 oz. The left ventricle was a little dilated, its walls retaining fully their natural thickness. On the anterior flap of the mitral valve, and also in the commencement of the aorta, were one or two small, smooth patches of atheromatous matter. The muscular substance of the heart was pale, being of a reddish-fawn colour, and was softer and more friable than natural. There was a layer of fat, from a line to a line and a half or two lines in thickness, over the greater part of the surface of the heart. On microscopic examination the muscular substance of the heart was found to be in a very advanced state of fatty degeneration, the muscular striae having entirely, or almost entirely, disappeared, and being replaced by minute highly refracting granules and globules.

The left lung was universally and very strongly adherent. In removing it, a cavity in its external and lateral portion was broken into. The pleura was found very much thickened; at the apex it was converted into a fibro-cartilaginous mass, more than an inch in thickness; over the rest of the lung it was from half a line to two lines thick. The lung was compressed and contracted; its greatest length was 5½ inches, breadth 3½ inches. The upper lobe was most compressed. This lobe contained two or three small cavities a little larger than horse-beans, and lined by distinct membrane. The lower lobe con-

tained a large oval cavity about three inches in length, bounded only by the thickened pleura, and crossed by altered bronchi and vessels. There was a very little old tubercular matter, in the form of small granulations scattered here and there through the pulmonary tissue, which, though crepitant, was somewhat collapsed. The lower lobe was to a great extent occupied by the large cavity; otherwise its tissue was similarly affected.

In the right lung there was found a cavity at the apex, and one or two smaller ones in the upper lobe, with a good deal of tubercular matter, partly in the form of grey granulations, partly of yellow and softening tubercle. The lung was universally adherent, the adhesions fibro-cartilaginous at the apex.

Abdomen.—The liver and kidneys contained an excess of fatty granules in their epithelium; other abdominal organs normal.

We have arrived, then, at the conclusion, that chronic roughness of the pericardium of any kind, and under some circumstances adhesions, even when close and universal, may cause a distinct friction-murmur. Now observe the practical effect of these facts upon the diagnosis of acute pericarditis. We cannot safely assume that pericarditis exists, when we have discovered a friction-murmur, single or double; and least of all can we make this assumption safely, in the case of a rheumatic subject. The less distinct the murmur, the greater is the caution required in pronouncing it to be a murmur from acute disease; because the probability is the greater that it may have been an old murmur overlooked till now. In second or third attacks of pericarditis, the disentangling of old from new murmurs is a matter of still greater difficulty, nay, it is often an impossibility. It is only, therefore, when the murmur arises for the first time under observation, or when it accurately coincides with the development of symptoms, or where it corroborates and explains the symptoms and the other physical signs already existing in such a manner as to leave no doubt of its nature, that we are justified in assuming that a friction-murmur over the heart is pathognomonic of acute pericarditis. I shall have occasion to glance at this subject again in a subsequent part of this paper.

3. But the difficulties of diagnosis that attend friction-murmurs are not yet exhausted. For the distinction of *exocardial* from *endocardial* murmurs is not always easy, nor to be effected by the ear alone; it is, on the contrary, a matter requiring a really refined and intellectual diagnosis; one, too, in regard to which I believe no physician need be ashamed to confess that he has been occasionally mistaken.

This reflection is, with me, no new one. More than ten years ago, I was startled by hearing in public the diagnosis of an alleged case of pericarditis called in question by a physician who had given great attention to the subject of auscultation. The impugned diagnosis was defended on the principle, that it was impossible for a physician of considerable experience in hospital practice not to have learned exactly what a friction-murmur was, and what it was not. And, no doubt, this view concurs with the teaching of many of our manuals, which lay down with much more precision the fact of the distinction, than the mode in which the diagnosis is to be made; leaving

it to be inferred that the difference between the sounds is one which the ear can readily appreciate,—a mere *difference of sound*, in short; which may be heard, but cannot be talked about or reasoned upon. And such, I suspect, is still the way of thinking of many who take their impressions upon this subject from authority, without having had ample opportunities of correcting them at the bedside.

At the time the incident above-mentioned occurred, I was not without a misgiving, that the physician whose diagnosis was attacked in this case might possibly have failed to do justice to his own opinion, by not submitting it to a fuller analysis, and thereby being prepared to meet criticism on a different ground. This feeling has since been confirmed by numerous personal observations, and by the progress of clinical and pathological knowledge. Indeed, it is impossible, in the face of the carefully recorded experience of Dr John Taylor¹ and others, to deny the serious fallacies attaching to a mere *aural* diagnosis of pericarditis, as founded on the recognition of friction-murmurs by their acoustic characters. That these murmurs may be securely so recognised in some cases is, indeed, true; but in very many instances this is not so; and I have very little doubt that, in even the majority of cases where friction-sound is recognised, it is known to be such by the circumstances in which it occurs, rather than by the mere character of the sound itself. In other words, the recognition of the friction-sound, usually placed as the first step in the diagnosis of pericarditis, is often, in fact, the last; we recognise the sound as friction, because it accompanies the other elements of a diagnosis of pericardial exudation, instead of presuming pericardial exudation to exist, simply on the ground that we hear a friction-murmur. Let all who are disposed to think otherwise remember these facts:—1st, That the finest and most remarkably endowed ear in Europe, that of Laennec himself, must have again and again listened to the pericardial friction-murmur with all the advantage derived from the knowledge, personally worked out, of its pleural correlative—but that Laennec knew no distinction between the *bruit de soufflet* and the rubbing-sound in the pericardium; 2dly, that Dr Latham, who discovered the relation of the bellows-murmur to acute rheumatism in 1826, tells us that he observed and noted it for years, under the impression that it was produced in the pericardium, and without accurately distinguishing from it the less frequent and more characteristic murmur of attrition;² 3dly, that Dr Stokes, who was, unquestionably, the first physician in this country to make the distinction in question (though Bouillaud and Watson arrived at the same discovery independently), is even now most careful to avoid an un-

¹ See the admirable abstract of Dr Taylor's papers, in the *British and Foreign Medical Review*, vol. xxiv., p. 640.

² "I am now fully aware that, for a series of years, half the cases at least which I regarded as inflammation of the pericardium were in fact inflammation of the internal lining."—Latham, *op cit.*, vol. i., p. 123.

due reliance on the mere "acoustic character of the sound," which he regards as only one out of many means of diagnosis;³ 4th, that Skoda, the greatest living auscultator of Germany, expressly declares that he knows no sign by which, apart from a consideration of their rhythm, friction-sounds can be distinguished from endocardial murmurs.⁴ These circumstances are surely calculated to make us distrust the extreme facility with which this important subject is got over in many of our elementary works.

But it is not my purpose to enlarge on this general statement of a difficulty. My object is rather to illustrate, by one or two examples (for the complete discussion of the subject would be ample material for an entire paper), the circumstances under which the difficulty is most apt to occur.

It has occurred to me frequently to observe cases in which murmurs heard *exclusively at the apex of the heart* were probably exocardial, while presenting most of the characters of the mitral murmur. In the following case this difficulty presented itself in a well-marked form, and led me into error for a time, although the error was soon corrected.

H., a tailor, rather slender and delicate looking, was first brought under my notice in the autumn of 1852. He was sent into the Royal Infirmary by Dr J. D. Gillespie, whom he had consulted at the New Town Dispensary the preceding day. He was found to be labouring under symptoms of old-standing cardiac disease—*viz.*, palpitation, dyspnoea, oppression. The action of the heart was hurried and preternaturally strong. There was an obscure thrill communicated to the precordial region, and, on auscultation, a pretty distinct though not very prolonged murmur was heard at the apex, interposed between the second and the first sound of the heart. (I regarded the murmur as diastolic, *i. e.*, following the second sound; but, having frequently observed it since that time with more care as to its exact rhythm, I now believe it to have been then, as it certainly was afterwards for long periods together, a murmur slightly anteceding the first sound—*i. e.*, a presystolic rather than a diastolic murmur.) There was no dropsy, and no lividity. The first sound was muffled, the second distinct, and, I think, preternaturally strong.

The first impression I formed of the case, was that it was one of mitral obstructive disease, with diastolic murmur; the history of an old cardiac affection having, of course, contributed to puzzle the diagnosis. On meeting Dr Gillespie, however, the next day, I was surprised to hear that he had regarded it as a case of pericarditis; and a little further consideration and observation of the case itself, convinced me not only that I was wrong in the first instance, but that I had been misled by the occurrence of the murmur at the apex into what might be called a prejudiced appreciation of its acoustic character, which was by no means so distinctly endocardial as I had at first supposed it

³ *Diseases of Heart and Aorta*, p. 33. It is right, however, to remark that Dr Stokes considers the absolute difficulty of diagnosis, as between pericarditis and endocarditis, to have been over-estimated (probably referring to Skoda's views, which see below).

⁴ "I believe I have found by experience, that a friction-sound in the pericardium may simulate every kind of murmur which can arise within the heart, with the exception of the musical murmur; and, on the other hand, that every variety of the pericardial friction-sound may be produced in the interior of the heart."—Skoda, *Abhandlung über Perkussion und Auscultation*, Wien, 1850, p. 206.

to be. In fact, a few days observation of the changes taking place in the murmur converted my ear, as it were; and it became plain, that the case was one of chronic pericarditis, with little, if any, fluid effusion, and a murmur which varied a good deal both in its character and limits. When Dr Gillespie heard it a second time, he assured me that it was quite different in character from what it was on the visit of the patient to the dispensary; and, during a very few days after this, it underwent further alterations.

Ultimately, this man made an imperfect and slow recovery; and I have no doubt whatever that extensive adhesions were formed. The action of the heart continued long irregular, and generally inordinate; there was often that peculiar "jogging action" alluded to by Dr Hope, and which, though certainly not peculiar to adhesion, is often found in connection with it. Moreover, the movements of the organ were accompanied by retraction in several intercostal spaces; the sounds at the base were unusually distinct; and both action and sounds were violent out of all proportion to the strength of the pulse at the wrist. Notwithstanding these symptoms, he had no dropsy, and no serious pulmonary complication; and he had confidence enough in his own life to marry within a very few months after he left the infirmary. I have seen him since repeatedly, at long intervals, the last occasion being about eight or nine months ago. There was then considerable hypertrophy, and all the symptoms above mentioned, but still no dropsy, nor any of the usual concomitants of valvular disease. And there was, on every occasion on which I have examined his chest, a very peculiar rasping murmur, slightly anticipating the first sound at the apex, but not either masking the sound, or continued into the interval between the first and second sound.

In the acute or sub-acute stages of pericarditis, attended with effusion of serum, the fact of that effusion, as ascertained by percussion and by the modification which it causes both of the sounds and of the murmurs, becomes a valuable aid to the diagnosis; for murmurs which exist simultaneously with evidences of fluid in the pericardium, and with symptoms of acute disease, may generally be safely presumed to be exocardial, at least in part. But when fluid effusion is not present, and when the symptoms are, as in the preceding case, more those of old-standing than of acute disease, the difficulty is greatly increased of forming a correct diagnosis; for in such circumstances there is a probability that valvular deformity may concur with a pericardial affection to create murmur. This probability depends not only on the well-known tendency of the outer and inner surface of the heart to become simultaneously affected in the course of acute rheumatism, but on the presumption, which I have reason to believe supported by good evidence, that adherent pericardium, by its effect on the movements of the heart, may sometimes lead to a secondary endocardial murmur. I base this statement (which I admit requires further corroboration) chiefly on the observation of one very interesting and protracted case of adherent pericardium, which was for many years under my medical care before it terminated fatally last summer, and which I abstain from inserting here at length, only because it contains data too complicated for consideration in connection with the present paper. The main facts connected with the occurrence of murmur may be very shortly stated. The usual state of the heart's action was that of considerable excitement, with a marked degree of "jogging"

movement, and retraction of the parietes at several intercostal spaces. The history was a long and complicated one, even when I first saw the case, but there had been traces of early rheumatism. Ordinarily there was no murmur, or at most a little roughness or reduplication of the sounds; but on various occasions during the course of a long illness I detected transitory murmurs, which appeared to me to be blowing murmurs, both in the region of the apex, and between the apex and sternum, always with the first sound of the heart. What was the real nature of these murmurs? On this subject I had many doubts during the life of the patient; and, as it happens, these doubts were not resolved by the *post-mortem* examination. The heart was found somewhat dilated and hypertrophied; but I have often seen more, both of dilatation and hypertrophy, without any murmur. The valves were perfectly free from deformity, and the endocardium had apparently never been the subject of any disease leaving even a trace behind. Nor were there any of the usual symptoms of regurgitation at the mitral orifice; no dropsy, no hæmoptysis, nor indeed any marked pulmonary symptoms, except such as were accounted for by an old pleuritic attack, which had to a great extent disabled the left lung. Were, then, these murmurs, though of well-marked blowing type to my ear, after all exocardial? The adhesions were universal, and very firm; but in the case of M. R., formerly related, we have seen that this does not necessarily exclude the possibility of murmur. Against this idea, therefore, I have only to oppose the strong impression of the ear (*calcat quantum*) that the sound was not at all of the rubbing type, but decidedly of blowing character. The reader already knows how little I am disposed to place absolute reliance on such an impression; but in the present instance I incline, on the whole, to think it was correct, and that these transitory murmurs indicated something quite different from the permanent condition of adherent pericardium; perhaps an occasional slight degree of regurgitation through the auriculo-ventricular orifices. Be this as it may, the fact of the occurrence of an apex-murmur in connection with old pericarditis, and without any positive valvular deformity or endocardial disease, is plainly an extremely important one in its bearing upon diagnosis; for such a murmur would be almost certain, unless it possessed very strongly the character of friction, to mislead the ear into the belief of disease of the mitral valve. I have seen several cases in which this difficulty of diagnosis has arisen, and more than one in which, after every care had been employed, the true solution of the murmur remained, after all, doubtful.

The following case is valuable, as showing that a murmur, regarded as endocardial during nearly a whole month of observations by a number of educated ears, may nevertheless have had an exocardial origin:—

A. P., æt. 45, a widow, acting as a night-nurse in the Royal Infirmary, came under my care on the 25th of February 1853, labouring under febrile oppression,

with a tendency to coma, and a degree of anasarca of the face and limbs. The respiration was slow, and forced; the voice husky; the tongue dry; the pulse 100, and small. The epiglottis was found swollen, but there was no laryngeal stridor. The cardiac dulness was increased in extent, and there was an obscure murmur. When the urine was produced, it was found to be (after brisk medicinal action on the bowels) not scanty, of specific gravity 1010, highly albuminous, containing abundant epithelial elements (doubtfully renal), and a few blood discs. Notwithstanding the very active employment of purgatives, the coma deepened; the face became slightly erythematous; and the patient died on the 2d of March, five days after she came under my care. During this short period, the signs connected with the heart were the subject of very frequent observation; and, owing to circumstances presently to be stated, the *post-mortem* examination excited great interest in the hospital at the time. Without dwelling on the facts relating to the general symptoms or *post-mortem* appearances, which were in all respects those of Bright's disease terminating in uremia, I will extract from the notes made at the time the successive observations relating to the heart's sounds and their explanation.

1. *On admission.*—"Cardiac dulness increased in extent, but not well defined; at the apex of heart there is an obscure murmur; at other points there are variable traces of murmur, strongly resembling friction, especially at the base, when she is sitting upright."

2. *Day after admission.*—"The cardiac murmur much more distinct; it has now a distinct friction character, being superficial and rough. The extent of cardiac dulness is diminished as compared with the day of admission."

3. *Two days after admission.*—"Friction-sound well marked; percussion-dulness of heart still diminishing, not much greater than normal."

4. *Three days after admission.*—"The cardiac dulness as before. Friction-sound much more distinct and very harsh."

5. *For days after admission.*—"The friction-sound, though well marked, not so distinct; there is a murmur attending the first sound of the heart which appears much deeper than the other, and is thought by some to be endocardial."

6. *Same evening as (5).*—"The cardiac dulness not perceptibly increased; line of demarcation well defined on the right side. The impulse at apex very strong, and somewhat diffused. On auscultation there is no murmur whatever to be detected, though listened for with great care (J. K.). Pulse strong, about 90 per minute."

Death occurred at five o'clock next morning.

The last of these observations (6) is noted upon the authority of a gentleman, then acting as one of my assistants in the wards, and now well known to many persons as one of the naturalists engaged in Dr Livingstone's expedition. The rest of the notes were made at my special request, in such a manner as accurately to describe the impressions conveyed to those who observed the case along with me in regard to a murmur which excited great attention at the time.

The cause of the qualified opinion introduced into the note (6) was as follows:—It was ascertained that the patient had been under treatment in the hospital during almost the entire month of January preceding her admission to my ward, under the care of another physician; and that a murmur then existing had been regarded as exclusively endocardial; the idea of a pericardial friction-sound having never occurred to any one, although the case was repeatedly examined, in the presence of many clinical students and junior practitioners; and although some doubts were entertained whether the mitral valve, or the aortic, or both, were affected. I was informed of these facts by some of the clinical clerks previously concerned in the case, and immediately invited them to re-examine it along with my own assistants. The result of this examination was the note (6); it was generally agreed that a friction-sound was probably audible, but those who had previously heard a blowing murmur

thought that it could still be detected. I myself continued to believe the sounds heard to be friction only.

Under these circumstances, the *post-mortem* examination, which took place in the theatre of the hospital on March 3d, excited more than ordinary interest. A considerable concourse of students and of clinical clerks was attracted to the theatre; and the following facts were ascertained:—

"The pericardium contained from two to three ounces of rather turbid yellowish fluid, containing some shreds of fibrin. On both surfaces of the pericardium a thin and partially distributed layer of fibrin, generally about one-eighth of an inch in thickness, easily torn, and easily separable from the surfaces of the membrane. No congestion of the vessels of the pericardium. Over the right ventricle towards the base, and on both ventricles towards the apex of the heart, firm patches of opaque, pearly-white false membrane, presenting a shagreened and villous aspect in the case of the patch nearest the apex. These patches were separable without much difficulty from the subjacent membrane, but were evidently of different date and consistence from the softer deposits of lymph above mentioned. Heart generally enlarged and hypertrophied to a moderate extent. Left ventricle chiefly affected. Slight atheroma on mitral and aortic valves."

It is only necessary to state, further, that no doubt was entertained among those present at the *post-mortem* examination, that the murmur heard at the earlier date, and noted at the time as "a blowing murmur, heard with the first sound loudest at the apex," was in reality due to the roughness caused by the lymph-patch above described, and which, in its degree of firmness and organisation, corresponded in all points with the theory of an attack of pericarditis of a few months' standing. Further, the symptoms of dry cough, nausea, and vomiting, which the patient had experienced during November, added to pain in the chest anteriorly, and great dyspnoea, which she complained of in January, agree with the idea of an attack of pericarditis; although these symptoms, no doubt, were in part owing to the bronchitis which existed on her first admission, and to the renal disease.

In conclusion, I would place on record, very shortly, some of the more important observations which remain to be made on this subject.

We have seen that a friction-murmur may readily be mistaken for a mitral valvular murmur, and *vice-versa*; the conditions being, that it is limited to the apex-region, or loudest there.

A friction-murmur is still more apt to be mistaken for a murmur of tricuspid regurgitation; because such murmurs (and they are not at all uncommon) are usually heard distinctly over the right ventricle, which is precisely the most ordinary seat of friction-sound. The purity or roughness of the second sound, and the presence or absence of pulsation in the veins of the neck, may assist in determining the character of the murmur; but negative signs must not be trusted to. Tricuspid murmurs have, moreover, in a very peculiar degree, the "superficial" character considered by many authorities so characteristic of friction.

A somewhat similar remark applies to pulmonic arterial murmurs. They exactly correspond in situation with one of the commonest sites of the friction-sound; they may coincide with both sounds of the heart; and, on the other hand, friction-murmur may be heard only with the first sound. The character of both is intensely superficial. As the true pulmonic murmur is very rare, it is generally safer, unless

there be strong evidence to the contrary, to presume that a murmur in this position is exocardial, than to suppose it endocardial and of organic origin.

I was on one occasion, however, greatly deceived by the application of this principle. In a case of incipient phthisis with distressing palpitation and strong heaving action of heart, and with an ill-defined murmur, or rather roughness, with the first sound over the third left costal cartilage, I believed chronic or sub-acute pericarditis to have existed and to have left partial adhesions. On the death of the patient some time afterwards, it was found that the only abnormal condition of the heart itself was an enormously large and open foramen ovale, which had caused so little of lividity or cardiac disorder, that the physician who saw the patient in his fatal illness had no suspicion, I believe, of any serious disorder in the heart at all. *Quære*—Was the murmur in this instance caused by the malformation, or was it an instance of Dr Latham's pulmonic murmur in phthisis?

Aneurismal murmurs may not unfrequently be mistaken for pericardial friction-sound, and *vice-versâ*; especially when the aneurism is in the ascending aorta. The risk of error will be all the greater, if the aneurism be attended, as it often is in these cases, with marked disturbance of the circulation, and pain referrible to the heart. It is useful to recollect, in such cases, that pericarditis is very much more frequent than aneurism in persons under 35 years; and this rule applies with all the greater force in proportion as the patient is younger. But aneurism may occur in a young subject; and further, aneurism of the ascending aorta may become the cause of pericarditis. I have seen several instances of this complication, and have recorded one in the case of a young girl, in the *Edinburgh Medical Journal* for July 1856, p. 87.

Aortic valvular murmurs are less liable than any others within the heart and great vessels, to be mistaken for exocardial murmurs; although their frequent correspondence with both sounds of the heart, and their rough grating character in some instances, gives them a general resemblance to the friction-sound, greater than that of any other endocardial murmur. An aortic murmur which accompanies the second sound can never be mistaken for friction-sound, if it be distinctly prolonged into the neck with a loudness in any degree proportionate to its loudness over the heart. But, in the case of a murmur with the first sound, this is not a safe criterion; for a functional murmur in the vessels of the neck may often accompany a pericardial friction-sound, and may be even louder than the friction-sound itself. It is better to observe accurately the limits and direction of propagation of the sound within the bounds of the thorax, as functional murmurs in this situation are of less frequent occurrence, and are less easily produced by the pressure of the stethoscope.

In many cases, therefore, where a diagnosis rests in any degree upon the presumed presence of friction-sound, the greatest care is neces-

sary to avoid fallacy; and although Skoda's observations on this subject may, as Dr Stokes appears to think, bear a little too strongly, on the whole, in the direction of exaggeration of the practical difficulties of the diagnosis, they are unquestionably well founded in detail, and should be known to every practitioner. Their only effect on the mind of an observant physician will be to prevent his committing himself to an opinion on insufficient grounds. For myself, I can say, that I hardly ever arrive at the conclusion of determining a friction-murmur to be such, without having first applied to it, by a sort of exhaustive analysis, the testing characters of every other well-known cardiac murmur.¹ And, by exercising this degree of caution, I feel assured that I have been saved from important errors.

In the next part of this paper, I shall deduce some important consequences, as regards the frequency, progress, and treatment of pericarditis, from the preceding remarks, and from renewed observations.

II. Frequency of Pericarditis and its Results, as indicated by Examination after Death.

THE uncertainty which we have seen to be inherent in the diagnosis of pericarditis during life makes it impossible to form a trustworthy idea of its frequency, either absolutely, or as a morbid state requiring the assistance of the physician. Besides, almost all the detailed researches existing on this subject relate exclusively to rheumatic pericarditis, which, though perhaps the most frequent form in practice, taking mild and severe cases together, is by no means to be considered as forming a guide to the characters of the disease as a whole. No one has yet attempted (so far as I know) to estimate from clinical data alone the frequency and results of pericarditis, in all its forms, and over a field of practice quite general in its character.² Indeed, it is evident that the difficulty of procuring sufficiently accurate data for such an attempt, is almost insuperable. We must, therefore, fall back on the pathological records of large hospitals, or of unselected aggregates of cases, for such data as may throw light upon this question.

Louis (*Mémoire sur la Péricardite*)³ was the first who made an approach to a correct use of the anatomical data available for this purpose. Most of the preceding inquirers had failed to appreciate rightly the important information given by morbid anatomy, as to

¹ This is the more necessary, as none of the absolute diagnostic tests proposed for these murmurs can be relied upon; and even that which Skoda indicates as the most worthy of confidence,—the non-correspondence of the murmurs, in point of time, with the sounds of the heart,—is only applicable, as he states, to prolonged murmurs; and not to all even of these.

² Dr John Taylor, indeed, has recorded his whole experience of "severe" pericarditis to have been about 1 in every 80 cases in University College Hospital. But the extent and character of the field from which that experience was drawn is not detailed, and it is very probable that his cases were, more or less, selected for purposes of clinical inquiry. Besides, the statement itself presents elements of vagueness which make it useless in a numerical point of view.

³ *Mémoires ou Recherches Anatomico-Pathologiques*, etc., 1826.

the recoveries from pericarditis; and almost all of them had stated the facts, even of the recently fatal cases, in too isolated a form to be of much service in a numerical point of view. Nevertheless, Louis collected from various authors 1263 cases in which the state of the heart, as found on dissection, was recorded. Among these he found that 36, or 1 in 35, were cases of recent pericarditis; while 70, or 1 in 18, were instances of adherent pericardium, which Louis regards as indicating the cure of a pre-existent inflammation. He remarks, however, with truth, that the average as to both these results must be affected by the circumstance, that cases in which the heart was carefully examined are necessarily procured in preponderating numbers from works on cardiac pathology, in which, of course, pericarditis and its results may be expected to be unduly frequent. In other words, the cases are virtually a select class.

To get rid of this source of error, Louis gives the results of a further series of 443 unselected cases examined by himself. Among these cases Louis found 7 cases of recent pericarditis, or 1 in 63; and 11 of adhesions, or 1 in 40. From which he concludes that, in about 1 in 23 of the subjects examined by him, there either existed at the time of death, or had been present at a former period, a well-marked attack of pericarditis.

These results are not easily brought into harmony with those of other and more recent researches. Generally speaking, it appears from the latter, either that pericarditis and its results were more rare in Louis' field of experience than they are in other hospitals; or, what is perhaps more probable, that from only noting the more serious, and disregarding the slighter cases, Louis underrated the frequency of pericarditis in his own experience. This last conclusion seems to be strongly borne out by the fact, that in 4 out of the 7 cases of recent pericarditis Louis records details as to the quantity of fluid in the pericardium, and it was in two cases upwards of a pint, and in one eight ounces,—being in one case only indicated as "un peu de sérosité;" whereas it is a fact well known to morbid anatomists, that very many cases of this latter degree of pericardial inflammation usually occur for one in which the effusion is so large as it was in the rest of Louis' cases.

Among the more modern observers, Dr Taylor¹ found recent pericarditis in 16 out of 355 fatal cases in University College Hospital, or 1 in 22 cases. Mr Wilkinson King,² in 665 fatal cases occurring in Guy's Hospital, found 20 of "acute, recent, and fatal, or rather final pericarditis, or 1 in 33; while Dr Thomas K. Chambers,³ in ten years' experience of St George's Hospital, found, among 2161 fatal cases, 135 of recent inflammation, i. e., pus, or soft fibrin in the pericardium. This last observer thus raises the proportion of cases of acute pericarditis among the fatal cases of an hospital, from 1 in 63 (as stated by Louis) to 1 in 16.

¹ *Lancet*, 1845-46. Vol. II. for 1845, p. 13. ² *Lancet*, November 29, 1845.
³ *British and Foreign Med.-Chir. Review*, vol. xii., p. 493.

Again, in regard to adhesions, Mr Wilkinson King found these in about 1 out of 23 cases; Dr Taylor, in 1 out of 16; and Dr Chambers, in 1 out of 25 cases. This, however, includes both universal and partial adhesions. Universal adhesions were found by Mr King only in 1 out of 31½ cases; and by Dr Chambers, in 1 out of 42 cases. This latter result, it will be observed, is not very different from that of Louis, who may therefore possibly be conceived to have overlooked the greater number of partial adhesions in his summary of experience.

Not being altogether satisfied with these results of previous investigations, as to the frequency of pericarditis in its different stages and forms, I determined to make a more particular analysis of some portions of my own hospital experience, on which I thought I could rely with confidence for the solution of some important questions bearing on this subject. My object was, however, not merely to seek a new basis for observations similar in kind to those of Louis, but to assist, if possible, in defining more accurately than hitherto the significance of the clinical phenomena usually considered distinctive of pericarditis.

I have already pointed out that the presence of friction-sound is not necessarily a proof of the existence of pericarditis, at least in the acute and general form.¹ But as any local roughness in the membrane will produce friction-sound, and as friction-sound is apt to be considered as indicating pericarditis, often without regard to its mode of origin and concomitant phenomena, I thought it desirable to keep in view all the lesions of the pericardium which might be conceived, at any period of their formation, to have given rise to such local roughness as could generate murmur. I do not care to enter too closely, for the present, into the pathological questions connected with some of these lesions. They may, or they may not, be entitled to the name of inflammation, as being similar in their mode of origin to the more decided sequelæ of acute disease. This question has been ably discussed by Mr Paget and others. But for practical purposes, all alterations of the pericardium which were or had possibly been capable of causing murmur, fell within the scope of my inquiry; and all such alterations must be regarded as coming within the clinical definition of pericarditis and its results, so long as friction-sound forms an important part of that definition.

I therefore proceed to inquire into the relative frequency,—

- 1st, Of pericardial adhesions;
- 2d, Of recent lymph or pus in the pericardium;
- 3d, Of chronic thickening of the pericardium, local or general, having the characters of a possible product of former inflammation;

¹ The lithographic plate by which this and other propositions in the former paper were intended to be illustrated, is furnished with the present article. I have to apologise to the reader for the delay; but the most repeated requests on my part have failed to get the drawing out of the artist's hands till a few weeks ago.

And I shall follow this numerical inquiry with some observations upon the relation of these different forms of lesion to one another, in certain cases,—reserving for another paper the more strictly clinical deductions from the inquiry.

To begin, then, with the crude facts, as taken from the different indices constructed (without any special view to this inquiry) for certain parts of the register of dissections, kept while I held the office of Pathologist to the Infirmary:—I have grouped the cases analysed into three series, because the amount of care bestowed in the recording of details was different in each series, and these differences are, in fact, the source of much of the instruction to be gained from the whole.

I. In a small series of 84 miscellaneous cases, observed with the most minute care to omit no single pathological phenomenon in a great number of organs, and recorded in such a way as to give the exact numerical frequency of the phenomena, I found,—

7 cases of pericardial adhesions—*or*, 1 in 12;

5 cases of recent inflammation (*i.e.*, lymph or pus in pericardium)—*or*, 1 in 17;

28 cases of chronic thickening, mostly of what are called white and smooth “lymph-patches”—*or*, 1 in 3.

II. In a larger series of 230 miscellaneous cases recorded, not with equally minute care as to numerical results, but still with fair and trustworthy accuracy (though without special reference to the present inquiry), I found,—

17 cases of adhesions—*or*, 1 in 14;

15 cases of recent inflammation—*or*, 1 in 15.

In this series I do not venture to appreciate the number of white lymph-patches, as it is quite certain that they must often have been passed over without being noted.

III. Finally, among 500 cases of all kinds, observed over a longer period, and not with so much accuracy as either of the other series, but in almost all of which the heart was examined, I found the frequency of adherent pericardium, *disregarding adhesions of no clinical importance*, to be 1 in 33—*i.e.*, 15 cases in all. These cases are recorded in greater or less detail in the *Monthly Journal* for Feb. 1851.¹ It is only necessary to mention here, that adhesions were regarded as of clinical importance, only when they were so placed as to involve the possibility of affecting seriously the movements of the heart. In the opposite circumstances they were disregarded.

If now, keeping in view the numerical details above stated, we assume for a moment that adhesions are the indication of a recovery from pericarditis, and that recent lymph and pus show forth a fatal

¹ On the Favourable Terminations of Pericarditis, etc.

pericarditis, we shall arrive at the result, that among the patients of a general hospital who die, from 6 to 8 per cent. die of pericarditis, while a proportion, varying from 3 to 8 per cent., have had the disease at a previous period, and recovered from it. But both these propositions, though in a certain sense true, require to be scanned much more closely, and will have to undergo considerable modification.

For, in the first place, in hardly any of the 6 or 8 per cent. of cases of recent exudation within the pericardium, can that exudation be regarded as the principal cause of death. In the very great majority the fluid effusion did not exceed an ounce or two; in a great many it would have had to be measured by drachms; in only a few was it more than 6 ounces. Yet in all the cases thus numbered, the exudation had the characters commonly ascribed to acute inflammation; only a few of them being complicated by dropsical or tubercular exudations in the pericardium itself. On the other hand, it appears from a detailed scrutiny, that the other organs, and especially the lungs and pleura, were almost invariably involved in the fatal disease in these cases; in several there was empyema, of much greater extent and intensity than the pericarditis; in a very great proportion there was pneumonia; in some tubercle, in some gangrene; some had been the subjects of severe operations, and others of severe acute or chronic primary diseases. In short, in all, except a very small proportion, the pericarditis was quite evidently a secondary and subordinate lesion.

These facts qualify, to a large extent, the numerical statements above indicated, as to the apparent frequency with which pericarditis leads to death. But the proportion of cases, as stated above, in which recovery may be presumed to have followed pericarditis in a mixed series of *post-mortem* examinations, must be considered as subject to equal modifications. For, from a further minute scrutiny of the cases of adhesion, it appears that in a large proportion the adhesions were of extremely insignificant amount, and hardly of a character from which acute inflammation can be inferred as a matter of certainty.

If we take, for instance, the difference between 1 in 33 and 1 in 12 (in the largest and the smallest series), we shall have pretty nearly the measure of the difference between the proportion of adhesions which were regarded by me, at the time and according to the record, as being of clinical importance, and those which were not so regarded; in other words, the proportion of adhesions not clinically important, probably amounts to the difference between 3 per cent. and 8½ per cent. of all the cases examined. In 5 per cent., then, or 1 in 20, of miscellaneous fatal cases of the same class as those I examined, it may be presumed that there will be found adhesions of a character so slight, or so disposed, as not to be of clinical importance, and not to indicate with certainty a general pericarditis; while in only 3 per cent., in all probability, will there be found adhesions more generally distributed, or more inconveni-

ently placed. Moreover, among these last cases there will be a certain proportion in which the adhesions, though inconveniently placed, are not general. In the cases referred to, this proportion was about a third; and thus the proportion of cases of *general* pericarditis ending in *universal* adhesion is to be cut down, according to my records, to 10 out of 500 miscellaneous cases, or 1 in 50 = 2 per cent.

But now there arises a new question. We may fairly ask if *general* pericarditis does not occur without leading to adhesion as a necessary consequence. The discussion of this question will still further modify our position.

The compatibility of acute and general pericarditis with a termination short of adhesion, has been maintained by Dr Kirkes,¹ in opposition to the opinion of Dr Latham, and of the majority of modern authorities. The evidence founded on is the extreme frequency of white patches and thickenings on the pericardium, apart from considerable adhesion, and the relation established by the researches of Mr Paget² between some of these lymph-patches and the inflammatory exudations. Dr Kirkes thinks that the ordinary termination of acute and general pericarditis is in re-absorption of the exudation, with more or less complete restoration of the translucency and smoothness of the membrane; and that, to whatever extent this healing process remains imperfect, white patches are left as its permanent memorial. Adhesion he regards as quite an exceptional termination; general and firm adhesion as "an extremely rare occurrence," compared with the frequency of pericarditis.

There is something to be said for this opinion, if it be merely to the effect that all pathological processes in the pericardium do not necessarily terminate in adhesion. But everything depends upon what is meant by the term acute and general pericarditis. Like all other parts of the body, the pericardium is subject to slighter and graver degrees of inflammation. That the slighter forms may end in the manner supposed by Dr Kirkes is fully admitted by Dr Latham, and is in accordance with the general opinion; that the severer forms sometimes end in adhesion, could not be denied by Dr Kirkes. The question is altogether one of degree, and depends on the latitude given to the idea of acute inflammation.

My own experience is not decisive as to the question, whether acute and general pericarditis is susceptible of repair without adhesion. I have never yet seen a case in which *acute pericarditis, attended with considerable effusion*, had been cured, and in which (the patient dying from some other cause) the absence of adhesions has been demonstrated by a *post-mortem* examination. Yet such cases ought to occur, not very rarely, if the healing of acute and general pericarditis without adhesion were the ordinary rule, and healing by

¹ *Medical Gazette*, 1849.

² *Medico-Chirurg. Trans.*, vol. xxiii.

adhesion the exception. Again, I have never seen a case of acute and general pericarditis fatal in the period of commencing repair—viz., when the fluid effusion had disappeared, leaving only the thickened pericardium and the lymph on the opposite surfaces—without observing the commencement of a process of adhesion. Dr Kirkes, indeed, considers this cohesion of recent lymph to be a different process from the formation of permanent adhesions; but he advances no proof that the opposing surfaces, once welded together by soft lymph, ever separate again. Nor can I imagine on what ground such an opinion can be sustained. It is to me very plain that cohesion of soft lymph is, in general, the first stage of permanent adhesion; and it is certain that when soft lymph exists in considerable amount on both surfaces, and the fluid effusion has been absorbed, the cohesion of the lymph-covered surfaces is the rule, and not the exception.

On the whole, then, I am disposed to concur in the main with Dr Latham in believing that a general and copious deposit of inflammatory products on the pericardial surfaces is rarely, if ever, followed by repair so complete as Dr Kirkes would have us believe. But this must not shut our eyes to the immense importance of the fact, that deposits of lymph do occur very frequently on the pericardium without being followed by adhesion. The significance of these local deposits, which occur in upwards of 30 per cent. (50 per cent. according to Mr Paget) of all hospital patients who die, is a subject of great interest to the practical physician as well as the pathologist. I must for the present, however, leave the prosecution of this part of the inquiry with the remark, that these local exudations, whatever their cause, may be expected to play some part in the physical signs, if not in the symptomatic history, of what is commonly called Pericarditis.

From this inquiry, then, it results,—

1. That general and severe pericarditis—i.e., pericarditis attended with copious deposit of fibrin on every part of the membrane—commonly ends in adhesion.
2. That local exudation from mild pericarditis, and from the slighter forms of disease of the pericardium, may end in the production of local lymph-patches, or in local adhesions of greater or less extent (as described by Mr Paget).
3. That pericarditis, ending in *considerable* adhesion, occurs at one period or other of life, in from 2 to 3 per cent. of the patients that form the hospital population of Edinburgh, and that die in hospital.
4. That *less considerable* adhesions (not clinically important) occur in about 5 per cent. more (making altogether adhesions present in about 8 per cent. of the hospital population that die from all causes).
5. That lymph-patches, chiefly on the surface of the right ven-

tricle, or mere threads of adhesion at the extreme base (indicating the previous occurrence of morbid processes of a more local kind and of lesser intensity), occur in not less than a *third* of all the patients who die in Edinburgh Royal Infirmary.

6. That acute pericarditis, in actual progress, occurs in about 6 per cent. of the fatal cases; but that in very many of these cases it is slight, and in almost all of them subordinate to other grave constitutional or local diseases; so that primary and uncomplicated fatal pericarditis is a disease of exceedingly small mortality.¹

7. That the healing or repair of pericarditis by adhesion, or by lymph-patches, must be regarded as a greatly more frequent event than its fatal issue; and that the formation of lymph-patches, as the result of slight and local irritation, is one of the commonest of morbid affections.

III. Prognosis and Treatment of Pericarditis.

In two previous sections of these notes, I have endeavoured to bring both clinical and anatomical observations to bear on some of the more obscure points of the natural history of pericarditis. In the present communication, I propose to investigate some of the practical questions arising out of the preceding details.

What is pericarditis, considered as a subject for treatment? How is the clinical idea of this disease to be defined and limited, as compared with the pathological idea of it? What are the circumstances that determine the necessity for this or that particular course of treatment in the individual case? These questions must, I think, have often occurred to most modern physicians who have thoughtfully studied the course of pathological research; they emerge, too, very directly and immediately from the inquiry to which this paper is a sequel.

That a friction-murmur, *per se*, cannot be taken as proof of pericarditis requiring active treatment, is very clear from the preceding observations. For a friction-murmur may be present, and may continue an indefinite length of time, when there is no pericarditis properly so called, but only a roughening of the pericardium, the result of a former morbid process; and further, pathological anatomy shows, that in a considerable proportion of cases, a condition of the exterior of the heart, which in all probability must have led to exocardial murmurs of some kind, has actually been present, and has passed away, if not without symptoms, at least without the least trace of a history of acute pericarditis. Whatever be the pathology of the white lymph-patches and their allied fibrinous deposits in the pericardium, it is impossible to attribute to most of them the history of an acute

inflammation, and it is equally impossible to deny them the power of producing a murmur. I am satisfied, in fact, on grounds previously stated (p. 8), that they do produce murmurs in certain stages of their progress; and that these murmurs must necessarily resemble, to a considerable extent, the friction-murmurs of pericarditis.

Friction-murmur, then, is only a sign that the pericardium is roughened; not a sign that it is inflamed or actively diseased. In other words, friction-murmur, though always a sign of disease, past or present, is one to be carefully scrutinized and judged by other signs and symptoms, before pronouncing it an indication of pericarditis requiring active treatment, or indeed any treatment.

Owing to the great difficulty, already pointed out in my first paper, of judging with certainty of the presence of friction-murmur in cases in which it is slight and ill-defined, I feel that it would be quite impossible to attempt any numerical estimate of the cases in which it has occurred to me to observe friction-murmurs, either of *insignificant clinical value*, or only thus far significant, that they require to be watched and studied, as the indications of a *tendency* to acute disease. I can only say, in general terms, that such cases are of considerable frequency, and would probably be discovered more frequently than they are if the state of the heart were carefully scrutinized by auscultation in every case. The stethoscope has in this particular, as in many others, operated upon the course of physical diagnosis somewhat after the fashion of the Romish confessional in moral diagnosis: it has brought many "secret sins" to light, and in the affairs of the heart has perhaps tended rather to exaggerate the importance of small aberrations than to furnish any new principle of treatment; possibly, indeed, it has in some hands proved to be even a dangerous instrument, by bringing strong remedies to bear, with injudicious rigour, upon comparatively insignificant diseases. Fortunately, the general diffusion of stethoscopic skill has, in this country at least, been closely accompanied by a bias towards the more sober and guarded use of heroic treatment, and hence this evil consequence of minute diagnosis has been gradually corrected. But I can recall many instances of patients frightened very unnecessarily by the observation of "something wrong" about the heart; and it is impossible to doubt that active treatment of one kind or other has often been applied to cases of supposed acute pericarditis upon indications which by no means justified it. Of course, the opposite error is also possible; but I think it will be generally admitted that the principles advocated in several of our standard works on the physical diagnosis and treatment of pericarditis expose us far more to the error of too meddling, than of too inert, practice.

There is one disease so notoriously the cause of pericarditis in a large proportion of instances, that few cases of it now pass under the notice of physicians without careful and frequent stethoscopic

¹ See, on this subject, Dr Chambers' analysis of 135 cases, only two of which appear to have been uncomplicated by either constitutional or local disease. *British and Foreign Med.-Chir. Review*, loc. cit.

observations of the heart. "Every prudent physician, I presume," says Dr Latham, "searches after it (pericarditis), day by day, with his ear in all cases of acute rheumatism."¹ This principle of daily stethoscopic observation is fully adopted by several other authorities; and Dr Stokes goes much further than to watch for the first development of friction-sound in pericarditis, inasmuch as he says "it cannot be too strongly impressed upon the mind of the practitioner that, valuable as the discovery of the signs of an inflamed pericardium may be, it is not for these alone that he is to look, but rather for the indications of excitement of the heart, whether attended or not by the signs of exocardial or endocardial disease." And he proceeds to remark that these indications may demand local depletion, "even though no friction-sound or valvular murmur whatever be present."² Dr Walshe gives instructions tending in the same direction, though not so precise in detail; he thinks, however, that "before the occurrence of friction-sound there is no certainty in the diagnosis."³ And even Dr Hope (with less of special reference to acute rheumatism) recommends the hand to be daily placed on the precordial region in every severe inflammatory or febrile affection, with a view to the discovery of any excited action which might lead to the discovery of pericarditis by auscultation.

Such precepts are of unquestionable importance, for good or for evil; they are, moreover, well founded in fact and careful observation. In all that Dr Stokes, in particular, says about the very early diagnosis of pericardial irritation before the period of friction-murmur, I most entirely concur. But this refinement of diagnosis must be accompanied with great caution, and an almost indefinable practical instinct, or tact, in the application and withholding of remedies, to make it either safe or profitable to the patient. Dr Stokes, indeed, well remarks elsewhere,—and it is the absolutely indispensable corollary of his instructions, as above given,—that "the boldness of treatment often betrays the timidity of the practitioner; he is terrified at discovering the disease, and his mind is more occupied with its name than its nature or actual condition." It is to the great importance of a practice founded on the vital manifestations, rather than on the physical signs exclusively, or even chiefly, that I wish now to remark. I am well aware of the cautions given by Dr Stokes on this subject, which make his chapters on Pericarditis so full of the best kind of instruction for the practical physician; and it is no less a duty than a pleasure to refer, also, to the excellent article of Dr Sibson, in the *British and Foreign Medico-Chirurgical Review* for July 1854, as embodying much sound and well-considered doctrine with regard to the prognosis and treatment of pericarditis, particularly in its rheumatic variety.

During upwards of six years of almost constant attendance in the

¹ *Diseases of the Heart*, vol. i., p. 139.

² *Diseases of the Heart and the Aorta*, p. 93.

³ *Diseases of the Lungs, Heart, and Aorta*. Second Edition, § 1197.

Edinburgh Royal Infirmary as physician, I have of course had under my care a great many instances of pericardial affections arising in the course of rheumatism, and a certain number also concurring with other constitutional or local diseases. Purely idiopathic pericarditis I have rarely, if ever, witnessed; and I am much inclined to believe that (as morbid anatomy teaches) it very rarely occurs as a severe or clinically important form of disease. Pericarditis from direct injury, or from purulent infection after injuries; pericarditis following erysipelas, or pleuro-pneumonia; chronic or subacute pericarditis in connection with unhealthy suppurations in various parts of the body; with epidemic fevers, especially small-pox and scarlatina; and, finally, pericarditis associated with Bright's disease,—have all fallen more or less frequently within my observation, and in many of these last-mentioned forms the issue has been fatal. But of *rheumatic pericarditis*, and of *pericarditis without previous disease*, acute or chronic, I have not had under my own personal care a single fatal case.¹

I am particular in stating this fact, not for the purpose of making invidious comparisons, but that the truth, as regards the prognosis of rheumatic pericarditis, and the results of carefully adjusted and cautious treatment, regulated mainly by symptoms and vital manifestations, may be fairly brought into view. It is now a pretty well established fact that rheumatic pericarditis, whatever may be its ultimate bad effects as predisposing to hyper-

¹ Two or three facts require to be mentioned, not as qualifying this observation, but as removing from it the suspicion of latitude and vagueness. Very lately a case occurred to me of pericarditis, in a patient (E. J.) sent in from the jail as labouring under acute rheumatism of fourteen days' standing. There was no swelling of the joints, but very acute pains in the limbs and back. The pericardial effusion, which was considerable, rapidly subsided under a few leeches, with continued warm fomentations. The patient showed, nevertheless, a degree of prostration very unusual in rheumatism,—symptoms, in fact, more resembling pyæmia. After some time an abscess formed beneath the right sterno-clavicular articulation, and this was followed by a host of abscesses in almost every part of the body, but in no instance primarily in the joints, although the shoulder-joint and the sterno-clavicular were ultimately laid bare, the abscesses in their neighbourhood having quite destroyed the ligaments,—leaving, however, the articular surfaces comparatively unaffected. The patient died. About two years ago, three cases of rheumatic pericarditis, two of which were pretty severe, occurred to me at once. One of these, a girl from Larbert, passed through the disease, and recovered. She was retained under observation a considerable time, and was then dismissed, having been able to walk about freely for several weeks, and almost every trace of abnormal sound, as well as of abnormal dull percussion, having disappeared. She went home in good health, but took ill within a fortnight, and died. I did not hear of this till some time afterwards, and I heard of it with great regret, and not without suspicion of a relapse. On writing, however, to Dr Guthrie of Denny, I found that no doubt had been entertained that the cause of her death was *typhus fever*; that the disease was characterized by the usual symptoms; and that there was no complaint or suspicion of anything wrong with the heart during the whole period of the illness. I have no doubt that the diagnosis was correct, for there was reason to fear that the disease might have been contracted in the Royal Infirmary at the time.

trophy, or atrophy, or other chronic disease of the heart, is not directly fatal in a large proportion of cases; and it is therefore extremely probable, if not certain, that the violently perturbative practice of Bouillaud and others was the cause of many more deaths than were properly due to the disease itself, or than have usually been seen under a milder and more cautious system. I must add, that I have seen reason to suppose that rheumatic heart affections generally may be somewhat less common, and therefore probably milder in degree, in Edinburgh than in London, or at least in the great hospitals of the West End; and perhaps, like pneumonia, they may have been milder of late years. Still, I think I am entitled to add a strong and personal testimony in favour of the rapidly accumulating evidence, that rheumatic pericarditis, cautiously treated and not too much interfered with by special practice, is the very opposite of what it was supposed to be by Bouillaud, Hope, Graves, and even Latham; and that it does not require, as a general rule, violent remedies to obviate its tendency to death, but is, on the contrary, easily relieved by mild and almost purely palliative measures, superadded to the general treatment of the rheumatic affection.

Let me endeavour to indicate, shortly, what has been my usual course of proceeding in dealing with such cases. In every case of rheumatic disease, whether acute or chronic, I have made, as a rule, at the commencement of treatment, at least one or two very complete investigations of the cardiac sounds and impulse, to be used as testing observations for the future. I have also, at the same time, carefully investigated the habitual and the existing state of the cardiac function, and the history of any uneasy sensations or functional phenomena indicating disease, which may have been present at a former period. This done, and the heart being found free from suspicion, I have in future observations dwelt as lightly as possible upon the local examination of the heart, merely assuring myself, from time to time, that there was no very material change requiring more systematic attention.

If a murmur has been present on admission, it has not been too hastily assumed to be a new morbid process, unless accompanied by pain, or by the signs of effusion, or by marked tenderness on pressure, either over the costal cartilages or in the epigastrium. I have not thought it too much to wait for twenty-four or forty-eight hours, before commencing treatment, for corroborative evidence of the existence of true pericarditis in a doubtful case. Of course, careful watching, and examination at least twice a-day, have been the rule in all suspicious cases.

But in many cases of murmur, even when decidedly originating under observation, it has been my practice to look for something more than murmur as an indication for commencing the treatment addressed to an acute pericarditis; and this for two reasons. The alarm created by the announcement that the heart is wrong, is, in susceptible subjects, a serious objection to making this announce-

ment on slight grounds. Having, accordingly, the clear conviction, for reasons which have been already submitted, that many friction-murmurs, unaccompanied by signs of effusion, or by cardiac symptoms, may be safely neglected; and being further of opinion that, as a general rule, the treatment of the rheumatic condition of the system is the best treatment also for the pericarditis, I have been slow to give effect to anticipations of evil founded on the presence of a mere murmur, particularly if slight and narrowly circumscribed in locality. The immense majority of such murmurs are found to present themselves over a part of the right ventricle between the third and the fifth costal cartilage; and I have rarely found them, except when accompanied by tenderness on pretty firm pressure, or by signs of effusion, or by marked excitement of the heart's action, or by a short dry cough, or by cardiac oppression and angina, give any cause for permanent uneasiness.

It is consistent with my observation, though opposed to the statements of several authorities, that one or other of the above-mentioned symptoms is rarely wanting when signs of effusion, even to a limited extent, are superadded to those of murmur. In fact, I more and more tend to disbelieve in *really acute pericarditis*, apart from *vital phenomena or symptoms*; although many cases called pericarditis may have been insidiously developed, and have escaped attention till a late period, either from inattention, or from their not being really acute in the sense of demanding treatment. Among the symptoms mentioned, the dry short cough is perhaps the one most likely to attract attention, and should always lead to the suspicion of pericarditis, when not explained by the state of the lung. Moreover, the symptoms mentioned are occasionally developed as the earliest phenomena of the disease, being succeeded by the murmur within two or three days, as has been shown by Dr Mayne, of Dublin, and by Dr Stokes.

With regard to the treatment of pericarditis actually pursued by me in hospital practice, I shall keep in view chiefly the rheumatic form, inasmuch as most of the others present little room for remarks tending to any satisfactory result.

In saying that rheumatic pericarditis will usually end favourably under various methods of treatment, I am very far from wishing to depreciate the value of medical practice in this disease. No doubt, the field within which our operations are to be restricted is more limited than it has been supposed to be by those who think that a particular method is a *specific* against inflammations in general, or pericardial inflammation in particular. But I trust that few educated members of the medical profession will think the worse of any treatment, because it does not claim the character of a specific method. What I argue is, not that treatment is of no use, but that the general and constitutional treatment applicable to rheumatism should overrule the means addressed to the local disease, except within the very narrow limits which I shall presently point out.

I find it impossible to arrange the facts of my experience in this matter in the statistical form. For, in the first place, I do not know how many cases of really acute pericarditis I have treated; and in the present state of our knowledge, as indicated in a preceding part of this paper, it may safely be said, that every attempt to number such cases must involve elements of most serious fallacy. But, in the second place, I do not know how many of the cases I have treated have got well in the end, and looking to the remote consequences; some of them, for instance, may have recovered for the time with more or less of adhesion of the pericardium. Of this only I am certain, that, as physician to the Royal Infirmary, I have not had under my care a case of rheumatic pericarditis fatal during the acute period of the attack.

Let me try to turn this fact to its proper use, as regards what may be called the heroic methods, bleeding and mercurial salivation.

I believe that the profuse employment of blood-letting in inflammations has long been diminishing, and that in Edinburgh, at least, it is pretty nearly extinct. I shall not, therefore, occupy space in demonstrating that that is a wrong thing which, to the best of my knowledge, very few indeed are in the habit of doing. For many years past, I have not heard that any physician in Edinburgh has used a lancet in rheumatic pericarditis. At all events, I am very sure that the lancet is used most sparingly by the profession in general, and has been so for many years past.¹

But I am not so sure about mercury. Undoubtedly the use of this treacherous mineral is now marked by very great caution; and we almost never hear of those bad consequences which are the direct result of excessive mercurial action. But is its use, as some even now use it, expedient or necessary? And in rheumatic pericarditis in particular, would patients recover better, or worse, were no mercury exhibited? Without altogether holding the question as decided, I am strongly inclined to answer both of these questions in a sense unfavourable to the use of mercury. My own use of this much vaunted and much abused remedy has been rather experimental than founded on conviction.

The reserve with which I have used a remedy which has so much testimony in its favour, may appear to require some explanation. The truth is, that, as a student, it was my fortune to serve in the hospital under a very bold mercurialist—a man of the most humane character, and of the most entire conscientiousness, who proved his sincerity in regard to this subject by undergoing, in his own person, three distinct salivations in the course of his fatal illness. Under this gentleman's directions I learned much that was valuable; and,

¹ Since the statements in this paragraph were published (after being read in the Medico-Chirurgical Society), I have learned that my colleague, Dr Warburton Egbie, has on three occasions employed venesection in pericarditis with a favourable result. I am not the less convinced that in his hands, as in others, the lancet has been "used most sparingly," as stated in the text.

among the rest, something in regard to the bad effects of mercury in rheumatic pericarditis. But I have never succeeded in learning anything as to its good effects, though on many occasions afterwards I have administered it with such caution as my knowledge of it inspired. It may be said that I have not done justice to the remedy. In one sense this is true; for I have very rarely given it, except after other remedies. But surely, with a remedy of the power ascribed to this one, and specially regarded as promoting the absorption of exudation, it is no real injustice to call it into operation only in cases of a certain degree of severity, and to watch with care its influence upon cases that have in some degree resisted other treatment.

But whether I have done justice to mercury or not in my personal trials of it, I believe I have used it so as to do justice to nature, which is, after all, perhaps a better thing. For, assuredly, if I had adopted the plan of giving mercury instantly, in every case where a slight roughness existed in connection with the first sound of the heart, I should have failed to observe that the immense majority of these cases never went beyond a slight roughness, or, at most, a slight but decided friction-sound; that of those which went beyond this, and were accompanied by a degree of effusion, a large proportion had only moderate effusion; and that, even when considerable effusion was present, a good cure was still possible without mercury.

I will conclude by mentioning, as nearly as possible, what has been the usual course of treatment adopted in the cases here referred to, in so far as it has differed from that of acute rheumatism, or of the other primary disease. I trust I have not acted under any narrow or bigoted feeling of opposition to established doctrines, any more than of empirical devotion to single remedies.

In the very beginning of some cases of pericarditis, where the pain was very marked, and especially where it had strongly the characters of angina, leeches have not unfrequently been applied in moderate numbers. From four to six leeches so applied, and followed by fomentations, have very commonly relieved the pain, and been followed rapidly by improvement. Where relief occurred, but was not complete, the application has sometimes been repeated. More commonly, one application has been all that I have thought requisite; and this only when strength and condition permitted, and when the symptoms had a certain degree of urgency. General blood-letting has not once been practised.

Fomentations, sometimes plain and sometimes medicated with opium, friction with camphorated and iodurated liniments, and in obstinate cases the use of blisters, have been the chief local remedies besides leeches.

To conclude, I believe the principles of the safe treatment of pericarditis to be as follows:—1. To make large allowance for the insignificant and spontaneously healing class of cases revealed more by physical signs than by symptoms, and to regard them as demanding

little active treatment; 2d. To consider rheumatic pericarditis in general as a disease susceptible, to a great extent, of cure under mild palliative local remedies and fitting constitutional treatment; 3d. To hold the constitutional treatment as subordinate to that of the disease with which the pericarditis is associated.

THE PROGRESS
OF
OPHTHALMIC SURGERY

FROM THE INVENTION OF THE
OPHTHALMOSCOPE (IN 1851) UP TO THE PRESENT TIME.

BEING AN ORATION

DELIVERED BEFORE

THE NORTH LONDON MEDICAL SOCIETY

ON FEBRUARY 11, 1863.

By JOHN ZACHARIAH LAURENCE,

F.R.C.S., M.B. UNIV. LOND.

SURGEON TO THE SURREY OPHTHALMIC HOSPITAL.

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ANNUAL ORATION DELIVERED BEFORE THE
NORTH LONDON MEDICAL SOCIETY, BY J. Z.
LAURENCE (FEBRUARY 11, 1863).

MR. PRESIDENT AND GENTLEMEN,

According to the strict letter of the law of this Society, the Annual Oration is to consist in an exposition of 'The Advance of Practical Medicine or Surgery during the past Year.' But a review of some of the previous Orations held before this Society justifies me, by precedent, in selecting as my theme a subject which may be said, in point of time to be wider, in point of material narrower, in its scope than that indicated by the law I have just quoted. This subject is—The Progress of Ophthalmic Surgery since the Invention of the Ophthalmoscope in 1851. In approaching so vast a field of human intelligence and research, I may well say it is not the want, but the excess of subject-matter that renders its adequate elucidation embarrassing. 'Hujus autem orationis difficilis est exitum, quam principium invenire.'

To overcome this difficulty, some systematic arrangement became imperative. Two methods suggested themselves: an arrangement according to time, or one according to locality—a chronological system, which displayed each successive step of progress in the order of its date of publication; or one which, disregarding the individual eleven years comprised in our epoch, discussed each improvement in practice according to the special part of the eye to which it referred. The former system I found, on reflection, was, if perhaps preferable in some respects, so much outweighed by considerations of clearness of apprehension, that I altogether rejected it for the

Arrangement of Material.

latter, which alone appeared to me capable of affording a clear retrospective contrast of the Past and Present of Ophthalmic Science.

Ocular
appendages.

Lacrymal
strictures.

Not much advance has been made in the surgery of the ocular appendages. The most striking is undoubtedly a slight, but important, modification Mr. Bowman has introduced into the treatment of the various obstructions the lacrymal passages are liable to. These obstructions or strictures involve principally either the canaliculus or the nasal duct. In the former case, the method of slitting up the minute canal, and subsequently dilating it by fine probes, was very closely foreshadowed by Jünken.* In the latter case, the idea of dilating a stricture of the nasal duct from the punctum lacrymale through the canaliculus was too obvious, to long escape the attention of surgeons. Accordingly, we find Anel, Travers, and Jacob advocating this practice; but it never found favour. Mackenzie characterises it as 'painful, dangerous, and ineffectual; apt to end in incurable atony of the puncta, by causing them to split or ulcerate.' It was reserved for Mr. Bowman to point out that all these disadvantages depended on the anatomical fact that the punctum lacrymale, analogous to the meatus urinarius, was one of the, if not the, narrowest parts of the entire track of the canal, and that, if we opened this up by a cutting instrument, we were at once placed in a position of readily introducing probes of sufficiently useful size, and of thus dilating the nasal duct from the punctum without the disadvantages incidental to the older practice. This method of treatment has found much favour both at home and abroad, and possesses great advantages over the old style, which I now only regard as a last resource, after every other plan of treatment has failed. The treatment of lacrymal strictures by the modern method is as superior to that, by the style, as the periodical

* He removed a portion of the eyelid and strictured canaliculus together, and kept the new punctum lacrymale (nearer the inner canthus) dilated till cicatrization took place. — *Vide* his 'Lehre von den Augen Krankheiten,' p. 628. Berlin, 1832.

dilatation of an urethral stricture would be to that of the life-long retention of an instrument in the urethra. On its first introduction, it shared the common fate of all novelties: it was either rejected *in toto* by those who either could, or, what is worse, would not recognise its advantages; or, on the other hand, its value was, I believe, overrated by those who adopted it. I have myself pursued it from its very first appearance, but must admit that, whilst I have found it easy and efficient in many instances, in others it has proved difficult and unsatisfactory in its application. In these latter cases, I find the best treatment is to make a small opening with a bistory directly into the lacrymal sac, and hence dilate the nasal duct by periodic probing, leaving the superior lacrymal passages altogether intact. I know, however, of no class of affections that tax the surgeon's patience and ingenuity greater, than these lacrymal strictures. Some will not yield permanently to any plan of treatment hitherto suggested. As an extreme measure, the lacrymal sac has been destroyed by caustics or the actual cautery—a procedure which, however apparently illogical in theory, has proved successful in practice.

There are two very common conditions of the puncta lacrymalia, which may, if overlooked, originate long-protracted and ineffectual treatment. We may find them everted, turned away from the surface of the eyeball, or skinned over by chronic inflammation (especially in old people). In either case the puncta no longer fulfil their physiological function—that of receiving the tears as they distil down over the surface of the eyeball. Hence arise watering of the eye, chronic conjunctivitis, and even ectropion—all three effects acting and reacting on each other, so as to form an accumulated fund of discomfort to the patient. Such cases, after having been treated *ad infinitum* by all varieties of lotions and ointments, I have over and over again seen at once cured by slitting up the canaliculus. Effects had previously been mistaken for causes.

A great variety of operations has in modern times been devised for the cure of in- and e-version of the eyelids, but none appear to me to present any striking novelty or

Eversion
and closure
of the
puncta.

The eyelid-tourniquet.

advantages over the older operations. All, however, have been wonderfully facilitated by the 'eyelid tourniquet' of my friend Dr. Snellen—a vast improvement on the old ring-forceps (pince-anneau) of Desmarres. I have myself slightly modified Snellen's forceps, and very recently adapted the same principle to the lower eyelid.* With these instruments, all operations on the eyelids may be performed with the same facility and precision as on the dead subject, the flow of blood being entirely checked, and sensibility greatly benumbed. No one who has not actually used these 'tourniquets' can form a conception of their extreme practical value.

Pathology of the ocular muscles.

No part of ophthalmic surgery has made greater advance, than the pathology of the muscles of the eye; and it is but right to say, that it is chiefly due to the labours of Professor v. Gräfe, whose elaborate papers will be found in the 'Archiven f. Ophthalmologie.' No more striking evidence can, I think, be adduced of the genius of this great ophthalmologist than the spirit of research and the logical acumen which pervade these papers, more especially when we consider how apparently exhausted the subject was before he took it up. The basis of these researches was the determination of the true normal actions of the various ocular muscles. This had been previously most ably investigated by Meissner, Donders, and v. Gräfe himself. To give an at all adequate account of this important branch of our subject would lead me far beyond the limits of this discourse. These researches start with certain—in part experimentally, in part inferentially—ascertained actions of the ocular muscles. These actions are either those of association, or of concurrence of the eyeballs. On looking, say, to the right, the external rectus of the right eye is associated with the internal rectus of the left, and *vice versa* on looking to the left. Here we have an example of the associated action of the two muscles. But in regarding an object in the middle line, the two internal recti act together in harmony with the ciliary muscle. Here we have

* These instruments may be had of Messrs. Weiss or Coxeter.

an example of concurrent (or accommodative) action of the ocular muscles. In either case, if the natural equilibrium of force of the muscles is disturbed, the optic axes are no longer directed to the same points, and double vision ensues. If a convergent squint is thus induced, the resultant right-hand image belongs to the right eye, the left-hand one to the left. But if a divergent squint arises (either from excessive action of the external rectus, or deficient of the internal rectus), then the images are no longer corresponding, but crossed ones—i.e. the right-hand image will be perceived by the left eye, and *vice versa*. We can artificially produce these double images, either by mechanical pressure on the eyeballs, by their voluntary distasteful misconvergence, or by prismatic glasses. In the above instances the double images exhibited simply a lateral separation; but you will readily understand that if the superior or inferior recti or obliqui be involved, the double images will also present corresponding differences of elevation and inclination. You will further easily conceive that the ocular muscles may be so slightly affected (paralysed or contracted) as to render any deviations of direction of the eyeballs quite inappreciable to your eye. In such a case, we may, by an inverted order of ratiocination, utilise the relative positions of the double images for the determination of which of the muscles, and how, are affected?—in a word, substitute for an objective, a subjective method of diagnosis. It is in the elaboration of such often highly complex problems, their solution by different degrees of tenotomy, by prismatic glasses, &c., that Prof. v. Gräfe has so largely contributed to our exact knowledge of the subject.

Double vision.

I may here remark, that for the cure of squint I have practised both the subconjunctival section of the ocular muscles and the old operation of Dieffenbach; and I must confess that, prepossessed as I was at first with the former operation, I have again reverted to the older one, which I believe, performed cautiously, with the addition of an *ad libitum* limiting suture, surpasses the subconjunctival one—not in certainty, but in the power it affords us of very nearly regulating our

Operations for strabismus.

operation in proportion to the amount of effect we wish to produce.*

The various inflammations of the eye have always commanded a large share of attention, on account of their frequent occurrence, their obvious characters, and their occasionally serious consequences to the visual functions of the organ. In comparing their present and past pathology and treatment, no very marked difference is apparent, if we except that tendency against active depletion which characterises generally the practice of the day. There are certain affections of the eye which, from their extreme speciality, fall, by nearly universal consent, to the almost exclusive lot of the ophthalmic surgeon; but there are others which the practitioner in general surgery is quite as competent, and is as frequently called upon, to treat as the specialist. Of these, perhaps none exceed in their importance the various forms of ophthalmia. I shall, therefore, not consider it superfluous to direct your attention in some detail to two methods of treatment which are not very generally known, but which I have found most effectual in practice. The various inflammations of the eye may be divided into two great groups—(1) those of the superficial tunics, the conjunctiva and cornea; (2) those of the deeper structures, the sclerotic, iris, choroid, and retina. The symptoms of both groups will be often found combined, but still those of the one or the other generally to predominate to a degree that justifies us, both diagnostically and therapeutically, in referring any given case to one or other of these two categories exclusively. It would be misplaced to enter here into the diagnosis of these two groups: it is rather to a peculiar treatment of them to which my remarks will apply.

If you examine a large number of cases of any member of the first group—e.g. of mucous conjunctivitis ('catarrhal ophthalmia')—and adopt the practice in every instance of evert-

* The author may here perhaps allude to a very simple little instrument he has constructed for the linear measurement of the exact amounts of deviation of the eyeballs in cases of strabismus. It may be had of Messrs. Weiss.

ing both eyelids, you will be surprised to find in how large a majority of the cases the palpebral conjunctiva is the starting-point of the disease—the *origo et fons mali*. Acting upon this fact, the rational treatment of these forms of ophthalmia is to direct your remedies to the part primarily and principally affected. All such cases I am in the habit of treating by everting both eyelids, and bringing the mucous membrane at the palpebral sinuses so together, that whilst the palpebral conjunctiva is completely exposed, the ocular conjunctiva (and sclerotic and cornea) are as equally protected from the useless and positively injurious action of the eye-water we may think proper to apply. I for this purpose generally use solutions of nitrate of silver (of strength from $\text{iv.} - \text{x. gr. ad } \overline{3j.}$); these I with a camel's-hair brush freely apply to the everted conjunctiva of the eyelids, allow them to exert their action (as indicated by the whitish bloom they produce on the scarlet surface of the conjunctiva) for a few seconds, and then carefully and completely wash off any residuary eye-water with a second brushful of warm water. The old and still common method of dropping strongly astringent and caustic eye-waters 'into' the eye, I regard as highly pernicious, but calculated, by continuous irritation, to protract and extend the inflammation they are intended to cure, and also thus unnecessarily prolong the immediate pain to the patient to whose eye they are applied. In some exceptional cases (especially of conjunctivitis purulenta) we find the ocular conjunctiva inflamed equally to that of the palpebral: to such cases alone is the old method rationally applicable. The treatment I have advocated I first learned in Utrecht, to which city I believe it was transplanted from Berlin.

The second group of ophthalmia embraces the inflammations of the deeper structures of the eye. They are, as a rule, of a much more grave and dangerous character than those of the preceding group, with any member of which, however, they may be, and often are, combined. These deep-seated inflammations are commonly treated by depletion, counter-irritation, and mercurialisation. I treat them simply by the

Treatment
by opium.

internal administration of opium, in combination with sedative local applications. This method was, as far as I know, first systematically investigated and practised by myself in 1859.* Since this I have published in the *Edinburgh Journal* for December 1862, a complete memoir on the subject, exhibiting the histories of twenty-nine cases thus treated, twenty-three of which were cured.

Glaucoma
and iridec-
tomy.

Following out the natural order of ocular disease, we now come to the much-vexed question of glaucoma and iridectomy. Under the term 'glaucoma,' Hippocrates comprehended all opacities behind the pupil.† But the term soon became limited to those which were of a greenish colour, and were irremediable by operative measures. Brisseau,‡ in 1779, originated the view that 'green cataract' was an affection of the vitreous humour. A century later, Wenzel§ sought the seat of the disease in the retina and optic nerve—a view which was also taken up by Wardrop. Later still, we find the arthritic and choroiditic nature of the disease assumed by Beer and Sichel. Weller then gave a very faithful picture of the symptoms, and speaks of the 'great hardness' of the globe, and of a 'feeling of tension in the eyeball as if it would burst.' In 1830, Mackenzie gives as precise a history of the symptoms and intimate nature of the disease as would be possible at the present day without employing the ophthalmoscope. After the invention of this instrument, Ed. Jäger|| gave a faithful delineation of the appearances of the optic nerve entrance and retinal vessels, in a case of 'amaurosis arthritica (glaucomatosa).' V. Gräfe¶ then described still more definitely the peculiar appearance of the optic disc (erroneously considering it, however, as an undue prominence of that structure), and added a new sign in the 'arterial pulse' of the retinal vessels. Later still, he placed the true interpretation on the apparent

* *Vide Medical Times and Gazette for 1859.*

† Aphorism. Sect. iii. 31.

‡ Brisseau's *Traité de la Cataracte et du Glaucome*. Paris, 1709.

§ M. de Wenzel, *Manuel d'Oculiste*. Paris, 1808.

|| Über Staat u. Staat Operationen. Wien, 1854.

¶ Archiv f. Ophthalmologie, i. 1, p. 371.

bulging of the nerve, by insisting upon its being really of the nature of an excavation, or 'cupping,' as it is technically termed, and was thus able to refer the whole series of phenomena of glaucoma to one cause—a morbidly increased tension of the ocular tunics, produced by intra-ocular hydrostatic pressure of their contained fluids. In 1857, v. Gräfe, in an elaborate memoir on the entire subject, introduced his operation of iridectomy. He states as a matter of experience that this operation yields different results, according to the period of its performance. In all acute cases it completely restored vision, if performed within a fortnight of the attack. At later periods of the disease, the results varied: in some cases, restoration of vision ensued after several weeks, or even months; in others, especially those attended with extreme limitation of the field of vision and marked excavation of the optic disc, the amelioration of sight was at the best but temporary; whilst in a third class of cases, in which all perception of light had been lost, iridectomy might relieve pain, but had no influence on vision. My esteemed friend Dr. Haffmanns, to whose excellent *résumé* of the entire subject* I owe the greater part of the preceding epitome, remarks that in no other country did iridectomy meet with greater opposition than in England. This opposition, however, lost, I believe, much of its force from its frequent origination in surgeons, who rejected the operation so unconditionally as not to hesitate to condemn it upon purely speculative considerations, without their having had any personal experience of its effects. Indeed, so high did this tide at one time rise, as to seduce gentlemen, otherwise of the highest professional standing, to descend to expressions and methods of discussion that reminded one rather of the virulence and acrimony of bygone days than of that temperate moderation that should prevail in questions so momentous, I will not say to science, but to humanity at large.

We may discuss the effects of this operation, firstly, as

* Arch. f. Ophthalm. viii. 2, p. 124, et seq.

pure matters of fact. From this aspect, my own opinion and experience is, that its influence on the restoration of vision is inversely proportional to the duration of the disease. In chronic glaucoma I have never seen it remarkably successful. Contrary to this observation, however, it is only right to add that Dr. Haffmanns states (Op. cit. p. 173), in Donders's practice, an arrest, or even a diminution, of impending blindness has been noticed not only in many cases of chronic glaucoma, but even in those of 'amaurosis with excavation' ('glaucoma simplex'), in which tension of the tunics was a prominent sign. V. Gräfe himself says (Arch. f. Ophthalm. viii. 2, p. 303) he can adduce numerous cases, which had been progressing from six months to three years, in which he has obtained the same results with a permanence, which he had the opportunity of testing for periods varying from one to three years. We may next discuss the *rationale* of the operation. In this point of view iridectomy is singularly weak, unless we consider the division of the attached border of the iris as the essential of the operation, in accordance with the opinion of Mr. Hancock, to whose operation I shall presently advert. Whilst (nearly) every other operation, not only in ophthalmic, but in general surgery, has some tangible reason to exhibit for its performance, iridectomy stands (almost) alone in the utter insufficiency of the various far-fetched explanations that have from time to time been assigned for its assumed efficiency. I cannot help thinking the greater part of the benefit of the operation results from the largeness of the corneal incision, necessarily preliminary to the actual excision of the iris, and the consequent completeness of the relief to the intra-ocular tension thus implied; that a limited paracentesis corneae is as inferior to 'iridectomy' precisely in the same ratio as the temporary relief afforded by the mere puncture of an abscess is to the permanent relief given by a free incision. V. Gräfe assumes there can no longer be any question as to the comparative merits of iridectomy and paracentesis corneae. A perusal of Professor Sperino's recent work on the effect of repeated paracenteses corneae, exhibits

a widely different view of the question.* I must now say a few words on Mr. Hancock's operation of Division of the Ciliary Muscle. From a careful perusal of his latest paper on the subject,† I glean that he regards a constricting action exercised by the ciliary muscle on the constituents of the eyeball, as if not the primary, the efficient cause of several morbid conditions. Thus, he considers glaucoma to have 'its origin in some peculiar condition of the blood . . . the ciliary muscle, losing its elasticity and contractility, is converted into a rigid, unyielding cord;' and hence, as a secondary result, the subsequent intra-ocular pressure. Assuming this theory to be correct, division of the ciliary muscle as a curative measure is rationally indicated; and I must say, the cases of glaucoma Mr. Hancock reports, although not given quite so detailed as desirable,‡ still appear to prove the efficiency of his operation. But Mr. Hancock does not confine division of the ciliary muscle to cases of glaucoma. He narrates several instances of staphyloma, leucoma, ceratitis, myopia, &c., in which very striking results have followed the operation.

In the operation for artificial pupil, the most marked improvement has been effected in this country by Mr. Critchett, in his operation of iridesis.§ This consists in opening the cornea with a broad needle, drawing out a portion of the iris between its ciliary and pupillary margins, and confining the slight prolapse by a fine ligature. The advantages of this operation are that the pupillary margin of the iris is preserved intact, the pupil being, as it were, only dislocated into a more favourable position than it before occupied, in the iris not being wounded in the operation, and in its general innocuous nature. Its author has made a very practical application of it in certain cases of stationary partial opacities of the lens: by dislocating the pupil from an opaque to a transparent

Artificial pupil.

* Études cliniques sur l'évacuation répétée de l'humeur aqueuse dans les maladies de l'œil. Par G. Sperino. Turin, 1862.

† *Lancet* for 1862, Nos. V. and IX.—XI.

‡ Case (26) reads more like one of retinitis pigmentosa and hemeralopia than of glaucoma.

§ Ophthalmic Hospital Reports, No. V.

portion of the lens, the patient's vision is restored without any destruction of the lens-substance, and without, therefore, any necessity of his wearing glasses after the operation.*

Cataract.

The capital operation of ophthalmic surgery is undoubtedly the extraction of a hard cataract through the cornea. The ordinary flap operation, originated by Daviel in the middle of the last century, has held its ground up to the present day, notwithstanding the many dangers, both immediate and secondary, incidental to its performance. The question as to whether the flap should be made from the upper or lower half of the cornea, has given rise to much discussion. Daviel practised the lower section, which remained the ordinary one till Wenzel, Richter, and Benjamin Bell recommended the upper section, which was first introduced by Santarelli. This is the one generally practised in this country, but many eminent continental operators still adhere to the older section. In the fifth volume of the *Archiven* (Part. I, p. 158), v. Gräfe describes a method of extraction applicable to cataracts with a moderately hard nucleus, but a soft pulpy envelope. Such cataracts he describes as bulky, pressing forward the iris, beset with bluish, glistening, broad striae, and possessing a yellowish centre. They occur at and after the age of thirty. The operation consists in making an incision with a broad lance of about one quarter of the cornea at its temporal margin, then excising a corresponding portion of the iris, dividing the capsule of the lens horizontally through the whole breadth of the natural and artificial pupil, and finally scooping out the cataract with a modified Daviel's spoon. Subsequently, Dr. Schuft introduced a graduated series of spoons (not unlike miniature fire-shovels), better adapted for their purpose. Since that time the operation has somehow acquired the name of 'Schuft's operation,'† although it is quite clear v. Gräfe was its originator, and that he again primarily derived his first ideas from Gibson of Manchester. I have

Schuft's operation.

* The operations on the iris and parts within the pupil are often much facilitated by the use of Charrière's valuable canula forceps.

† Die Auslöflung des Staars. Ein neues Verfahren v. Dr. A. Schuft.

performed this operation several times myself, and have seen it done many more times by others; but I must say that I perfectly coincide with Dr. Mooren (of Oedt, near Crefeld)—who in thirty-two cases had ten failures—in considering it an operation, however neat, satisfactory, and comparatively free from danger in its immediate performance, as one attended with the most imminent after-consequences—iritis, closed pupil, suppuration of the cornea, &c. This I ascribe to the large and repeated amount of manipulation involved in its performance. It is one thing to see a series of brilliant operations done by others—another to do them oneself, and be compelled to follow them out into their ultimate consequences. The more a surgeon assumes the position of a responsible operator, the more must he become impressed with the unfortunate consequences that almost invariably follow any protracted instrumental interference with the parts behind the cornea.

I have, to my repeated regret, remarked the unfortunate results that follow the slightest injuries—especially those of a contused character—inflicted on the iris; injuries which, as far as their immediate evidence is concerned, may completely elude the first observation of the operator. No living structure hardly inflames so readily as the iris; in none is there a greater tendency to propagation to the adjacent tissues.

Dr. Mooren has recently introduced a modification of Gräfe's operation*—applicable, however, to cataracts of all degrees of consistence. He first excises a portion of the iris; then allows an interval (generally from a week to a fortnight) to elapse, till the effects of this first operation have subsided; and, finally, extracts the lens by the ordinary flap operation (by the lower section) of the cornea. He gives the details of fifty-nine operations. Two only of these failed. A very important additional element is, that most of the cases were highly unfavourable ones. Under any circumstances, the

Mooren's operation.

* Die verminderten Gefahren einer Hornhautvereiterung bei der Staar-Extraction von Albert Mooren. Berlin, 1862.

results of this operation are the most remarkable ever submitted to the profession.*

In 1851, Helmholtz published the first account of his immortal discovery—the ophthalmoscope. Up to that time nothing exact was, or, indeed, *could* be, known of the diseases of the deeper structures of the eye, except such scanty information as could be gathered from the comparison of the anatomical conditions of extirpated eyes, either during or after life, with the symptoms previously observed. Such inferences were, however, unsatisfactory for several reasons. The opportunities afforded to individual practitioners of dissecting eyeballs could be but few, compared with the number of diseases of the deeper structures they would probably meet with in practice. Such anatomical examinations indicated, at the best, only the ultimate physical condition of the parts of the eye, after all the mischief was done, leaving the commencement and progress of the disease altogether a matter of conjecture. To speak then of the 'progress' of our knowledge of the diseases of the deeper structures of the eye, since the year 1851, would be a misnomer: we should rather speak of the first foundation of any precise knowledge we have acquired of what, up to that time, was at best but a pure matter of individual hypothesis.

It may, therefore, not perhaps be considered out of place to enter here into a slight digression on the influence physical science in general has exerted on the progress of medicine and surgery; preceding these remarks by a brief sketch of the successive phases, so to say, the tendencies of the human mind have undergone in their appreciation of the essence and functions of medical science.

In the middle of the seventeenth century, Sylvius propounded the chemiatic school, which had been previously advocated by Paracelsus, who went the length of publicly burning the writings of Galen, asserting the body was governed by purely chemical laws. A perpetual fermentation was thought to be

* My friend Dr. Carter of Stroud and myself have performed the operation successfully.

going on in the organism—an excess of acid, or alkali, engendering what was recognised as disease. Thus says Sprengel, 'He degraded the physician to the level of the brewer.' In England this school was especially taken up by Willis; whilst in France the Hippocratic and Galenic were the prevalent doctrines.

The iatro-mathematical school originated in Italy with Borelli's treatise, 'De Motu Animalium' (Portal's History of Anatomy, iii. 246), in which the principles of mechanics were applied to the actions of the muscles. John Bernoulli even went so far as to introduce the differential calculus into such investigations.* Then we have Van Helmont's school of Vitalism—a principle supposed to preside over the body, and directly opposed to the influence of mechanical and chemical agents.

At last, however, the empirical or inductive school, first steadfastly insisted on by Haller, under the auspices of the illustrious Sydenham, gradually asserted its legitimate supremacy.

Were I asked to designate with one word the prevailing characteristic of the Medicine of to-day, I should say it was Materialism. Indeed, the more our senses have been assisted by physical science, the stronger has the material nature of disease stood out in relief. The first grand application of such aids to diagnosis we find in the sciences of percussion and auscultation, which, alluded to upwards of 2,000 years ago by Hippocrates, and still more definitely by Hooke, was in 1761 made the subject of a formal discourse by Leopold Avenbrugger; to be again forgotten for nearly half a century, till rescued from oblivion, and established on an undying basis, by the genius and energy of Corvisart and Laennec. Nothing has, however, more strongly impressed medicine with its present material character, than the revelations of pathological anatomy, which is daily tending more closely to connect the symptoms of disease with material changes in the organism

* However far-fetched this may appear, it is being strictly imitated by several of the modern speculative German writers on ophthalmic 'surgery.'

after life. Here again has physical science stepped in with the microscope, and laid bare such a multitude of before unsuspected facts as to almost warrant us in invariably ascribing the seeming absence of post-mortem appearances rather to imperfections in our powers of observation, than to their actual non-existence.

Vision is undoubtedly the most perfect of our senses, whether we regard it for its range of comprehension or the precision of its information. If, then, a, so to say, but second-rate sense, as that of hearing, has shed such a flood of light on the diseases of the chest, we need not feel surprised at the results of the ophthalmoscope—the eye's eye, if I may be permitted such a laconicism.

Luminosity
of the eye.

The luminosity of the eye, especially in the tapetum of dogs and cats, had been observed from the earliest times. It was regarded as evidence of a voluntary nervous irritation on the part of the animal, and thus came to be viewed with a degree of popular superstition. In 1704, Méry observed the retinal vessels of a cat under water (on the principle of Czermak's orthoscope). In 1810, Gruithuisen and Prevost showed the luminosity was not intrinsic to the eye, as it did not take place in the dark, but referred it rightly to an extrinsic cause—to reflected light from without. In 1846, Cumming published his paper 'On a Luminous Appearance in the Human Eye' (*Medico-Chirur. Transactions*, vol. xxix.). Rarely has an observer approached closer to an important discovery without actually reaching it. 'The establishment,' he says, 'of a similar reflection from the healthy human eye to that from the eyes of animals, appears to me chiefly important in its adoption as a mode of examining the posterior part of the eye. The retina and choroid hitherto concealed in the living eye, and little opportunity being afforded of examining their condition after life, in consequence of their diseases not terminating fatally, considerable uncertainty has attended the diseases ascribed to these structures; but the existence of this luminosity having been recognised, its non-existence or abnormal appearance may enable us to detect changes in these structures heretofore unknown, or

satisfactorily to see those which we only suspected.' Cumming then distinctly pointed out the luminosity of the human eye, the method of observing it, and its true *rationale*. About this time, Brücke arrived at the same result.* His method was to allow the light from a lamp to enter the observed eye, whilst he protected his own eye from the glare by a screen, much in the same way as in Helmholtz's 'simplest form of ophthalmoscope.' He at the same time refers to an observation of Dr. Carl v. Erlach, who simply observed the luminosity of a second person's eye by light reflected from his own concave spectacle lens (which acted as a concave mirror). Both Cumming's and Brücke's principle was for the observer to regard the eye in a direction nearly parallel to the entering (external) rays of light. But it was reserved for Helmholtz, in 1851, to first clearly perceive the true optical relations between the incident and reflected rays, and thus to be led to the invention of the ophthalmoscope.† He used as his reflector a series of thin plates of glass, *correcting the direction of the emergent rays by suitable concave lenses*. Thus did it for the first time become possible to observe the details of the fundus oculi—its nerve and vessels. All previous observations on the human eye had been limited to observing simply its luminosity. Notwithstanding, however, the magnitude of Helmholtz's discovery, the difficulty of manipulation, the feeble illuminating power, and the limited field of view of his ophthalmoscope, would in all probability have restricted its application to that of a philosophical instrument, had not Ruete of Leipzig‡ given to it its present world-wide diffusion, by introducing two important improvements—1st, the use of concave mirrors as reflectors;

Helmholtz's
discovery.

Ruete's in-
strument.

* E. Brücke: 'Über das Leuchten der Menschlichen Augen.'—Müller's Archiv for 1847, p. 225.

† Beschreibung eines Augenspiegels, v. H. Helmholtz. Berlin, 1851.

‡ Der Augenspiegel und das Optometer, v. C. G. Theod. Ruete. Göttingen, 1852. He says, 'Much more comprehensive and instructive is the view, if we, in the examination of the eye, instead of a concave glass use one or two convex glasses, and thus convert the eye into an astronomical telescope' (p. 9). Helmholtz (op. cit. pp. 24–28) discusses theoretically the application of convex glasses, but does not appear ever to have put them into actual practice.

2nd, the application of a convex object-glass, with which we may view the fundus oculi by its reversed image.

Binocular
instru-
ments.

It forms no part of my design to enter into the theory of the ophthalmoscope. Zander, in his work on the Ophthalmoscope*—by far the most complete yet produced—enumerates no less than twenty-seven distinct forms of the instrument, and since several others have been proposed. Indeed, it appears to have been the aim of every ophthalmic surgeon to invent his own instrument, just as every physician does his own stethoscope, every obstetrician his own forceps. A really great step has, however, been made by Dr. Giraud-Teulon, of Paris, who has invented a binocular ophthalmoscope. It would be inappropriate to discuss here the advantages of binocular over monocular vision. Solidity of form, precise localisation of the various objects seen in the fundus oculi, a natural play and entire absence of fatigue to the eyes (as everyone must have felt after any prolonged use of a monocular instrument), are amongst the chief advantages of the binocular ophthalmoscope. Of this I am convinced, that anyone who has once learned to use the binocular instrument will prefer it to the monocular one (except for the direct image). Giraud-Teulon's instrument is on the combined principles of Helmholtz's telescroscope (reversed) and Brewster's stereoscope. I have myself improved the instrument, by substituting Wheatstone's principle in its construction. In the 'British Medical Journal' for November 1st, 1862, in a paper on 'Binocular Ophthalmoscopy,' I have briefly described the principle of my binocular ophthalmoscope and the advantages I conceive it possesses over that of Giraud-Teulon's, to whom, however, I wish it to be distinctly understood, the entire merit of the fundamental idea is due.† To expatiate on the inestimable advantages the ophthalmoscope has con-

Giraud-
Teulon's
instrument.

Author's
instrument.

* 'Der Augenspiegel,' von Adolf Zander. Leipzig, 1862. I may here refer to the excellent work, 'A Practical Treatise on the Use of the Ophthalmoscope,' by my esteemed friend Mr. J. W. Huike.

† The author's instrument is to be had of Messrs. Murray & Heath, 43 Piccadilly.

ferred on the pathology of the eye—how it has opened out an inexhaustible mine of enquiry; how it has shed its light on an heretofore chaotic darkness; how it has, in brief, completely revolutionised all our preconceived notions of the diseases of the deeper structures of the eye—I hold to be superfluous. But a very striking fact it is, indeed, that the almost unparalleled strides ophthalmic surgery has made within late years, date, by a remarkable coincidence, with Helmholtz's immortal discovery. Nor has the greater part of this progress the most remote connection with or dependence on the ophthalmoscope; on the contrary, it relates to researches in ophthalmology which might have been pursued with equal prospects of success a century ago. Thus has one great discovery given an impulse to an entire science.

The analogy of the eye to an optical instrument has from the earliest times attracted the attention of philosophers; hence their efforts to apply the ordinary laws of optics to the resolution of the various problems of vision. By none have these been adapted with greater felicitude than by our great countrymen, Young and Porterfield. But nearly all these researches referred to physiological optics. The study of the pathological deviations of the dioptric system of the eye is of comparatively modern growth. All I know is, that when I was a student, the knowledge I had imparted to me was limited to the fact that concave glasses improve myopia, convex ones, presbyopia, and that the selection of the precise power required for any given case was an entire matter of rude empirical trial.

The basis of the exact knowledge we now possess of pathological optics were the discoveries of Cramer and Helmholtz, who have for ever solved the much-vexed question of the adjustment or accommodation of the eye to different distances, when they proved it to depend on a change of convexity of the crystalline lens, and that this was effected by the ciliary muscle. We then come to the researches of Professor Donders, of Utrecht. He, for the first time, insisted on the absolute necessity of separating the two factors,

Optics ap-
plied to the
eye.

Donders's
researches.

refraction and accommodation; to adopt the language of mathematics, the 'constant from the variable.' None but those who have intimately studied the subject can form any conception of the importance of this one simple step: of the precision it has conferred on our ideas—how it has smoothed the path for all future researches. Donders recognises three conditions of refraction—1st, normal; 2nd, excessive (myopia); 3rd, deficient (hypermetropia). The first step in the investigation of any given case is to refer it to one of these three classes, then to estimate the precise amount of refraction—the 'power'—of the eye. Having thus determined the constant, we may examine the variable—accommodation—and thus finally form a complete analysis of the case. To adopt a familiar simile—if we wished to investigate the qualities of a telescope, we should first test its powers of defining distant objects, as the heavenly bodies, and then those of adjustment for near objects at variable distances. The first elements of science appear in the form of isolated facts. As these multiply, a kind of mutual connection appears possible. Possibility becomes successively probability; probability, certainty. And thus the individual truths of science, like the wheels and pinions of the engine, become all subservient to one great common end. In no branch of science has this been better exemplified than in what has almost become a speciality of a speciality—viz., our knowledge of the deviations of refraction and accommodation of the eye. Within the last year, Donders has again added to our knowledge of this subject by an elaborate treatise on Astigmatism.

Astigma-
tism.

Astigmatism (coined by Professor Whewell, from α privativum and $\sigma\tau\eta\mu\alpha$, point=focus) is an inequality of refractive power in the different meridians of the eyeball—understanding by the term meridian, as in astronomy, a great circle passing through the poles. Practically we may limit our investigations to the horizontal and vertical meridians of the eyeball. Thomas Young, in 1793,* was the first to discover this

* Philosophical Transactions, vol. lxxxiii. p. 169.

peculiarity in his own eye: this 'in a state of relaxation collects to a focus on the retina those rays which diverge vertically from an object at the distance of ten inches from the cornea, and the rays which diverge horizontally from an object at seven inches distance.'* Consequently, the refraction of his globe was greater in the horizontal, than in the vertical meridian. In 1827, Professor Airy published a remarkable instance of the same anomaly in his own (left) eye.† In this, the furthest point of distinct vision for vertical rays was three and a half inches; for horizontal ones, six inches; the eyeball thus being nearly double as myopic in the vertical, as in the horizontal meridian. To Airy likewise belongs the merit of first having applied cylindrical glasses to the cure of astigmatism. This has been shown by exact measurements to depend generally on an inequality of curvature of the vertical and horizontal meridians of the cornea. It may, however, as in Young's case, originate in an irregularity of curvature or position of the crystalline lens. Astigmatism is remediable by cylindrical lenses. These represent sections of cylinders parallel to their axes. Such lenses have the peculiarity of exerting a lenticular (refracting) influence on rays striking them transversely to the axis, allowing those striking them parallel to the axis to pass through no more refracted, than they would be by a piece of plane glass. Thus we may add to or subtract from, by cylindrical, convex or concave lenses, the refractive power of one meridian of the globe, leaving the other unchanged, and thus restore the equality of refraction in the two meridians—correct the astigmatism.

Up to the period of Donders's recent researches, only eleven cases of this optical defect had been recorded. He has shown that astigmatism is really a very common disturbing cause of vision, and that many cases hitherto but imperfectly correctible by ordinary (spherical) lenses, are almost completely so by

* Philosophical Transactions for 1801.

† Transactions of the Cambridge Philosophical Society for 1827, vol. ii. p. 267.

cylindrical ones, either alone or conjoined with spherical ones.*

Conclusion.

After all I have said, no one can fail being struck at the almost incredible rapidity with which discovery has succeeded discovery, in ophthalmic science, within the last ten years. Assured of the fact, he will naturally be led to enquire into the reason. This may, I think, be attributed partly to the attractive nature of the science itself, partly to the genius it has enlisted in its cause, partly to the exclusive nature of its speciality, which thus demands a more than ordinary preparatory knowledge and concentration of ideas for its successful pursuit. What more brilliant example have medicine and surgery to offer of the advantages of specialism? The diseases of the chest, of the nervous system, and lately of the throat, have all been first reduced to states of science by specialists. Without ignoring the advantages—nay, the necessity—of a comprehensive knowledge of general medicine and surgery for everyone, whatever be his special predilection, is it not quite an open question whether the indiscriminate anathemas that have been launched against specialism may not be taken as so much evidence of the narrowness rather than of the assumed comprehensiveness of mind of those from whom they have emanated? Differently constituted minds will instinctively seek different spheres of action. Well-directed intelligence, energy, and earnestness of purpose, will gradually enlarge these spheres by a sort of simultaneous centrifugal expansion of the two elements, mind and matter; whilst, on the other hand, a species of mutual attraction appears to be constantly tending to unite these separate spheres into one harmonious whole, whose ultimate form or dimensions are as impossible to foresee, as the bounding horizon of the ocean for the mariner to measure—that perpetually expanding circle, whose limits the waves never reach, the eye never spans.

* *Astigmatismus und Cylindrische Gläser*, von F. C. Donders. Berlin, 1862.

THE
PHYSIOLOGICAL METHOD

OF
INDUCING RESPIRATION

IN CASES OF

DROWNING, STILL-BIRTH,

SUFFOCATION FROM CHLOROFORM,

ETC., ETC.

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(THE RIGHT OF TRANSLATION IS RESERVED.)

"Death may usurp on Nature many hours,
And yet the fire of life kindle again
The overpressed spirits. I have heard
Of an Egyptian had nine hours lien dead,
By good appliance was recovered."

SHAKESPEARE, *Pericles*, act iii.

"Latent scintillula forsan."

A NEW METHOD OF RESTORING RESPIRATION TO PERSONS APPARENTLY DEAD FROM SUSPENDED BREATHING.

In the following paper, I purpose to describe a new method of treating apnoea, or suspended respiration, by inducing such movements of the thoracic parietes through the muscles of respiration, as shall cause the atmospheric air we breathe to be drawn into and again expelled from the lungs of the asphyxiated person—and without having recourse to the employment of any mechanical apparatus. The process is of universal application; it is easy of performance, entirely in harmony with that of Nature, and does not prevent or interfere with the use of those means in which much confidence has hitherto been placed; such, for instance, as the use of the warm bath and other plans of restoring warmth and circulation.

The subject is one of deep practical and physiological importance, and is of direct personal interest to every individual, since no one can claim for himself or his family security from the dangers against which this method proposes a remedy.

Apnoea, or suspended respiration, may be the result of drowning, of still birth, of epilepsy, of apoplexy, of the undue or excessive employment of opium, of chloroform, of certain gases, etc.

The methods usually resorted to for restoring patients affected by suspended respiration may be grouped under three divisions. The first division includes various plans for exciting the reflex function of the nervous system. The second provides for the maintenance of warmth and circulation. The third proposes means for supplying air to the lungs, either by mechanically forcing air into the

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chest, or by inducing such movements in the thoracic parietes, as shall induce fresh air to enter into the pectoral cavity alternately with the expulsion of the products of respiration.

It is with the third division that we are especially concerned.

With regard, however, to the second division—the treatment by *warmth and friction* only—I may be allowed to make a few passing observations. There is much difference of opinion, but it must be said that experience is greatly in its favour; greater numbers having been restored by it than by any other means. It is to be kept in mind that persons are usually submerged in cold water, and the chief point aimed at is the maintenance of the natural temperature of the body, so that pulsation may be increased, and thus respiration encouraged with more hope of success. Hence the Royal Humane Society, in its printed rules, particularly recommended it as a restorative in cases of the apparently drowned, and of the apparently dead, from intense cold, or from hanging. "In one of the most remarkable cases of resuscitation on record, the individual had been fourteen minutes under water, and no signs of returning animation were evinced until the treatment, which consisted simply in the application of warmth and constant friction, had been persisted in for eight hours and a half from the time of the accident." (Taylor, *Med. Jurisp.*)

Edwards, Brown-Séquard, Dr. Marshall Hall, and others have experimented on animals. But the results of experiments on animals are unsatisfactory, and would not, probably, be applicable to man. "The practical conclusion at which Dr. Hall arrived was, that, in the treatment of apnoea, the continuous warm bath must be excluded. This inference is, we think, scarcely warranted by the facts. In the experiments he made, animals were completely submerged, so that there was no escape for the products of respiration; whereas, in the use of the warm bath, there would not be this obstacle." (*British and Foreign Med.-Chir. Review*, 1858.) "The duration of life in asphyxia seems to be proportionate, not to the warmth, but to the maintenance of a median temperature of the patient or of the animal made the subject of experiment. The restoration of warmth can

only be safely effected when the respiratory movements are maintained, and the circulation is promoted. The warm bath, used *alone*, appears to have been often fatal." (*Lancet*, December 1856.)

Dr. Edward Smith states that the hot water bath might act injuriously by the increased pressure on the chest, and also by the position not being a favourable one for respiration. Dr. Markham has suggested that possibly the warm water bath might do harm by preventing the access of air to the skin, and thus assist the state of asphyxia.

I think we may, notwithstanding, conclude that the warm bath may be considered as an *auxiliary* means, and that much dependence is to be placed on both friction and warmth, and that nothing should be allowed to interfere with the application of those means by which warmth is restored to the skin. "It ought certainly to be borne in mind, that the practice of the Royal Humane Society, whose rules, Dr. M. Hall states, 'may be summed up in one word—warmth' has been eminently successful." (*Vide British and Foreign Medical-Chirurgical Review*, April 1858.) The impossibility of using the warm water bath during the adoption of the postural method of Dr. Marshall Hall is universally admitted.

In the apnoea of still born infants, momentary immersion in baths of from 50° to 60°, and 98° to 100°, alternately and quickly, might be tried, as recommended by Dr. Hall.

Hot air increases respiration, a person respires more frequently in hot air than in cold. It also increases pulsation.

Cold also increases respiration, but acting only as shock it does not increase pulsation.

Accordingly I would suggest the employment of a *hot air bath* where practicable in cases of suspended animation as a general stimulant to both the respiration and circulation, with the occasional application of cold to act on the principle of shock, and so accelerate any respiratory efforts.

The air would have free access to the skin, and the position of the body might be such as was thought desirable.

We now come to the third division of our subject. The introduction of air into the chest.

1. By the use of instruments.

2. By taking advantage of certain movements of the walls of the chest.

1st. *The mechanical introduction of air into the chest* by means of the bellows, by Dr. Sibson's or some other apparatus, appears, theoretically speaking, to be strongly indicated; but the obvious objection is, that the instruments are not commonly at hand, and whatever is done on these occasions must be done quickly. A similar remark may be applied to the employment of electricity and electro-magnetism, and the introduction of certain gases, oxygen, ammonia, etc. Mr. Marc states, that "more good is done by drawing air out of the lungs than by artificially inflating these organs."

2nd. Under this division we come to the examination of some of the various ways of introducing air by imitating inspiration and expiration, employing with that view certain movements of the thoracic parietes. We will group them under three heads:—

I. Alternate compression and relaxation of the walls of the chest.

II. The postural method of Dr. Marshall Hall.

III. The method which I beg to introduce to your notice.

I.

Alternate compression and relaxation of the chest.

This is the essential part of the various plans formerly employed. On compression, the walls of the chest descend below their accustomed level, the capacity of the lungs is diminished, and air is expelled. Upon the removal of the pressure or relaxation of the chest, the ribs rise again to their usual and ordinary height, and air is again introduced. There is no elevation of the ribs, such as takes place in natural deep inspiration, in which they are made to rise above their ordinary or quiescent level, and the cavity of the chest greatly increased in size.

These methods have been made the subject of experiment. The apparatus employed was very simple, and consisted of three tubes, one of glass, to be passed into the trachea; another, a bent barometer tube, graduated; and these two connected by a piece of India rubber tubing. The glass tube was passed through an aperture made in the trachea, and firmly secured in its

place by a ligature. A small quantity of coloured spirit was poured into the barometer-tube, which was in the form of an inverted syphon, and was retained in an upright position, on a level surface, by an assistant who carefully noted the height of the column of fluid. Trials were made on persons of both sexes and of different ages, and at a length of time after death which varied from one hour and a half to two days, in those with lungs sound or otherwise. But practical deductions have been drawn from those cases only in which the results were obtained when the body was warm, and when two hours had not elapsed after death. This is very important, *rigor mortis* preventing trustworthy conclusions. The chest also should be free from disease. The subject of experiment was placed in various positions; and, compression of the chest being made, the fluid contained in the inverted syphon, connected with the lungs by the flexible tube, immediately rose; and, when the compression ceased, the fluid fell slowly to its previous level, demonstrating—

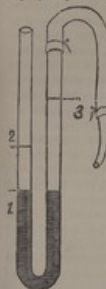


Fig. 1.—1. Natural level of fluid. 2. Height to which fluid rose by pressure on the chest. 3. Point to which the fluid receded in the first part of the instrument by the drawing of air into the lungs when the chest was expanded by my method.

1st. That air had been expelled from the lungs in consequence of the pressure exerted on the parietes of the thorax.

2ndly. That the air returned into the chest, though slowly, upon relaxation of the pressure, in consequence of the feeble elasticity of the chest.

3rdly. That the actual capacity of the chest was not increased by this mode of practice.

II.

Postural Method of Dr. Marshall Hall.

The principle involved in this method of treatment is precisely the same as in the foregoing plan, in which simple compression and relaxation of the chest are employed to induce expiration and inspiration; the difference

being that, in the postural method, the compression of the thorax is occasioned by the weight of the body of the patient resting on the chest during the prone position, followed by the removal of the pressure, and consequent return of the thoracic parietes to their ordinary level on the patient's assuming the supine posture. No attempt is made to enlarge the actual capacity of the chest by inducing an elevation of the ribs, such as takes place on making a deep inspiration. The following directions are given for performing the postural method:—"Place the patient on his face, supporting the chest on a folded coat, or other article of dress. Turn the body very gently but completely on the side, and a little beyond, and then briskly on the face, alternately repeating these measures deliberately, efficiently, and perseveringly, fifteen times in a minute only. (When the patient reposes on the thorax, that cavity is compressed by the weight of the body, and expiration takes place; when he is turned on the side, this pressure is removed, and inspiration occurs.) When the prone position is resumed, make equable but efficient pressure with friction along the back, removing it immediately before rotation on the side. (The first measure augments the expiration; the second commences inspiration.)"

Numerous experiments have been made on the dead body in order to test the influence the postural method has upon respiration. The following results were obtained by the aid of the apparatus mentioned above, namely, a glass barometer tube bent in the form of an inverted syphon graduated, and containing a little coloured spirit, made to communicate with the trachea by means of a long flexible tube, the joints well secured by ligature.

First: The subject of experiment being placed in the prone position, equable but efficient pressure with friction was made along the back, as recommended by Dr. Marshall Hall, in his rules for restoring persons apparently dead from apnoea. The fluid rose in the bent tube, proving that the compression exercised on the thorax by the weight of the body, etc., did displace some air from the lungs.

Secondly: On turning the body on the side and a little beyond, the column of fluid fell slowly to its former level, proving that the air returned into the chest, though slowly,

upon the removal of the pressure, in consequence of the return of the parietes of the chest, by their feeble elastic force, to their natural level.

Thirdly: It was proved, by the fluid in the bent tube not descending below its level, that the actual capacity of the chest is not enlarged. It must be remembered that it is only the "residual air," or that which remains in the chest after an expiration, which is operated upon in the postural method.

Fourthly: From the results of the experiments on simple compression exactly corresponding with the results of the experiments on the postural method, we may infer that these two methods of treatment are identical in principle.

The Postural or Ready method of Dr. Marshall Hall has been found open to some objections; for instance:—

1. Expiration is made to precede inspiration, whereas originally expiration is second in order, and not the primary act. In still-born infants, whose lungs have never been inflated, forced expiration, at first, is of course impossible.

2. The expansion of the thorax, or inspiration, being dependent on little more than the elasticity of the tissues, takes place feebly, inefficiently, and slowly, and therefore calls for more active mechanical aid.

3. It is scarcely possible to use the warm bath during the adoption of the postural method.

4. The patient is liable to have the mouth and nose compressed, the face bruised, or the neck twisted by the almost lifeless body being turned alternately on the chest and back fifteen times a minute for some hours. Moreover, to the operator this process is very arduous.

5. When the patient is turned on the face and pressure made on the back (pronated) the contents of the stomach are liable to pass into the oesophagus and windpipe.

6. When the patient is turned "completely on the side and a little beyond" (supinated), the tongue is apt to obstruct inspiration by falling back into the throat, with the epiglottis resting against the back of the pharynx.

7. Both sides of the chest are not equally inflated, one side only being called into action at the same time to any important extent.

8. This process is not entirely in harmony with that of nature. It is not the way in which we generally breathe.

9. The amount of air respired is exceedingly small; this is, doubtless, in consequence of the actual capacity of the chest not being increased.

As to the state of the tongue, I observe that, in cases of asphyxia the tongue is usually swollen, and falls back into the throat, the epiglottis resting against the back of the pharynx, so as to act as a plug to the pharynx, and a sort of valvular covering to the otherwise patulous orifice of the larynx. In the postural method, when the body is turned on the face, no doubt the tongue falls forwards and draws with it the epiglottis, and leaves the glottis open. This, however, is of little consequence so far as respiration is concerned, for the very compression of the chest by the weight of the body itself forces out the air from the lungs, and so lifts up the valvular covering of the larynx, so that in fact the tongue does not offer any serious obstacle to *expiration* when it is induced by compression of the thorax.

Moreover, in the postural method, the moment the patient is rolled "on the side and a little beyond," in order that *expiration* may take place, the tongue is liable to fall back into the throat, and its semi-lifeless relaxed tissue to cover securely the orifice of the glottis, and its accurate closure is probably further insured by the suction generated by the return of the thoracic parietes to their natural level, so that the greater the previous compression of the chest, the more firmly is the tongue drawn down as a plug into the throat, when the pressure is relaxed, and the more effectually does it prevent the entrance of air into the lungs.

With reference to the amount of air respired in the Marshall Hall method, Mr. Wildbore states in a letter to the *Medical Times and Gazette*, Nov. 28th, 1858: "I believe that I am correct in saying that the experiments performed by Mr. Hunter and other gentlemen at St. George's Hospital on the dead subject, proved that nearly as much air entered the lungs as would be inhaled in an ordinary inspiration in a state of health;" that is, from six to thirty cubic inches.

I think there must be some fallacy here. The method of performing the experiments just mentioned is by no means satisfactory, and is, I believe, open to obvious objections.

The tube of the pneumometer was passed into one of the nostrils of the patient, the other nostril and lips being closed with adhesive plaster. The want of rigidity of the cheeks and the amount of air in the respiratory tract, and even in the stomach, etc., of the patient could scarcely fail to render the indications of the instrument, however perfect in itself, liable to suspicion, if not entirely valueless, in point of scientific accuracy.

In the Marshall Hall method, the amount of air displaced from the chest and returning there is exceedingly small, being according to my experiments a fraction of one cubic inch.

III.

Dr. Henry Silvester's, or the Physiological Method of Inducing Respiration.

The new method which I venture to bring before the profession is an imitation of natural deep respiration, and is effected by means of the same muscles as are employed by nature in that process. In ordinary deep inspiration we lift the ribs and sternum by the pectoral and other muscles which pass between the chest and the shoulders, and thus produce the threatened vacuum which inflates the lungs. In my method we lift the ribs and sternum by the pectoral and other muscles, which pass from the shoulders to the parietes of the thorax, by steadily extending the arms of the patient up by the side of his head: by elevating the ribs the cavity of the chest is enlarged, a tendency to a vacuum is produced, and a rush of air immediately takes place into the lungs. Expiration is brought about by simple compression of the sides of the chest by the patient's arms.

The Principle. Forced enlargement of the capacity of the chest, producing a tendency to a vacuum, and consequently an inspiration of air into the lungs, induced by the constrained action of the muscles of ordinary and extraordinary inspiration upon the moveable walls of the thorax.

Diminution of the capacity of the chest and expulsion of the air from the lungs, and consequently an expiration, induced by compression of the moveable walls of the thorax.

The arms of the patient are to be used by the operator as handles to open and close the chest.

This new method has been tested by experiment on the

dead body by the same apparatus, the elastic tube being securely fastened into the trachea, in order to avoid the sources of fallacy mentioned above.

The body was placed on its back, supported and a little raised by a small pillow placed under the shoulders. The height of the column of fluid having been first carefully noted, the arms of the subject were raised, and then steadily extended upwards by the sides of the head, so as to draw up the shoulders and put the pectorals on the stretch, elevate the ribs, and consequently enlarge the cavity of the chest. The result was that the fluid in the bent tube rapidly fell, and so considerably as to recede high up in the leg of the instrument nearest the body, that is to say, the tendency to a vacuum produced in the chest drew the air into the lungs.



The shoulders and arms were next pressed down upon the sides of the chest, and immediately the fluid rose as much above its usual level in the further leg of the apparatus as it did in the foregoing experiments; demonstrating:

1stly. That the actual capacity of the chest was increased, and air drawn into the lungs by the constrained action of the muscles of respiration upon the moveable walls of the thorax.

2ndly. That expiration was produced by pressing the arms and shoulders down upon the sides of the chest.

3rdly. That the distinguishing feature of my method is the actual enlargement of the cavity of the chest—the elevation of the ribs above their ordinary or natural level.

Fig. 2.—Continuous line represents the ordinary state of the chest. Broken line represents the depression of the chest under pressure. Dotted line represents the enlargement of the chest, produced by the forced action of the muscles of inspiration. The space between the continuous line and the broken line indicates the extent of respiratory movements in the postural method. The space between the dotted line and the broken line indicates the extent of respiratory movements in my method.

It is, of course, of consequence to get as much air into the lungs as possible, because there can be but little doubt that fresh air is the proper stimulant to the respira-

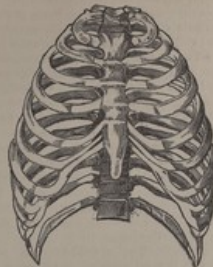


Fig. 3. Front view of the Bones of the Thorax.

tory efforts, just in the same way that light is to the eye and sound to the ear, but acting more entirely by reflex action. The quantity of air respired, according to my experiments on the dead body, appears to be about ten times greater in my method than in the postural method of Dr. M. Hall, and would be amply sufficient to supply fresh air to the lung of an asphyxiated person.

Before laying down practical rules for the treatment of apnoea, we may consider shortly the mechanism of respiration in man.

THE MECHANISM OF RESPIRATION IN MAN.

The general principle of the operation is this:—The lungs are divided into cavities of extreme minuteness; and these cavities or air-cells are all connected with the trachea by means of the bronchial tubes. The lungs themselves are suspended in a cavity that is completely closed, being

bounded above and around by the bony framework of the thorax, the interspaces of which are filled up by muscles and membranes, and being entirely cut off from the abdomen and below by the diaphragm. Under ordinary circumstances, the lungs completely fill the cavity. But the capacity of the thoracic cavity is susceptible of being greatly altered by the movements of the ribs, and by the action of the diaphragm and abdominal muscles. When it is diminished, the lungs are compressed, and a portion of the air contained in them is expelled through the trachea. On the other hand, when it is increased, the elasticity of the air within the lungs causes them immediately to dilate so as to fill the vacuum that would otherwise exist in the thoracic cavity, and a rush of air takes place down the air-tubes and into the remotest air-cells, to equalise the density of the air they include (which has been rarified by the dilatation of the containing cavities) with that of the surrounding atmosphere. The lungs themselves appear to be almost entirely passive instruments of the respiratory function. The dilatation of the cavity of the chest, which constitutes inspiration, is accomplished by two sets of movements—the elevation of the ribs, and the depression of the diaphragm. In tranquil breathing, the contraction of the diaphragm is alone nearly sufficient to produce the necessary enlargement of the thoracic cavity, the position of the ribs being very little altered. In the act of deep inspiration, the ribs (whose ordinary direction is forwards, sloping downwards), under the influence of their elevator muscles, namely, the pectoralis muscles, major and minor, the serratus magnus, the scaleni muscles, and the intercostals, pass from the sloping to the horizontal position. By this change, the dimensions of the chest are enlarged in the transverse as well as in the antero-posterior direction, for the middle curved portions of the ribs are carried outwards, and therefore brought further apart from each other, and their sternal extremities are moved forwards, accompanied by the sternum, the distance of which from the dorsal vertebrae is thereby increased. When the respiratory movement is very forcibly performed, the scapula is itself drawn upwards, thus producing an increased elevation of the ribs and an unusual enlargement of the upper part of the thoracic cavity. When deep expiratory action is to be

performed, the ribs descend by the action of the muscles of the spine and the abdomen, the diaphragm being altogether passive. In this manner, by the regularly alternating dilatation and contraction of the thoracic cavity, the air within the lungs is alternately increased and diminished in amount, and thus a regular exchange is secured. The number of the respiratory movements (that is, of the acts of inspiration and expiration taken together) may be estimated at from fourteen to eighteen per minute. (*Carpenter's Physiology.*)

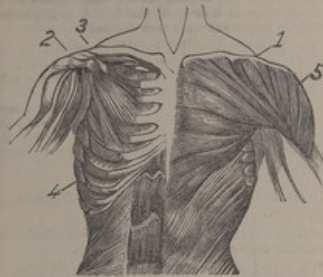


Fig. 4. Diagram of the Muscles in Front of the Chest.

1. The pectoralis major arising from the clavicle and from the cartilages of the true ribs, and converging towards the tendon of insertion into the bicipital groove of the humerus.
2. The pectoralis minor, arising from the third, fourth, and fifth ribs, near their cartilages, and converging to a tendon, which is inserted into the coracoid process of the scapula.
3. The subclavius muscle, which arises from the first rib, and is inserted into the costal aspect of the clavicle for nearly half its length.
4. The serratus magnus, placed upon the upper and lateral parts of the thorax, arising from the right upper ribs, and inserted into the scapula.
5. The deltoid, which arises from the external third of the clavicle and from the spine of the scapula, and is inserted into a prominence on the middle of the outer side of the humerus.

All these muscles are put on the stretch, and tend to raise the ribs, when the arms are extended upwards by the side of the head, as described in my method.

I may also remark that, from the peculiar mode in which the ribs are articulated with the spinal column at one extremity, and from the angle which they make with the cartilages that connect them to the sternum at the other, the act of elevation tends to bring the ribs and their cartilages more into a straight line, and to carry the former to a greater distance from the median plane of the body, whilst the sternum is also thrown forwards. Consequently the elevation of the ribs increases the capacity of the thorax, upwards, forwards, and laterally. Although the range of motion between each vertebra and the ribs attached to it is very limited, yet the whole framework of the chest enjoys such mobility, that by a deep inspiration its cavity is sometimes more than doubled.

I may also mention, that in difficult respiration the muscles of the limbs are made to assist in respiration—the patient seizing hold of any fixed object for the sake of a firm point for the muscles to act from; and that in deep respiration the greatest enlargement of the thoracic cavity in both sexes is made by the ribs, and not by the diaphragm. It appears very questionable whether the diaphragm is affected any further than being flattened, and that without descending.

It is unnecessary to enter upon the chemical phenomena of respiration.

I will now proceed to lay down a few practical rules for inducing respiration in cases of asphyxia.

With regard to the *Apnoea of Still-Born Children*, respiration may generally be excited by dashing cold water on the face and body, by blowing in the face, or by a slap with the flat of the hand on the nates.

Should these measures fail, the following rules for inducing respiration should be put in practice.

In cases of *Narcotic Poisoning*, artificial respiration may by these rules be kept up for any length of time, or until the poisonous matter is eliminated.



Fig. 1.—Diagram to illustrate the manner of performing my method. The asphyxiated patient is supposed to be in the act of drawing a deep inspiration. The ribs being elevated by the operator, who is stretching upwards the patient's arms.

The following Rules for the treatment of apnoea are deduced from actual experiment, and are in accordance with established physiological principles.

DR. HENRY SILVESTER'S RULES FOR RESTORING SUSPENDED ANIMATION.

RULE I.

To adjust the Patient's Position.

Place the patient on his back, with the shoulders raised and supported on a folded article of dress, and secure the feet.

RULE II.

To Maintain a Free Entrance of Air into the Windpipe.

Wipe the mouth and nostrils. Draw forward the patient's tongue, and keep it projecting beyond the lips. If the lower jaw be gently raised, the teeth may be made to hold the tongue in the required position. Should it be found necessary, the tongue may be retained in that position by passing a handkerchief under the chin and fastening it over the head.

RULE III.

To Imitate the Movements of deep Respiration.

Raise the patient's arms upwards by the sides of his head, and then keep them stretched steadily but gently upwards and forwards for a few moments. (This action enlarges the capacity of the chest by drawing up the ribs, and induces inspiration.)

Next, turn down the patient's arms and press them gently and firmly for a few moments against the sides of the chest. (This action diminishes the cavity of the thorax, by pressing down the ribs, and produces a forcible expiration.)

Repeat these measures alternately, deliberately, and perseveringly fifteen times in a minute.

RULE IV.

To Induce Circulation and Warmth, and to Excite Inspiration.

Rub the limbs from the extremities towards the heart.

Replace wet clothing by warm and dry covering. Occasionally dash cold water in the patient's face. These measures are perfectly compatible with the systematic performance of the imitation of the movements of respiration. A similar remark applies to the use of the warm water bath, or hot air bath, if required.

Explanatory Remarks.

RULE I. The posture recommended is not essential; but in this position the vital capacity of the chest is larger than in any other recumbent attitude. The bony framework of the chest is more free to move, and both sides can be expanded at the same time. This, in fact, is precisely the posture chosen by persons suffering from dyspnoea.

RULE II. In this way the patulous orifice of the windpipe is raised and drawn forward, so that nothing intervenes between it and the natural channel of air through the nose. The tongue is entirely prevented from falling back into the throat, whilst the extent to which the windpipe is put on the stretch is clearly indicated. The pharynx also is sufficiently opened to allow of the removal of liquids, etc., from the mouth, nose, pharynx, etc., if these have not been completely displaced by previous suitable treatment.

RULE III. This process in short accomplishes artificially for the patient exactly what he would himself effect, and by the same muscles, if he had but the will and the power to draw a deep inspiration.

When the ribs are raised the capacity of the chest is enlarged, and a tendency to a vacuum is induced.

The ribs are raised by the pectoral muscles, and the pectoral muscles are put on the stretch by the arms of the patient, and the arms of the patient are drawn up by the operator; the result is that the ribs are raised and the fresh air passes into the chest to occupy the enlargement thus produced; and alternately with this the vitiated air is expelled from the lungs by compression of the sides of the chest.

Should there be any spontaneous efforts to respire—and these efforts at first may not be repeated perhaps more often than twice in a minute—they should on no account be checked by officious interference. Great care

must be taken not to disturb the natural rhythm. The expirations might be made a little more forcible or the inspirations deeper, but that is all.

Possibly the elevated position of the arms, together with the muscular compression exerted on the veins of the upper extremities, might favour the descent of blood from them into the chest at the same time that the tendency to a vacuum produced in the thorax by the elevation of the ribs would induce a rush of fresh air into the lungs.

At the same time that the arms are extended steadily upwards, the lungs might be filled with air by a mouth to mouth inflation.

The following are some of the advantages of my Method:—

1. Inspiration may be made to precede expiration, or it may be second in order at the will of the operator.
2. The expansion of the thorax is artificially insured, and is wholly under the control of the operator.
3. It may be carried out when the patient is in the warm bath.
4. The patient is not liable to be injured by the manipulation.
5. The contents of the stomach are not liable to pass into the windpipe.
6. The tongue is prevented from obstructing inspiration.
7. Both sides of the chest may be equally inflated.
8. This process is entirely in harmony with that of nature.
9. A larger amount of air is inspired than by any other method.
10. This method is most easy of adoption.
11. Pure atmospheric air is inspired.
12. No apparatus is required.

Several successful cases of resuscitation have been recorded in the medical journals.

I subjoin a report from the *Lancet*, of Dr. Christian's paper on "Restoration from suspended Animation," read before the Royal Medical and Chirurgical Society, with some comments by Dr. Sharpey, F.R.S.

Also two letters from Sir Benjamin C. Brodie, Bart, F.R.S., which will be read with much interest.

Royal Medical and Chirurgical Society, Tuesday, January 22nd, 1861. MR. SKEY, F.R.S. President, in the Chair. On the Restoration of suspended Animation in persons apparently drowned. By DR. CHRISTIAN.

"As to the mode of performing artificial respiration, the method recommended by the Life-boat Institution is what Dr. Marshall Hall called his 'Ready Method,' while that now used by the Royal Humane Society is the method of Dr. Silvester. On Dr. Marshall Hall bringing his method under the notice of the Royal Humane Society, the Committee adopted means immediately to give it a fair trial. Copies of his instructions were sent to all their medical officers, numbering 120, and the boats of the society on the Serpentine had a platform made on each, on which to manipulate directly the body was taken from the water, and the boatmen were instructed and practised in the performance of the operations as he directs. After giving the method a full trial in about fifteen cases, the very intelligent superintendent, the boatmen, and the author became so satisfied of its inefficiency to restore animation, and of the difficulty of properly carrying out the manipulations, that he felt himself justified in representing those facts to the Committee, and in adopting the plan recommended by Dr. Silvester, which he believed in every way to be superior, more manageable, less likely to injure the patient, will fill the chest with and expel air from it more fully, and will not force the contents of the stomach upwards, and in the way of respiration."

The following are the directions for treating the asphyxiated at the receiving house, Hyde Park:—

"Wipe the mouth and nostrils directly the body is taken from the water.

"Use Dr. Silvester's method; at the same time let the body be taken as quickly as possible to the receiving-house, and place it in the bath up to the neck.

"Raise the body in twenty seconds from the water, and dash cold water against the chest.

"Pass ammonia under the nose. Use again Dr. Silvester's method, and the inflating apparatus if it fail.

"Remove the body from the bath and rub the surface

with dry hot towels, perseveringly continuing the other treatment."

After many experiments, the author had come to the conclusion that inflation of the lungs by Dr. Silvester's method, or by the Society's apparatus, is the first remedy, and the shock of the warm bath the second; that after eight minutes' complete submersion, recovery is hopeless; and that when ten minutes elapse, after being taken from the water, without any effort at respiration, it is equally so.

On the subject of the warm bath, which has excited so much discussion as a remedy, he remarked that it must be understood that it is used as an immediate and powerful excitant; and it had so frequently happened, (twice while he was actually present) that a person brought in as asphyxiated, who, to the bystanders, was apparently quite dead, immediately on being placed in the bath, gave the sob or gasp, which is the precursor of respiration, that it might be boldly stated to be a most valuable adjunct to treatment, and properly managed in no way pernicious.

Dr. Sharpey having had the honour of presenting the paper to the Society, could not let it pass without remark He would observe, with reference to the method of Dr. Marshall Hall, that he had on one occasion spoken favourably of it, but had seen reason to alter his opinion after more mature consideration of the subject, and after hearing the practical experience of the Royal Humane Society. Dr. Sharpey considered that Dr. Marshall Hall's method could only claim one advantage, and it was not clear that it had even that. This supposed advantage is that the tongue falls forward, and thus does not embarrass respiration. *He thought that Dr. Silvester's method attained this object without any of the disadvantages of the Ready Method.*

The disadvantages of the Ready Method were several. It must be remembered that a body submerged for some time is practically a dead body, and serious mischief has not unfrequently arisen from rough handling. Again, the constant turning of the body renders it very difficult to apply warmth, or carry out the other auxiliary means systematically; but, above all, it does not even fulfil its first object of changing the air in the chest.

Dr. Marshall Hall cited experiments in support of his

view; but the want of precision in making them is very striking. He (Dr. Sharpey) could not attach any importance to the results of experiments so conducted. Dr. Silvester had repeated them in a more precise way, and could not get a displacement of more than one cubic inch of air.

It would be asked, however, what answer should be made to the many statements of the success of the Ready Method. He would reply, that many of them were in cases of still-born infants, a part of whom, he believed, would recover without any assistance if left alone to themselves, or, at least, by very simple means. Then again, as Dr. Silvester states, there is no air in the lungs of infants. In reference to adults, he (Dr. Sharpey) believed himself right in saying that in many of the cases of recovery after submersion, respiration commenced spontaneously as soon as the patient reached the air. If in such cases Dr. Marshall Hall's method is begun at once, it would be unfair to give the credit solely to it. May it not even be, as suggested by Sir B. Brodie, that recovery often follows, not from the means used, but in spite of them?

SIR B. BRODIE, BART, F.R.S., *on the Marshall Hall Method.*

The restoration of persons apparently drowned has been attracting so much attention since Dr. Christian's able paper was read before the Medico-Chirurgical Society, that the two following letters from Sir Benjamin Brodie will be read with interest:—

"14, Savile Row,
February 13, 1860.

"DEAR SIR,

"I cannot say that I have ever entertained any favourable opinion of what the late Dr. Marshall Hall called his 'Ready Method of restoring animation.' It seems more than probable that the repeated compression of the chest, for the purpose of expelling all the air from the lungs, would have an injurious effect on the action of the heart. The air drawn into the lungs by the elasticity

of the parietes, or walls of the chest, would fall very short of that inhaled in an ordinary inspiration, and this opinion is confirmed by the experiment of Dr. Silvester.

"Then the mechanical disturbance, occasioned by the continual rolling and tumbling about of the body, cannot, I apprehend, be otherwise than mischievous where the chances of life and death are equally balanced, and must, in all cases, interfere with the natural process of recovery.

"By the method proposed by Dr. Silvester, certainly more air would be drawn into the lungs than by that of Dr. Marshall Hall, and with much less disturbance to the body generally. In some animals, as the rabbit, a very sufficient quantity of air can be drawn into the lungs by a similar method, that is, by the mere elevation of the ribs. How far in the human subject Dr. Silvester's process would be a sufficient substitute for natural respiration, I do not venture to say; it is a question to be decided only by experiment.

"Where the apparatus of the Royal Humane Society for the artificial inflation of the lungs is at hand, I have no doubt that this affords the surest and safest means for imitating natural respiration if the necessary precautions are observed in using it. At the same time, I have no doubt that the late intelligent medical assistant of the Royal Humane Society at Brompton, Dr. Woolley, was correct when he informed me that practically the cases of drowned persons, in which artificial respiration can be employed with advantage, are very few indeed. The first thing to be done is to take the body out of the water as soon as possible, it being always borne in mind that the case is one which admits of no delay, as except under some very rare and peculiar circumstances, there is little chance of life being restored where the period of complete submersion exceeds three minutes and a half. The next thing is to do nothing that can interfere with the natural process of recovery. It is only in those cases in which there is no sign of any effort to breathe spontaneously that artificial respiration should be had recourse to, and it is only in a small proportion of these that it proves successful. If you or any one else should be desirous of knowing what more I have to say on the subject of the treatment of those who suffer from strangulation or drowning, I would refer you to what I have published in my

volume of 'Lectures illustrative of certain points in Pathology and Surgery.'

"I am, dear Sir,

"Yours truly,

"B. C. BRODIE.

"Lambton J. H. Young, Esq.,
"Secretary to the Royal Humane Society."

"Victoria Hotel, St. Leonards-on-Sea,
"October 11, 1860.

"DEAR SIR,

"I observe that the first instruction of the Royal Humane Society with regard to the treatment of drowned persons is, 'that no time should be lost.' I conclude, therefore, that these instructions agree with those of the Life Boat Institution; that there should be no delay in carrying out whatever measures are necessary for the purpose of resuscitation. I also conclude, that it never could have been intended that the drowned person should be taken to a house if the house were not close at hand. The only real difference of opinion then seems to be as to the use of the warm bath and the method to be adopted, with a view to restore respiration. Now, with regard to the first of these points, what is really wanted is that the body should not lose its natural heat, and whether this be accomplished by dry application or by moist application, as the moisture cannot penetrate beyond the cuticle, would appear to be of small importance; and I own that the practical observations on the use of the warm bath, made by the officers of the Royal Humane Society, seem to me to be more likely to lead us to the truth, than the theoretical objections to it made by Dr. Marshall Hall. At the same time, I certainly think it important that the temperature of the bath should be rather below—certainly not above the natural temperature of the living body.

"With regard to the second point, I do not know that I need do more than refer to what I have said on the subject of Dr. Marshall Hall's proposal. In a letter which I wrote to you on the subject formerly, and which is printed in one of the Royal Humane Society's reports,* I may, however, take the opportunity of briefly stating:—

* The letter printed above.

"1st. That the interval, during which artificial respiration can be employed, is very limited.

"2ndly. That if the Royal Humane Society's apparatus be at hand, and the medical man present knows how to use it, this affords by far the safest and surest method of imitating natural respiration.

"3rdly. That there is great danger, that the rolling and tumbling about of the body, as proposed by Dr. Marshall Hall, would interfere with the natural process of recovery; at the same time, that it is very doubtful, whether by this method a sufficient quantity of air could be drawn into the lungs to answer any useful purpose.

"4thly. That, at any rate, of the two methods that of Dr. Silvester would be much more effectual, and much less calculated to do injury.

"In the treatment of drowned persons, as in the treatment of disease, the first rule of the medical art is to do nothing that may interfere with the natural process of recovery. When a drowned person is first taken out of the water, if the heart have not actually ceased acting, there is generally a spontaneous effort to respire; that effort may not be repeated perhaps more than twice in a minute, or even not so often in the first instance. But if the attempt to respire has once begun, it will, in the majority of instances, continue, the intervals becoming gradually shorter; and I cannot doubt that rough usage, as that which Dr. Marshall Hall recommended, would interfere with it, although it is not very improbable that every now and then some one may recover in spite of it. With regard to the authorities referred to in favour of the practice of rolling about the body, I may observe:—

"1st. That I do not know who are the medical bodies referred to as having approved of Dr. Marshall Hall's method. I certainly never heard of the question having been submitted to any of the medical colleges or universities.

"2ndly. That I attach little importance to the names of three hundred medical men, who are said to have signed a memorial on the subject, knowing, as I do, how easy it is to procure a great number of signatures to any document, when you have two or three names to begin with; and knowing also that the question as to the mode of death from drowning, is altogether a physiological one, to which

the attention of very few medical men has been directed, with the exception of those who are actually engaged in teaching physiology.

"I send you these observations in compliance with your request; my conclusions have not been hastily formed. The mode of death from drowning, and the treatment afterwards required, formerly occupied a great deal of my attention, and was the subject of a great number of experiments on animals; but I have not trusted to these alone, having had frequent conversations on the subject with a very experienced and intelligent officer of the Royal Humane Society, the late Dr. Woolley, and since then with Dr. Christian.

"L. J. W. Young, Esq.,
"Secretary.

"Yours truly,
B. C. BRODIE."

T. RICHARDS, 27, GREAT QUEEN STREET.

AND 29, SOUTH FREDERICK STREET, EDINBURGH.
(THE RIGHT OF TRANSLATION IS RESERVED.)

DIRECTIONS
FOR
TREATING THE ASPHYXIATED
AT THE
RECEIVING HOUSE, HYDE PARK.

Wipe the mouth and nostrils directly the body is taken from the water.

Use Dr. Silvester's Method; at the same time let the body be taken as quickly as possible to the Receiving House, and placed in the warm bath up to the neck.

Raise the body in twenty seconds from the bath, and dash cold water against the chest and face.

Pass ammonia under the nose; use again Dr. Silvester's Method, and, if it fail, the Inflating Apparatus.

Remove the body from the bath and rub the surface with dry, hot towels, perseveringly continuing the other treatment.

CLINICAL RESEARCHES

DIFFERENT DISEASES OF THE LARYNX, TRACHEA AND PHARYNX,

EXAMINED BY THE LARYNGOSCOPE

PRECEDED BY

HISTORICAL REMARKS ON THE PRACTICAL USE OF THE LARYNGOSCOPE

BY

DR. LEWIS TÜRCK,

PHYSICIAN TO THE GENERAL HOSPITAL AT VIENNA.

LONDON 1862.

WILLIAMS & NORGATE,

41, BEAUCHAMPEL STREET, COVENT GARDEN.

AND 29, SOUTH FREDERICK STREET, EDINBURGH.

(THE RIGHT OF TRANSLATION IS RESERVED.)

CLINICAL RESEARCHES
 DIFFERENT DISEASES OF THE LARYNX, TRACHEA AND PHARYNX
 BY J. LEWIS TUCKER
 M.D.
 H. Engel & Son at Vienna, W. Carlo 726.

The present Clinical Researches, with the exception of the additions in the notes, are a translation of some readings and lectures, made by the author in Vienna.
 A more detailed statement of the clinical observations accompanying the researches, and the practical representations of the same, are contained in the "Theatrum Anatomicum" of the author, published from the two first numbers of the "Allgem. Wien. med. Zeitung" of 1861 (1862) to 1862 (1863).
 Although I have not published the present part of the

PREFACE.

Since I have succeeded in transforming the laryngoscope into an instrument generally useful for practical purposes, I have made by means of it, a great number of observations in diseases of the larynx, and several also in the diseases of the trachea, and pharynx.
 Many opportunities offered themselves, and principally in my wards, in the general Hospital at Vienna, and so much the more, as patients with such diseases were admitted chiefly into my department; an arrangement, for which I have to thank the distinguished Director of that institution, Prof. Helm.
 A part of my observations will be found published in the *Zeitschrift der Ges. der Aerzte*, and in the *Allgem. Wien. med. Zeitung* from December 1858 to 1860.
 Later I compiled the chief results of them in more extensive treatises, on different diseases of the above mentioned parts, which appeared in the *Allgem. Wien. med. Zeitung* of the years 1861 and 1862, partly as readings at the meetings of the Imperial Royal medical Society at Vienna, and partly as lectures delivered before my pupils.
 In these treatises I have directed my attention, not only to the pathology, but also principally to the foundation of a diagnosis.

The present „Clinical researches“ with the exception of the additions in the notes, are a translation of these readings and lectures, made by Dr. Charles Dickin.

A more detailed statement of my clinical observations accompanied with numerous chromo-lithographical representations by the renowned artist Dr. Elfinger, will soon appear in German.

The „Historical remarks“ are translated from the two first chapters of the French edition (1861) of my „Practical method of Laryngoscopy“ (1860).

Although I have abridged the historical part of the original German edition of the just mentioned work to a few pages, and restricted myself to republishing an extract of declarations, which relate to my priority, the same thing was not allowed me in the French edition, and I now find myself induced to lay before my English readers, also a detail of the matter.

Finally, I must call the attention of the reader who wishes to make use of the laryngoscope himself, to my just mentioned „Practical method,“ illustrated with many drawings, as well as to my „Late improvements of laryngoscopical and rhinoscopical apparatus.“ (*Allg. Wr. Med. Ztg. Nr. 28, 32 and 35, 1861.*)

Vienna, August 1862.

The Author.

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ERRATA.

Page	3	line	21	from above for	Nr. 14*	read	Nr. 11.*
"	"	"	25	"	"	"	"
"	"	"	28	"	"	"	"
"	"	"	34	"	"	"	"
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"Nr. 14*" read "Nr. 11.*"
 "April 10." "April 12.*"
 "28." "29.*"
 "Nr. 32." "Nr. 52.*"
 "The tuberculous ulcers of the epiglottis" read "The ulcers of the epiglottis in tubercles of the lungs."
 "tuberculous ulcers" read "ulcers in tubercles of the lungs."
 "At length" read "Finally."
 "one, and a half long" read "half an inch long."
 "the glottic ligaments" read "the lower glottic ligaments."
 "the ligaments" read "the lower ligaments."
 "the glottic ligaments" read "the lower glottic ligaments."
 "Nr. 25, June 21" read "Nr. 22, May 31."
 "posterior" read "anterior."

on the
practical use of the Laryngoscope.

However, as far as has been ascertained, the speculum has not been used in real cases of morbid affections either by Liston, Garcia, or any other persons; and if such experiments have actually been made, they have not been perseveringly followed up, which is probably owing to the fact, that experiments of this kind though practised on many and various individuals, at first generally prove a complete failure. The most insufferable vomiturations are excited by them,

2) The method which I have adopted is very simple. It consists in placing a little mirror, fixed on a long handle suitably bent, in the throat of the person experimented on, against the soft palate and uvula. The party ought to turn himself towards the sun, so that the luminous rays falling on the little mirror, may be reflected on the larynx. Observations on the human voice. The London, Edinburgh and Dublin Phil. Magaz. Vol. X, 1855, p. 218.

and no satisfactory result as to exploring can be obtained: this is, at any rate, what I have frequently had occasion to observe during my first attempts at experimentation, with glasses answering pretty well to Garcia's vague description of what they ought to be. Nevertheless, being convinced that the laryngoscope might become an instrument of great practical utility, I took upon myself to improve upon its shape, and if possible to alter it so as to make it generally useful for medical purposes.

After a long series of most varied experiments made by myself during the summer of 1857, on dead subjects, and on the patients under my care in the „General Hospital“, I succeeded in giving the laryngoscope so convenient a shape as suited it best for the purposes of examination both of „the larynx, and adjoining parts, on a great number of individuals“¹⁾.

At a meeting held by the I. R. medical Society of Vienna, on the 9. April 1858, I made known this result I had obtained during my reiterated experiments, a result that proved the more satisfactory when compared with the fruitless attempts that had preceded, and clearly showed that the prevailing notion of the unserviceableness of this instrument was unfounded. It was at the same meeting that I first explained the principles upon which my method rests, and which I promised, at a later period to publish them at full length²⁾. At this meeting, I also showed a few specimens of my laryngo-pharyngeal speculums, which have since undergone no material alterations³⁾.

Since then I have been enabled by constant study, and much practice, to do much towards improving the system of laryngoscopy adopted by me, and these improvements have been made known to the public by the organs of the medical press.

These articles in the journals, to which my first publications on former experiments and researches have been added, together

¹⁾ Report of the Imp. R. Society of the Physicians of Vienna at a meeting held on the 9. April 1858 (section of Physiology and Pathology), and published by them in their own „Medical Review“ (Zeitschr. d. k. k. Ges. d. Aerzte Nr. 17, April 26., 1858).

Since February 1856, it has been my office to superintend the treatment of all those who were in my wards destined for internal diseases in general, besides those in two wards principally for nervous diseases. In the year 1857 I have treated in the 7 wards of my department 1873 patients, among which there were only 275 cases of diseases of the nervous system. I only mention these numbers in order to deny the false statement lately made by Dr. Czermak (See Virchow's Archiv, Dec. 1861) that I had then only made laryngoscopic experiments on several patients with nervous diseases.

²⁾ These publication in details with illustrations followed on the 28th of June 1858 (Zeitschr. d. Ges. d. Aerzte Nr. 26.).

³⁾ Report (Zeitschr. d. Ges. d. Aerzte, Nr. 17., April 26., 1858).

with some recent additions of mine, form the subject of my treatise⁴⁾; and if I have now and then availed myself of a few remarks from other professional men, which seemed to throw some light upon the subject, I have never done so without mentioning their names.

I think that an account of the very numerous particulars all which I have gained by experience cannot fail, to awake some interest in those who intend to make experiments in laryngoscopy; as well as what I have said at the end about rhinoscopy.

The following is a list of the different treatises and notes which relate to my researches on the subject.

1. Report of a meeting of the Section of Physiology and Pathology of the I. R. Society of the Physicians of Vienna, 9. April 1858 (Zeitschr. d. k. k. Ges. d. Aerzte, Nr. 17, April 26., 1858).

2. The laryngoscope and mode of using it (Zeitschr. d. Ges. d. Aerzte, Nr. 26, June 28., 1858).

3. Of an artifice in examining the larynx (artificial dispositions) (Zeitschr. d. Ges. d. Aerzte, Nr. 8, Febr. 21., 1859).

4. A description of several cases of morbid affections of the larynx examined by means of the laryngoscope (Zeitschr. d. Gesellsch. d. Aerzte, Nr. 14, March 14., 1859).

5. Of the laryngoscope and mode of using it in affections of the larynx and adjoining parts — (Containing an account of eleven new pathological cases.) (Allgem. Wiener med. Zeitung, Nr. 15, 16, 17, 18, 19, 20, 21, 22, 25, 26 from April 10., to June 28., 1859).

6. Of a reflecting apparatus and of the examination of the back part of the larynx, (Allgem. Wiener med. Zeitung Nr. 48, November 28., 1859).

7. Improvement in the mode of exploration by means of the laryngoscope. (Sitzungsberichte der mathem. nat. Cl. d. kais. Akad. d. Wissensch. XXXVIII. Bd. 1859.)

8. Of obtaining magnified views of the larynx and of some artifices in the laryngoscopic examination. (Zeitschr. d. Ges. d. Aerzte, Nr. 32, December 26., 1859).

9. Of a proper instrument for pressing down the tongue. (Zeitschr. d. Ges. d. Aerzte Nr. 3, January 16., 1860).

10. Of the position the mirror of the reflecting apparatus should be held in, whilst examination is taking place. (Allg. Wien. med. Zeitung Nr. 5, January 31., 1860).

11. Of some recent cases of laryngeal affections examined by means of the laryngoscope. (Allgem. Wr. med. Ztg. Nr. 8 und 9, Febr. 21. und 28., 1860).

12. Of several laryngoscopic instruments. (Allg. Wr. med. Ztg. Nr. 16, April 17., 1860.)

⁴⁾ Viz. Practical method of Laryngoscopy.

13. Additions to Laryngoscopy and Rhinoscopy. (Zeitschr. d. Ges. d. Aerzte Nr. 21, May 21., 1860.)

14. Laryngoscopy and communications on ulcers of the larynx. (Allg. Wr. med. Ztg. Nr. 25, June 19., 1860.)

15. Notes on Rhinoscopy. (Allg. Wr. med. Ztg. Nr. 33, August 14., 1860.)

16. Notes on Laryngoscopy. (Allg. Wr. med. Ztg. Nr. 34, August 21., 1860.)¹⁾

Dr. Czermak having lately published as an addition to the French edition of his treatise, a „communication“ addressed to the „Académie des Sciences“ and to the „Académie de médecine“, in which he pretends to claim the right of priority over me, respecting the introduction of the laryngoscope in the medical practice, I feel myself compelled to answer his illegitimate pretensions merely in the following terms.

Dr. Czermak who, during the winter of 1857—1858 had borrowed from me my laryngoscopes, as he told me expressly, to make some physiological researches, and especially with a view to repeat the experiments made by Garcia, published an article²⁾, the sole object of which has been that of recommending the laryngoscope to the medical world for general use. At a subsequent meeting of the Society of Physicians, held on the 9. April, 1858, the first since the publication of Dr. Czermak's article, I have protested against it, and Dr. Czermak shortly afterwards expresses himself thus³⁾: „I have simply related, touching the most essential points only, what has taken place, in very few words it is true, and perhaps in a manner wanting perspicuity⁴⁾: Nobody, however, can entertain any doubt as to the fact of Dr. Türk's deserving the merit of being the first, at least in this country, who successfully introduced in his wards at the „General Hospital“, since the summer of 1857, Garcia's method of examination, and that too for medical purposes.“

In a note annexed to this article, Dr. Czermak adds: „When I caused an article to be inserted in Nr. 13 of this paper, tending to call the attention of professional men to the practical

¹⁾ Since the French edition the following notes have been published 17. Notes on Laryngoscopy. (Allg. Wien. med. Zeitung Nr. 44. Octob. 30., 1860. 18. Of a new spatula of the tongue. (Allg. Wien. med. Ztg. Nr. 13, March 26., 1861. 19. Late improvements of laryngoscopy and rhinoscopy apparatus. (Allg. Wr. med. Ztg. Nr. 29, 37, 38. Juli 9., Aug. 5. and 27. 1861. 20. Notes on Rhinoscopy. (Allg. Wien. med. Zeitung Nr. 17, April 29., 1862.)

²⁾ Du laryngoscope et de son emploi en physiologie et en médecine. Paris 1860, p. 105—112.

³⁾ Wien. mediz. Wochenschr. Nr. 13, March 27., 1858.

⁴⁾ Wien. med. Wochenschr. Nr. 16, April 17., 1858.

⁵⁾ In Wien. med. Wochenschr. Nr. 13, March 27., 1858.

utility of Garcia's speculum, I really was under the impression, that Dr. Türk, who had lent me the laryngoscopes he had had made according to his own directions, and which I used for physiological experiments, had altogether ceased to make his experiments for diagnostical purposes, on his patients at the hospital, which as I know, and mentioned in the article, he had undertaken during the previous summer.⁵⁾

Had I been aware of the fact which I have just heard, i.e. that Dr. Türk had suspended his researches only during the winter, owing to the absence of direct solar light in the wards of his department, I should certainly have abstained from causing the said article to be inserted in Nr. 13 of the Vienna med. weekly Gazette, and to prevent my recommending the use of the laryngoscope in medical cases, a recommendation essentially suggested by the results of experiments made on my own self, from not seeming to have been impelled by the desire to detract from Dr. Türk's priority, which I have never claimed, and which is incontestably his own¹⁾.

¹⁾ Dr. Czermak says: „Im Wesentlichen habe ich diesen Hergang, wenn auch mit wenigen Worten und vielleicht nicht ausdrücklich genug loc. cit. (Wien. med. Woch., Nr. 13) angedeutet, obschon Niemand im Zweifel darüber bleiben konnte, dass in der That Herrn Dr. Türk das Verdienst gebühre, Garcia's Untersuchungsmethode wenigstens hier zu Lande zuerst, d. i. seit Sommer 1857, zu medizinischen Zwecken auf seiner Abtheilung mit Erfolg angewendet zu haben.“

In a note Dr. Czermak adds: „Als ich in Nr. 13 dieser Wochenschrift einen Artikel einreichen liess, in welchem ich die praktischen Aerzte auf die Verwerthung des Garcia'schen Kehlkopfspiegels aufmerksam machte, war ich der Meinung, Herr Prim. Dr. Türk, dessen nach seiner Angabe construirter Spiegel ich mich zu meinen ersten physiologischen Beobachtungen bediente, hätte die, wie mir bekannt war und ich auch in jenem Artikel andeutete, im abgelaufenen Sommer an Kranken seiner Abtheilung vorgenommenen Versuche einer Verwendungs dieses Spiegels zu diagnostischen Zwecken gänzlich fallen lassen.“

Hätte ich gewusst, dass, wie ich erst jetzt erfahre, derselbe seine Untersuchungen den Winter hindurch wegen mangelndem direkten Sonnenlicht in seinen Krankensälen nur unterbrach, so würde ich den in Nr. 13 enthaltenen Aufsatz unterdrückt haben, um meiner wesentlich auf Beobachtungen an mir selbst gestützten Empfehlung des Kehlkopfspiegels zu praktischen Zwecken nicht den Anschein zu geben, als wäre sie geschehen, um dem Prim. Dr. Türk die Priorität, auf welche ich übrigens nirgends Anspruch gemacht habe, zu entziehen, denn diese gebührt ihm jedenfalls ganz unbestreitbar.“

If one year later¹⁾ Dr. Czermak has had the quite new idea of retracting these so clear and so precise explanations which he has given as he mentioned in his „Communication“ after Dr. Türk had protested in an irritable manner against the violation of his intellectual property²⁾ pretending to have given these explanations out of regard for old colleagues and the members of the „Directorial Board“ of the medical Society of Vienna³⁾, some of whom were desirous of avoiding the unpleasantness of a polemical contention in the Papers, or „out of mere good-nature“ („Communication“), or, as he did not hesitate in asserting (loc. cit. Nr. 17), „because I was his senior“, it will not be difficult for the reader to judge of the importance to be attached to these reasons.

Dr. Czermak repeats constantly that I had abandoned my experiments before his first publication came out; this is quite erroneous. I have continued my researches during the summer and autumn of 1857, and have only discontinued them in the winter owing to a want, of proper solar light, which not even Ruef's ophthalmoscope with a stand used by Dr. Czermak in his experiments on Autolaringoscopy could supply; I resumed them, however, at the close of the winter 1857—1858, that is before Dr. Czermak's first publication had appeared. And Dr. Czermak, who placed implicit reliance in the „verbal communications of well-informed persons“, answered to the invitation he received from me, June the 21. and November the 29.⁴⁾ to publish whatever he had to say on this head, by a most insignificant letter written by Dr. Brücke, which may be read in a note annexed to his „Communications“, and in which no reference whatever is made to the introduction of the laryngoscope into common practice⁵⁾. Dr. Czermak was, on the contrary, well aware that I had not altogether discontinued my researches, as it may distinctly be inferred from the tenor of the subjoined note from Dr. A. Elfinger⁶⁾, a copy of

¹⁾ Wien. med. Wochenschr. Nr. 17, April 23, 1859.

²⁾ In the Wiener med. Woch. Nr. 17. Dr. Czermak alludes to simple members of the society, now he promotes them to members of the „Directorial Board“, which moreover is of no consequence.

³⁾ Allgem. Wiener med. Zeitung.

⁴⁾ This may be seen from a letter of Prof. Brücke dated the 15. of November 1860, which I possess. See also my „Rectification“ in: Archiv of Virchow, Vol. 23, number 3 and 4, 1862.

⁵⁾ I hereby declare that in the second half of the month of March, and anyhow before the 27. March 1858, Dr. Türk has, in my own room and presence demanded back from Dr. Czermak the laryngosco-

which I also caused to be inserted in Allg. W. med. Zeitung of the 21. June 1859.

Another circumstance, which proves that I had not given up my experiments, is the fact that I was able to communicate such results of my experiments to the Society of Physicians, at a meeting held on the 9. April 1858 as before mentioned (see p. 2); another unequivocal proof is that, since I had lent Dr. Czermak my instruments, I had ordered others to be made, which were shown by me at the same meeting of the Society of Physicians April 9., 1858, and a descriptive account of which is given in the report of this meeting on 9. of April 1858 (see p. 11.)

In fact Dr. Czermak insists on having an evident proof of my having abandoned pursuing my researches in the simple circumstance that Dr. Türk had till that moment never seen a violation of his rights in the experiments well known to him, which I made in the syphilitic wards, in order to render the use of the laryngoscope in common practice possible — and, moreover, that Dr. Türk during the whole time never once opposed my experiments although their object was known to him.

The truth of it is, that on the 16. March 1858 Dr. Czermak, accompanied by Dr. Gruber, then assistant physician of the syphilitic wards at the Hospital, called upon me to obtain permission to use my laryngoscope, in these wards, and in a letter from Dr. Gruber, still in my possession, this gentleman declares that he (Dr. Czermak) wished the more to obtain Dr. Türk's consent, as he knew that Dr. Türk, who had lent him his instruments, had only experimented with them on patients of his own wards. Therefore there was here no question about „rendering possible the use of the laryngoscope in common practice.“

pes he had lent him, adding that he stood in need of them to resume his researches. Vienna, April 28. 1859.

(Signed) Dr. Ant. Elfinger.

Ich bestätige hiemit, dass Herr Primararzt Dr. Türk in der zweiten Hälfte des Monats März 1858, jedenfalls vor 27. dieses Monats, in meiner Wohnung und meiner Gegenwart von dem Herrn Prof. Dr. Czermak die Kehlkopfspiegel zurückverlangte, welche er letzterem geliehen hatte, mit dem Bemerkten, dass er dieselben zur Fortsetzung seiner Untersuchungen selbst wieder benötige.

Wien, am 28. April 1859.

Dr. Ant. Elfinger.

By giving my consent to Dr. Czermak, and it would have been difficult for me to refuse it him, for he came accompanied by Dr. Gruber, I certainly did not forfeit my right of priority in favor of Dr. Czermak. — And yet eleven days had hardly elapsed when Dr. Czermak published an article in a medical journal ¹⁾, in which he tried, to introduce, under his own name, and with the greatest selfconfidence, the laryngoscope into common practice. Thence it is evident that the interval of time given to Dr. Czermak for "rendering the use of the laryngoscope possible in the syphilitic wards" would have been too short.

Further, in a second article ²⁾ Dr. Czermak declared that, he had "based his recommendations of the laryngoscope for the medical practice, essentially upon the experiments made on his own self" (see what precedes). But it is evident that he had not gone through any of those experiments, which he pretends to have "hidden from no one", either in the syphilitic or any other wards, and that if ever he has made them, they must have proved a failure.

In fact, at the time of my communication to the Society of Physicians and of his first publications, Dr. Czermak was in the greatest ignorance of what relates to the application of the laryngoscope in medical practice.

Dr. Czermak's own avowal, which I have just quoted, is a new proof of his ignorance concerning the practical application of the laryngoscope in medical practice. For it is in fact evident, that "experimenting on oneself" cannot give a general insight into those difficulties, which a variety of circumstances in different individuals is apt to present; — nor will the method of self-experimentation, even admitting the practitioner to be acquainted with the different difficulties and enable him to surmount them whilst experimenting on others.

Dr. Czermak gives an other proof by the wants of any hints whatever upon the mode of manipulation of the laryngoscope, and again, by expressing such inadmissible recommendations as the following: viz. "to use, in order to obtain a view of the anterior angle of the glottis, two mirrors, placed over one another and made to move on a variable angle, the inferior mirror being carried as far along the posterior part of the pharynx, as will enable it to reflect the image obtained by it in the

¹⁾ Wien. med. Wochenschr. Nr. 13, March 27, 1858.
²⁾ loco cit. Nr. 16, April 17, 1858.

upper glass, — or to make use of a convex glass with short focus³⁾, for the same purpose (to see the anterior angle of the glottis).

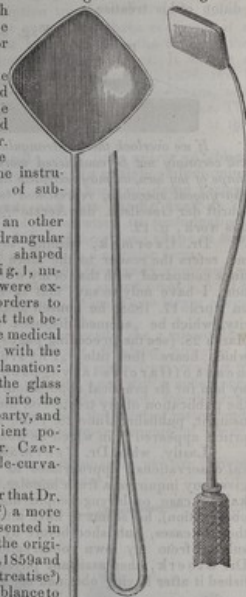
It was only after the publication of my detailed treatise, June 28, 1858 on the laryngoscope and the method of its application, that Dr. Czermak and others have learned the application of the instrument in a greater number of subjects.

Dr. Czermak gave an other proof, by proposing the quadrangular mirror, an inconveniently shaped instrument represented in Fig. 1, numerous specimens of which were exhibited and offered at his orders to the practitioners of Vienna at the before mentioned meeting of the medical Society, on April 9, 1858, with the following rather puzzling explanation: "Bend the stalk, so that the glass may easily be introduced into the wide-opened mouth of the party, and be brought into a convenient position⁴⁾". At this period Dr. Czermak also indicated a double-curvature of the stalk.

It was nearly a year later that Dr. Czermak made known ⁵⁾ a more convenient instrument represented in Fig. 2, which is drawn from the original in the W. med. Woch. Nr. 10, 1859 and in the French edition of his treatise⁶⁾ and already bears some resemblance to my own instrument. Finally in 1860 Dr. Czermak published a new laryngoscope represented in

Fig. 1.

Fig. 2.



¹⁾ Wien. med. Woch. Nr. 16, April 17, 1858.
²⁾ Wien. med. Woch. Nr. 10, March 5, 1859.
³⁾ Du Laryngoscope, Paris 1861, p. 21.

Fig. 3, drawn from the original illustration in the French edition of his treatise¹⁾.

Fig. 3.



If we overlook the quadrangular shape of this mirror, which will certainly not be considered more convenient than the circular shape of my own, we may recognize in this laryngoscope my laryngo-pharyngeal speculum, represented two years before in the *Zeitschrift der Gesellschaft der Aerzte*²⁾ and which is reproduced in this work, p. 12.

Dr. Czermak, wishing to establish his priority over me, refers the reader to the more remote date of his publications compared with that of my own; in reply to this observation, I have only to say, that in his second article published on April 17, 1858, he himself acknowledged my right to priority, which he "seemed disposed to claim" in his first article March 28. (see the preceding pages), and that in a third article which bears the title "Physiological researches by means of Garcia's laryngoscope", no directions were given by him for its practical application. It was only six months after the publication of my treatise on the laryngoscope and mode of using it, published June 28, 1858, that Dr. Czermak's fourth article appeared³⁾, in which he treats of a practical application.

Lastly, when Dr. Czermak, referring to his pathological observations, appropriates to himself the merit of having given my inquiries a fresh impulse, by publishing⁴⁾ a "remarkable" case on laryngoscopic diagnosis (his first pathological observation), he seems to have altogether forgotten, that one of the two cases, published before by Dr. Stoerk⁵⁾ was one resulting from my own observations in my wards, and that Dr. Stoerk, then assistant physician in my department published it after having obtained my special consent to do so.

¹⁾ Ibid. Paris 1860, p. 29.

²⁾ Nr. 26, du 28. Juin 1858.

³⁾ Wien. med. Wochenschr., 8. Jan. 1859.

⁴⁾ Wien. med. Woch. 8. Jan. 1859.

⁵⁾ Zeitschr. d. Gesellsch. d. Aerzte Nr. 51, Dec. 20., 1858.

Of the laryngo-pharyngeal speculum.

According to the description transmitted to us by Liston and Garcia relating to their speculums, these consisted of a mirror with a handle to it; but with regard to the shape of the glasses no particular indications have reached us. It was at a meeting of the medical Society of Vienna, April 9., 1858, that I exhibited speculums made according to my own directions, and to which I gave the name of laryngo-pharyngeal speculums. The following description of them is contained in the report of this meeting¹⁾.

These speculums consist, of a little mirror of oblong shape, well rounded at its extremities; of a straight stalk forming, with the plane of the mirror, an obtuse angle rendered variable by the flexibility of the metal; and of a handle fixed on the lower extremity of the stalk and representing its prolongation.²⁾

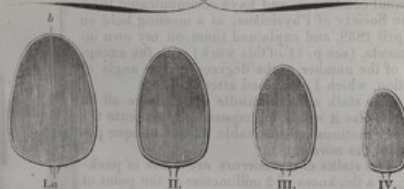
A short time afterwards I altered the oblong shape of these glasses into an oval one, and added also a circular form.

My treatise published June 1858³⁾ already contained representations of my speculums, the same as in figures 4, 5 (II to IV) and 6. A short time afterwards, I caused two larger speculums to be made (fig. 4 and 5, I).

Like Liston and Garcia I generally use a mirror encased in a very slight frame of packfong. Wishing, however, to contrive some means of preventing the glass from cooling too rapidly, I tried to coat some of them over with a substance a non conductor of heat, the asbestos for instance; but the experiments which I have as yet made with this kind of instruments, are too few to enable me to form a proper estimate of the real value of this intended improvement.

The dimensions of the glasses, I generally use are various; they are represented here in a natural size:

Fig. 4.



¹⁾ Zeitschr. d. G. d. Ae. Nr. 17, April 26., 1858.

²⁾ Zeitschr. d. G. d. Ae. Nr. 26, June 28., 1858.

Fig. 5.

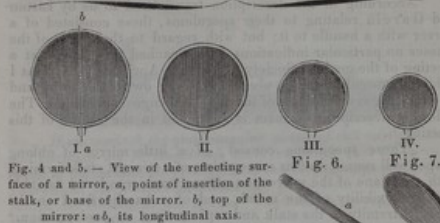


Fig. 4 and 5. — View of the reflecting surface of a mirror, *a*, point of insertion of the stalk, or base of the mirror, *b*, top of the mirror: *ab*, its longitudinal axis.

The longitudinal axis of the oval mirrors varies from 18 to 30 millimeters; their greatest breadth varies from 11 to 20 millimeters; the diameters of the circular glasses vary from 13 to 22 millimeters.

Liston and Garcia only mention „a long stalk suitably bent“ on the upper extremity of which the glass was to be fixed.

But in order to render the use of the laryngoscope of practical utility, it must have a straight stalk, its handle must also be straight, and the stalk must be fixed on the mirror at an invariable angle (angle of junction), the number of degrees of which must be determined.

I have been the first to ascertain these most essential conditions, and have communicated them to the Society of Physicians, at a meeting held on 9. April 1858, and explained them on my own instruments, (see p. 11 of this work) with the exception of the number of the degrees of the angle of junction, which I explained afterwards.

The stalk and the handle must above all be straight, else it would be impossible to execute the rotatory motions indispensable in the oblique position of the mirror.

The stalks of my mirrors are made of pack-fong, of a thickness of 2 millimeters at the point of their insertion into the handle, and of a lesser thickness towards the point of their junction with

the mirror, thereby presenting a considerable power of resistance and allowing of any alteration being made in the angle of junction whenever required; this, however, is a case of rare occurrence.

The length of the stalk is of about 8 centimetres; the handle is of the same length, and made of wood.

After having gone with great precision through a whole series of comparative experiments in order to determine the size of the angle of junction, I have in my treatise, June 28., 1858 (loc. cit.), fixed the same at from 120 to 125°. This I have found to be the most convenient size, and I have preserved it unaltered in numerous experiments that have turned out very successful. However there are very few cases in which it becomes necessary, to alter the angle.

With regard to the selection of glasses it is quite natural that one should prefer the largest size the patient can put up with. With adults Nr. I and II of the circular mirrors and Nr. II and III of the oval ones are generally very convenient. I generally use Nr. I and II of the circular ones. The smaller kinds are seldom applied except in very young people, in order to examine the back of the palate, the tonsils, or in cases of Rhinoscopy.

Clinical researches

different diseases of the larynx, trachea and pharynx,
examined by the Laryngoscope.

On catarrhal inflammation of the larynx*.

1. Acute catarrhal inflammation.

The pathological anatomical changes are the same as those of a catarrhal affection of the mucous membranes in general, (See Rokitsky's patholog. Anat. vol. II. page 40) namely, red injections from a pale to a deep red, from the injection of the minutest branches to the largest trunks of the vessels, whereby the mucous membrane appears to the naked eye of a uniform red colour. Dullness, tumefaction and looseness, arising from infiltration of the texture of the mucous membrane with a serous fluid, and finally, the formation of a purulent secretion.

By the aid of the laryngoscope, we are able to observe these changes even in a living subject.

In an etiological sense, acute catarrh of the larynx may be divided into an independent, substantive, and a symptomatic. While we pass over the latter, which appears in acute exanthemata, as well as the pustular eruptions which we see in smallpox, we will only speak here of the substantive acute catarrh.

Extension.

The pathological anatomical changes show a very different extension both to the larynx itself, as well as to the neighbouring parts.

* Published in the „Allgem. Wiener mediz. Zeitung“ Nr. 49, Dec. 3, 1861 and single pathological cases in Nr. 21, May 24, 1859 and Nr. 9, Febr. 28, 1860.

The following parts of the larynx itself, may be affected, exclusively or at least prevailing in various degrees of intensity. The epiglottis, the upper ligaments of the glottis, the coverings of the mucous membrane of the Santorinian and arytaenoid cartilages, the ary-epiglottic folds, the lower ligaments of the glottis etc.

The disease may affect single, or more of the before mentioned parts at the same time, and indeed the affection may appear exclusively, or preponderating on one or both sides; finally the whole of the parts mentioned, may also be affected at the same time. Very often, the neighbouring mucous membranes, those of the entrance of the throat, of the pharynx, of the trachea and bronchial tubes, of the pharyngo-nasal cavity, are affected with catarrh at the same time as the mucous membrane of the larynx, or the catarrhal inflammation of the larynx arises from the catarrh of the adjoining parts.

Appearances of disease.

The appearances of disease are very different, varying according to the special seat of the malady.

The epiglottis seems only to be red on the posterior, or even both surfaces, or transformed into an irregular unsymmetrical swelling, in unequal intensity of the disease on both sides.

Old observers (Home and others) speak already of an epiglottitis, in which the epiglottis is visible behind the tongue, like a red round body, and the patient complains of pain in swallowing, and also of compression produced between the os hyoides and the thyroid cartilages.

These observations are quite correct. Laryngoscopic examination has proved to me that, in cases of epiglottitis where the other parts are free, the pain in swallowing is really only to be attributed to inflammation, in other cases, to ulceration of the epiglottis, as only laryngoscopic observation is able to prove, that a catarrhal inflammation may be confined to the epiglottis alone. I have often convinced myself of the painfulness of the epiglottis to the touch, by means of introducing my fore finger into the side of the throat.

If the covering of the mucous membrane of the Santorinian, and arytaenoid cartilages is inflamed, it is to be seen by the speculum, more or less reddened and swelled, frequently together with the back part of the segment of the larynx which lies above the glottis. The inflamed covering of the mucous membrane of the Santorinian, and arytaenoid cartilages, causes likewise painfulness in the act of swallowing, in a normal condition of the entrance to the throat, and the pharynx, because

by the attempt, or completion of this act, the inflamed parts are in one way, or other mechanically offended; in violent stages of inflammation, swallowing may be rendered entirely impossible.

Through the inflammatory swelling of the covering of the Santorinian, and arytaenoid cartilages, the motion of the cartilages, and also those of the ligaments of the glottis, may become finally limited.

The upper ligaments of the glottis become affected at the same time, as the covering of the mucous membrane of the Santorinian, and arytaenoid cartilages, or the epiglottis, but sometimes separately, and only on one side. In high degrees of inflammation, they appear like red swellings, and sometimes as if composed of longitudinal bundles, and partly, or entirely cover the lower ligaments of the glottis, whereby the ventricles of Morgagni are closed, and by their surmounting the margins of the glottis, as well as their offering a mechanical opposition to the external movement of the lower ligaments of the glottis, the latter is restricted.

The lower ligaments of the glottis may be injected to a greater or less extent, and indeed may be reddened, either in part, or in their whole circumference, uniformly. Their colouring may vary from a pale rose colour, to a saturated red. Sometimes a distinct swelling is to be recognised, which appears in single cases, as a reddish border which projects on the internal edge of the lower ligaments of the glottis, or as a little round tumour, confined to one place. In some cases, which I observed, the lower ligaments of the glottis, or other confined parts of the mucous membrane of the larynx, assumed the appearance, as if they had been cauterised quite superficially, with a solution of nitrate of silver. — The epithel seemed to form a scab.

Coughing as a functional disturbance, is so far not characteristic of disease of the lower ligaments of the glottis, because it appears in catarrh, in other different parts of the mucous membranes of the respiring organs. Increased sensibility is mostly observable by pressing the larynx, namely in the vicinity of Adam's apple.

From my observations up to the present time, hoarseness in different degrees, and when in a slight one, is mostly a constant sign. In this respect, I once observed distinctly, that the hoarseness entirely, or almost entirely vanished, while a considerable swelling, and redness of one of the lower ligaments of the glottis still remained.

Inflammation of the lower ligaments, may finally lead to a straitening of the glottis. In order to maintain the act of normal respiration, a certain width of the glottis is necessary.

Straitening of the glottis, may take place in two ways: either by moments, which limit the power of dilatation of the glottis (i. e. the outward motion of the lower ligaments of the glottis), or such as positively restrict the aperture of the glottis. To the first moments belong, as has been already partly mentioned: a) the swelling of the parts adjoining the Santorinian, and arytaenoid cartilages, whereby these, and also the lower ligaments of the glottis, which are inserted in the processus vocales, lose entirely, or partly their motion; b) the swelling of the upper ligaments of the glottis¹⁾, which, as above mentioned, offer a mechanical hindrance, to the outward motion of the lower ligaments; c) perhaps also abnormality of the action of the muscles²⁾. To the instances of the second kind, belong a) a higher degree of swelling of the lower ligaments of the glottis; b) the projection over the internal borders of the same, by the upper ligaments of the glottis being swelled; c) swelling of the mucous membrane, which covers the anterior surface of the posterior side of the larynx; and d) finally a collection of a slimy purulent secretion, the removal of which, is rendered more difficult by the limited functional power of the parts of the larynx in consideration.

Acute catarrh of the larynx, may as is known prove fatal by laryngostenosis, particularly if accompanied by oedema of the glottis.

Course, Duration and Issue.

The slightest cases stand still in the stadium of injection, and from thence become again retrogressive.

Their duration in general is short, often limited to a few days. The duration is longer, when it comes to the formation of an uniform redness, particularly on the lower ligaments of the glottis; here the duration lasts at least two or three weeks and more. Often inflammation only confined to single parts, lasts for months, which we will mention again when we speak about chronic catarrh. In greater degrees of intensity of the disease, the inflammation may arrive at its greatest height in a few days, and even in a few days superficial ulcers may form. Such ulcers may at the cessation of the inflammatory appearance in the vicinity, heal spontaneously, without loss of substance.

It is only possible by means of a laryngoscopic examination, to form a diagnosis of the differences of a state, which is very frequently taken for catarrh of the larynx, which it is not.

¹⁾ and of the external parts of the lower.

²⁾ a paralysis of the muscles opening the glottis, or a spasm of those, which close it.

We find namely in bronchial catarrh, in bronchitis, in tubercles of the lungs, frequently irritable cough, hoarseness, sometimes amounting to aphonia, which in the course of a longer or shorter time, frequently even in a few days, again disappear, often on the contrary continue, and relapse much longer, namely, in tubercles of the lungs. In such cases, we think we have to contend with catarrh of the larynx, or tubercles of the lungs with ulceration of the larynx.

As I have already shown some time ago, on another occasion¹⁾, in such cases, only a disturbance of the muscular power is to be considered, about which it is conceivable, that the laryngoscope alone can afford an explanation.

2. Chronic catarrh of the larynx.

a) Chronic substantive catarrh of the larynx, can present itself as the result of a more acute stadium, or from the beginning appear without acute symptoms. Of the cases of the latter kind, I will from my observation, direct the attention to those of partial inflammation of the lower ligaments of the glottis, which without any pain, and in some cases also without an irritable cough, cause but only an occasional trifling hoarseness, which sometimes appears troublesome in singing and takes a more or less tiresome course²⁾.

b) Symptomatic chronic catarrh of the larynx, displays itself as is well known, in a secondary form, in the vicinity of syphilitic, tuberculous ulcers of the larynx, of cancer, and may cause a callous degeneration of the mucous membrane, and sub-mucous textures.

Catarrhal and simple ulcers of the larynx³⁾.

I had several times an opportunity, of observing the development of catarrhal ulcers at the height of an acute catarrh of

¹⁾ Allg. W. med. Ztg. Nr. 8, Febr. 21, 1860.

²⁾ In chronic catarrh of these as well as other parts and ulcers of the larynx, the topical application of medicinal fluids as solutions of nitrate of silver, glycerine with Jodine, are as is known, sometimes of use. I use for this purpose a sound of whale-bone with sponge, which Watson and Green used. In order to be able to press out a greater quantity of fluid I modified the sound in this way, that instead of the knob at the end of the sound being in the middle of the sponge, I ordered the end of the sound to be attached to a small plate which presses on the basis of the more conical sponge. Here it is only necessary to see by a weak light, the free end of the epiglottis so far as to be able to see the sponge entering below it.

The application of the apparatus of Sales-Giron must further be tried.

³⁾ See: Laryngoscopical communications on ulcers of the larynx in Allgem. Wien. med. Zeitung Nr. 25, June 19, 1860.

the larynx. In one case, the covering of the mucous membrane of the Santorinian, and arytaenoid cartilages was affected, and in another, the posterior segment of the left lower ligament of the glottis. Their course as already mentioned, was a short one, keeping seemingly equal, pace with the solution of the catarrhal inflammation. Besides these, I had in several cases an opportunity of observing ulcers, which were not accompanied with the appearances of catarrh of the larynx. As they did not come under my observation, till some time after the commencement of the first appearances of disease in the larynx, I could no more decide as to their catarrhal origin, but still in some degree the presence at the same time, of although sometimes very slight, catarrh of the bronchial mucous membrane, would seem to speak in favour of this kind of origin. As therefore, these ulcers could not be referred with certainty to catarrh, nor any other diseased state, as for instance syphilis, tubercles etc. I will here as an appendix to the catarrhal, mention them as simple ulcers of the larynx.

The seat of the ulcers, was to a greater, or less extent, the posterior part of the lower ligaments of the glottis.

In one case, they extended in length, over the greatest part of the lower ligaments. It is remarkable that both lower ligaments were equally affected at the same time. The loss of substance, was sometimes seemingly deep. In the one case, where it gained a greater extent, in the longitudinal direction of the ligaments of the glottis, it was quite superficial, so that the lower ligaments appeared, as if they had been quite superficially ground in their outward circumference. In all cases, a more or less speedy healing followed, under an indifferent mild treatment, according to the extent of the loss of substance.

The symptoms of diseases caused by them consist, in hoarseness, and cough accompanied in some cases, by spitting of mucus, striped with blood; pain was sometimes entirely absent.

On Perichondritis of the larynx ¹⁾.

This affection may have its seat in the arytaenoid cartilages, in the cricoid cartilage, and far more seldom in the thyroid cartilage. A case of this kind was of late published by Friedreich.²⁾

Thereby, the cartilage is deprived of its perichondrium, partly destroyed, the mucous membrane covering it is wanting, or whilst the mucous membrane is uninjured, there is formed, particularly on the cricoid cartilage, an abscess projecting outwards, and into the cavity of the larynx, and therefore, conducting to a fatal straitening of the glottis. Flormann has reported the first case of this sort. Perichondritis of the larynx generally arises, as it is known, in a secondary way as a consequence of exanthematic disorders, particularly from small pox, further from typhus fever, from syphilis, finally very frequently when occupying the arytaenoid cartilages, by the progress of ulcers from the mucous membrane to the cartilages in tubercles of the lungs.

To this may be added another way of origin, which I had found in a case of abscess, namely tuberculous infiltration of the cricoid cartilage.

We proceed to a short relation of the cases of perichondritis laryngica that we had observed.

Perichondritis with abscess.

Here the cricoid cartilage is commonly the seat of the affection; so I found it, in a case which I had observed.

A man of 34 years old was suffering for 8—10 days from hoarseness, pains in the larynx, and difficulty of respiration. Since one day, on inspiration a rustling was heard, and the difficulty of breathing increased to a higher degree. For the last two days he could not swallow, but small quantities of fluids. There is a hoarseness of high degree. On pressing on the left side of the larynx, the patient feels pain. On laryngoscopic examination, the left lower ligament of the glottis presented itself considerably protuberant, and fixed with its interior somewhat rounded border to the median line, and a little beyond it to the right side. As regards its colour, and lustre they were however of perfectly normal quality. The same immobility I found on the left Santorinian

¹⁾ Published in the Allgem. Wien. mediz. Zeitung Nr. 50, December 10, 1861.

²⁾ On diseases of the larynx etc.

and arytaenoid cartilages, the covering of the mucous membrane of which is rather puffed up. The sinus formed on the one side by the plate of the thyroid cartilage, and on the other side by the arytaenoid cartilage, and by the ary-epiglottic ligament (sinus pyriformis *Tourtual*) is larger on the left side than on the right. The right lower ligament of the glottis, as well as the motions of the right Santorinian, and arytaenoid cartilages, are in all respects normal.

The patient died in the following night. Dissection showed on the left half of the cricoid cartilage an abscess of the size of a hazel-nut, filled with a thickly green matter which protuberated partly into the sinus pyriformis, partly immediately below the left lower glottic ligament, undermined by the matter, and rounded off on its free margin into the interior of the larynx, the passage of which was thereby contracted into a fissure directed from before to behind.

The left half of the cricoid cartilage was partly deprived of its perichondrium, rough, and infiltrated with a tuberculous substance on its posterior portion, in a small, circumscribed spot. Tubercles of the pleura.

I consider the mentioned signs characteristic, though taken only from a single case.

The strong protuberance and fixation in the median line of the lower glottic ligament, contributing materially to the straitening of the glottis, was evidently not effected either by inflammation or by oedema, because, abstractedly from the limitation of the mentioned abnormalities to one side, the colour and lustre of the respective glottic ligament, have remained perfectly normal.

The oblique position in the interior of the larynx recognizable by the enlarging of the sinus pyriformis, the difficulties of deglutition, the pains on the left side of the larynx, and the acute course of the affection, indicated an inflammatory swelling. Should, however, so particular a protuberance of the left lower ligament of the glottis be in connexion with that, it is not to be comprehended otherwise, than that the inflammation turned into an abscess, and the left glottic ligament, undermined by suppuration, did protuberate in the manner described.

If we see such a combination of morbid phenomena, we may conclude safely the presence of a pouched abscess.

Syphilitic Perichondritis.

Porter has published, several years ago, a case of perichondritis in a syphilitic individual, who had undergone the unc-

tion cure. If, in some cases, where it came, beside the denudation of the cartilage, to destructions of the mucous membrane, it is difficult or even impossible to determine, whether the perichondrium was the original seat of the affection, or, on the contrary, this last, and also the cartilage had been affected, only in consequence of the affection of the mucous membrane, the same takes place also particularly from syphilitic perichondritis.

In two cases of syphilitic perichondritis which came under my observation, the internal surface of the cricoid cartilage was deprived in a greater or less extent of the mucous membrane, and perichondrium, necrotised, and in one of the cases the posterior ends of several rings of the trachea likewise, and in this latter case, the perichondritis seemed to have arisen from ulcers of the mucous membrane.

Under circumstances, which are favourable to a laryngoscopic examination of the posterior part of the larynx and trachea, particularly therefore, if the glottis were sufficiently opened, the mentioned pathological alterations would perhaps, at least partly be recognised during life.

In the only case I examined during life, a view of the portion of the larynx, situated below the glottis was not possible, as the patient came under my care, after consecutive inflammation of the lower, and upper glottic ligaments of one side, had already arisen. Besides the appearances of inflammation in the just mentioned parts, I found on the back portion of both the lower glottic ligaments, a sharp jagged line, running along their length, which could not be explained but as an upper margin of an ulcer seated on the back part of the larynx, a supposition which was confirmed afterwards on dissection. At the same time, the pressure from before to behind, on the larynx and trachea, was painful, the expired air of a very bad smell. Also in the second case which I did not observe during life, it would have been impossible according to the results of dissection, on account of ulceration and thickening of the lower glottic ligaments, to examine during life, the destructions produced on the back part of the larynx.

Perichondritis in typhus fever.

Perichondritis, and diphtheric ulcers on the posterior part of the larynx, belong to the most important affections of the larynx in typhus fever.

In Diphtheritis, we know, exudations are deposited in the tissue of the mucous membrane, which are destroyed by gangrene, and so produce losses of substance of the mucous

membrane. In typhus fever, such a loss of substance appears on the back part of the larynx over the muscoli transversi. Frequently it extends deeper, so that a cavity, filled with putrid matter is formed, in which most frequently, we find the arytaenoid cartilage, severed from its surrounding parts, covered by gangrenous matter, and exposed. (Rokitansky.) From this consecutive state of diphtheritis, it is sometimes scarcely possible to distinguish the Perichondritis, arising primitively in the course of typhus fever, (Dittrich) and so much the less, at the bedside of the patient.

In cases of typhus, we may suppose from the appearance of hoarseness, particularly if it is increased to aphony, the presence of diphtheritis or perichondritis. But the aphony, if it appeared only a few days before death, is frequently overlooked, as the soporose patient is not often observed in this respect.

On the contrary, diphtheritis and perichondritis, are apt to give rise to very alarming appearances, when they caused a considerable inflammatory swelling in their vicinity.

I had an opportunity of examining with the laryngoscope five cases of this kind. They were all in young persons from 14—25 years of age. In all these cases, the affection of the larynx, manifested itself at a later period of typhus fever, namely twice in the fifth, and three times in the 7th or 8th week, in subjects that already appeared to be convalescent; as if an inflammatory reaction of this sort in the larynx would be impossible at the time of the utmost prostration.

In all patients there appeared a cough, more or less intensive hoarseness, pain in the larynx, and dyspnoea, sometimes difficulties of deglutition. The dyspnoea depending on stenosis of the larynx, rose always to such a degree, that, in order to save the patient, tracheotomy must have been performed after two, or at the utmost five days.

On laryngoscopic examination, I discovered inflammatory swelling of one lower glottic ligament, or simultaneously of the upper glottic ligaments, or of the mucous membrane covering the Santorinian, or arytaenoid cartilages, or acute oedema in the latter region, finally, acute, intensive oedema of both the lower glottic ligaments. This last mentioned state, presented itself twice, and had caused the highest degree of dyspnoea. In one of those two cases, I could descry very clearly, on one of the lower glottic ligaments, a deep loss of substance arising doubtlessly from the presence of a diphtheritic ulcer.

Of those five patients which were operated upon, two died, in whom dissection showed perichondritis; three recovered; they are, however, on account of too little permeability of the

larynx, perhaps condemned to wear a canula for their life, in one of them fragments of cartilage were seen to be thrown off afterwards.

Two cases submitted to laryngoscopic examination, were evidently perichondritis, primitive, or arising from gangrene of the mucous membrane, and in one case the presence of an undoubted diphtheritic ulcer, could be stated by means of laryngoscopic examination¹⁾.

On syphilitic affections of the larynx²⁾.

Syphilitic ulcers.

The epiglottis ranges among those parts of the larynx, which are, most frequently, the seat of secondary syphilitic ulcers, and the syphilitic ulcer of the epiglottis is the most characteristic. When of longer duration, it has a special tendency to penetrate deeply; in all the advanced cases I had observed, the whole thickness of the epiglottis was perforated. Thereby a more or less considerable part of the border, and, sometimes, a great part of the epiglottis, is destroyed. Only, in one recent case, the ulcer remained superficial. The tendency to occasion a loss of substance, perforating the whole thickness of the epiglottis, and embracing at the same time, a part of the border of the epiglottis, belongs according to my present observations, likewise to lupous ulcer, and to that of cancer. The tuberculous ulcer of the epiglottis, shows but more seldom a similar appearance.

The adjoining parts of the ulcer to a large extent, even the still remaining part of the epiglottis are reddened, and frequently considerably swelled, and by this, as well as by the great incli-

¹⁾ Lately I had the opportunity to examine a case of perichondritis in a very advanced period of small-pox, with similar appearances as in the above mentioned cases of typhus fever. Dissection showed the back part of the cricoid cartilage exposed, surrounded by matter, necrotised and near the median line divided in two pieces, one of the arytaenoid cartilages destroyed; and strange to say aphonia did not take place.

²⁾ Published in the „Allgem. Wiener med. Zeitung“ Nr. 52, Dec. 24, 1861 and see also: Laryngoscopic communications on ulcers of the larynx (Allgem. W. med. Zeitung Nr. 25, June 19., 1860) and for single pathological cases Zeitschrift d. Gesellschaft d. Aerzte Nr. 51, Dec. 20., 1859 and Nr. 11, March 14., 1859, Abg. W. med. Zeitung Nr. 22, May 31., 1859 and Nr. 8, Febr. 21., 1859.

nation of the rest of the epiglottis backwards, and downwards, the sight of the inside of the larynx, is sometimes highly restricted, and particularly the investigation of the anterior angle of the glottis, is rendered impossible. It is therefore, in such cases we can never predict with safety, whether the epiglottis alone is affected, or the parts, more deeply situated.

On the margins of old losses of substance, which are here and there not seldom curved, the exposed yellow cartilage is, sometimes, exactly to be distinguished. Swallowing, as we know, even by such destructions of large extent, can be unobstructed.

The lower ligaments of the glottis are, not seldom, the seat of syphilitic ulcers, which according to their longitudinal direction, may acquire a very considerable extent. They cause hoarseness.

In the cases I observed till now, both lower ligaments were always affected. The ulcers are more or less deep, and can be encircled by a circle of inflammation, which occupies, wholly or partially, the rest of the ligaments of the glottis. They can occur together with indented prominences of the mucous membrane, or ulcers on the front surface of the upper section of the posterior part of the larynx, and by this, assume the appearance of tuberculous ulcers.

Their diagnosis must be founded on other syphilitic symptoms, as well as on the anamnestics.

In cases, where on account of the before mentioned affections of the epiglottis, the inspection of the ligaments of the glottis is insufficient, or almost impracticable, the presence of ulcers on them is only to be inferred, with more or less probability, from the obvious disturbance of functions.

The more superficial ulcers of the ligaments of the glottis, heal without cicatrices, being recognised by the aid of laryngoscopic investigation. It is quite another thing, deep ulcers, and of large extent, which leave behind them deformities of the ligaments of the glottis, and stenosis of the larynx, especially membranous concretions on the anterior angle of the glottis.

The lower ligaments of the glottis, the aryepiglottic folds, the covering of the mucous membrane of the arytaenoid cartilages, the upper posterior part of the larynx etc. may also be the seat of syphilitic ulcers¹⁾.

¹⁾ Lately we observed a very large deep ulcer with undermined margins, situated on the upper margin, and posterior surface of the back part of the larynx, and in another case a broad transversal cicatrix on the same spot.

The proportion of the ulcers of the larynx, to those of the neighbouring parts is, as is known, a different one, and I infer in this respect from my actual observations the following.

a) In most part of syphilitic ulcers of the larynx, there are simultaneously ulcers, or at least scars, on the tonsils, on the arches of the palate, on the soft palate, on the posterior part of the throat, and on the base of the tongue. As concerns the extension of ulcers over the single parts on the larynx, in similar cases, the epiglottis, and the parts more deeply situated, may be ulcerated, nay, it may present a continued series of ulcerations, from the throat down to the inside of the larynx, or the epiglottis escapes, and the ulcers occupy only the ligaments of the glottis, or other parts situated below the epiglottis.

b) In other, and as it seems rarer cases, the soft palate, and the entrance to the throat, etc. are in a normal state. In these cases too, either the parts inferior to the epiglottis, as for instance the ligaments of the glottis, or the epiglottis itself may be the seat of ulcers.

In all such cases, where there are wanting the traces of syphilitic affection of the mouth, and throat, if there are also no other secondary phenomena, for instance on the skin, the diagnosis of syphilitic ulcers of the larynx cannot be made with perfect security. It depends

a) on the anamnesis, where sometimes you may infer nothing more, than that the patient had once had a primary ulcer some years ago,

b) then in ulcers which resemble such as in tubercles of the lungs, at the same time in the absence of tubercles, and

c) in ulcers of the epiglottis, also in their characters delineated above.

As regards the relation of the affection of the larynx to that of the adjacent parts (of the throat etc.), as well as with regard to the affection of the larynx itself, there is some affinity betwixt syphilitic and lupous affections.

The syphilitic new-formations of the mucous membrane.

As such may be considered with security, before all, new-formations resembling broad condyloms, if they are met with accompanied by other phenomena of syphilitic affection and disappear under a general antisyphilitic treatment.

I had occasion of observing only one case of this description. It was the wife of a labourer of 36 years old who was

affected with large syphilitic scars, and ulcers on the soft palate, in the throat, in the pharyngo-nasal cavity, on the epiglottis.

One of the two new-growths, resembling broad condyloms was seated on the covering of the mucous membrane of the left cartilage of Santorini and the arytaenoid cartilage, as well as on the right upper ligament of the glottis in all its length, and covered the right lower ligament of the glottis entirely. At the closing of the glottis, the left protuberance lay like a flap over the backpart of the right one. During the application of the unction cure, they disappeared perfectly ¹⁾.

Protuberances and small roundish new-growths of the mucous membrane, are furthermore, to be regarded, if they are met with in syphilitic subjects, and yield to an antisyphilitic cure, as an effect of syphilis.

I have observed a case of this sort which, undoubtedly belonged to syphilis, but where after the disturbance of function, in consequence of a cure by mercury, had entirely been appeased, I had no further occasion for making a laryngoscopic examination.

Omitting the syphilitic perichondritis, the inflammatory swellings are, finally to be mentioned which may associate with the syphilitic ulcers of the larynx, as well as with perichondritis, and cause an acute stenosis of the glottis.

I had an occasion of observing a case of this kind. The epiglottis was strongly reddened, puffed up, and seemed to be ulcerated in the middle, the upper and lower ligaments of the glottis were red, and considerably swollen, the glottis dangerously straitened. The mouth being opened only with difficulty, and, moreover, a good deal of secretion being accumulated, a more accurate laryngoscopic investigation was impossible, and it was still less possible to find means of discovering, if there were ulcers on the ligaments of the glottis ²⁾.

In the treatment of syphilitic affections of the Larynx, fine results are to be obtained by a moderate unction cure, and Jodide of Potassium.

¹⁾ Lately I saw still two other similar cases.

²⁾ I must according to my farther observations, characterise as syphilitic inflammation of the mucous membrane of the larynx those cases, where the laryngoscopic examination shows swelling with reddening or discolouring of the glottic ligaments and of the mucous membrane of other parts of the larynx, coexisting also with more or less numerous and small new-growths, and also ulcers.

All these appearances of a chronic inflammation of the mucous membrane of the larynx, when found in syphilitic individuals, and healed by means of an antisyphilitic treatment, as I had opportunity to observe, must be looked upon as consequences of syphilis. The syphilitic catarrh of the larynx may produce a more or less high degree of straitening of the glottis.

On affections of the larynx in tubercles of the lungs¹⁾.

A. The ulcers.

Louis has, as it is known, entirely denied the tuberculous affections of the larynx, Hasse, and Reiner have allowed the presence of tuberculous ulcers of the larynx, only in a certain number of cases. A very striking proof of the existence of tuberculous affection of the larynx, is afforded by the cases of miliary tubercles of the larynx, which appear, indeed, very rarely.

We had occasion to observe one exquisite case of this kind, in which we found, besides close groups of miliary tubercles of the mucous membrane of the larynx, simultaneously ulcers of great extent, on the back surface of the epiglottis, and on the ligaments of the glottis.

Rokitansky assigns to the tuberculous ulcers of the larynx as a principal seat, the mucous membrane of the posterior part of the larynx, above the transversal muscles.

Besides the tuberculous ulcers in tubercles of the lungs, are met with, too, ulcers of the larynx, in which the character of tuberculous ulcer, neither in the dead body, nor, as far as we can judge of it by aid of laryngoscopic examination during life, is to be demonstrated. Hereto belong the simple, the catarrhal, and perhaps also the follicular ulcers. The occurrence of the latter, is to a certain degree granted by the circumstance, that two of the principal seats of the conglomerate mucous glands of the larynx, namely the posterior surface of the epiglottis, and the anterior surface of the superior section of the backpart of the larynx, range also at the same time, among those parts of the mucous membrane of the larynx, which most frequently are ulcerated in tuberculous affections of the lungs.

The ulcers of the epiglottis are situated, as Louis already remarks, mostly on its posterior surface, and particularly, in the inferior section of the latter. They do not, for the most part, perforate the whole thickness of the epiglottis. If it

¹⁾ Published in the „Allgem. Wiener med. Zeitung“ Nr. 2 and 3, January 14, and 21, 1862. See also Laryngoscopical communications on ulcers of the larynx (Allg. Wien. med. Ztg. Nr. 25, June 19, 1869 and for single pathological cases: Zeitschr. der Ges. der Aerzte Nr. 11, March 14, 1859, Allg. Wien. med. Ztg. Nr. 22, May 31, 1859.

happens, the perforation of the cartilage may take place near above the glottis on its peduncle, or also on its borders, by which they appear, as if they were gnawed, nay, even a considerable part of the epiglottis may be destroyed by this accident. Such penetrating losses of substance, on the borders, are however, relatively more rare, and the outlines of the part remain, mostly in very large ulcers of the epiglottis, of tuberculous subjects, uninjured. By this circumstance, is however, in a great number of cases, afforded a very striking difference between these, and the syphilitic, lupous or cancerous ulcers.

Ulcers of great extent, on the back surface of the epiglottis, are not, excepting in tuberculous affections of the lungs, frequently found, and they appear, for instance in typhus fever under circumstances in which they are no object of laryngoscopic examination, or where a mistaking of the affection for pulmonary tubercles will be scarcely possible.

Therefore, if one discovers ulcers of large extent on the back surface of the larynx, on uninjured outlines of the latter, one will be able in most cases, to make a safe inference, as to the presence of tuberculous affections of the lungs.

Sometimes, we succeed in obtaining approximately a front view of the ulcers of the epiglottis, but mostly, we must content ourselves with a near side-view, at which the respective part of the posterior surface of the epiglottis presents itself uneven, and provided with a whitish covering.

The examination, mostly succeeds better, when the head is bent backwards, and may be aided by various respiratory movements.

For the most part, you must content yourself, with a very transient view of the surface of the ulcer.

The examination becomes very difficult, and often impracticable, in consequence of swelling, and a strong inclination backwards of the epiglottis. But even under unfavourable circumstances, I succeeded by a quick pushing of the laryngoscope to the posterior part of the throat, at the commencement of vomituration, in catching a glimpse of the ulcerated middle part of the posterior surface of the epiglottis, which was raised up at this moment.

The ulcers on the posterior part of the epiglottis do not, if they are not accompanied by a considerable inflammation of the epiglottis, produce any pain, or only slight in swallowing.

The ulcers of the lower ligaments of the glottis, are less characteristic than those of the epiglottis.

Here, we must mention at first, those quite superficial ulcerations, which present on laryngoscopical investigation a per-

fect likeness of the simple ulcers of the larynx which we have described on another occasion. The lower ligaments of the glottis offer then, through a great part of their length, but mostly not in their whole breadth, a pale greyish yellow colour, differing from the regular one, which is of a tendonlike white. At an oblique view, we can convince ourselves, that the normal brilliancy is wanting on the discoloured spots, and there is present a loss of substance, which manifests itself by a quite superficial depression. In the vicinity of these ulcers, you cannot discover, not even by means of a magnifying apparatus, any trace of tuberculous granulation.

More frequently are to be observed, more considerable losses of substance, which extend mostly over the greater part of the length of both lower ligaments of the glottis, but also of only one. We observe not seldom within such an ulcer, a small furrow which proves afterwards in the dead body to be a much broader and deeper one. Both the inner, and outer sections of the lower ligaments of the glottis, may be ulcerated. The figure may be a very irregular one, the margins of the ulcer may, as I saw it distinctly on laryngoscopic investigation, be undetermined.

Considerable ulcers on the lower ligaments of the glottis, do not frequently cause aphonia, but only hoarseness.

The ulcers of the upper ligaments of the glottis, occur frequently, but still more rarely, than those of the lower ligaments of the glottis. They appear, isolated from the latter, on several circumscribed spots, or form with them by a simultaneous ulceration of the ventricles of Morgagni a continuity.

We encounter frequently ulcers on the front surface of the superior section of the posterior part of the larynx which, we know, have their principal seat on the covering of the mucous membrane of the transverse muscles, amidst the arytaenoid cartilages, and from them an inference may be made with a high degree of probability, on the presence of tuberculous affections of the lungs. They are, frequently, to be discovered during life, and in this manner, that on laryngoscopic examination, a deal of their superior margin is to be seen. We commonly best succeed in this examination, by the erect position of the head of the patient. One discovers here on the topmost section of the front surface of the posterior part of the larynx, a jagged border, or only two or three sharp points standing nearly on the same horizontal plane beside one another. They are of a dirty whitish colour, and no other thing but ragged protuberances of the upper margin of the ulcer. They are not to be confounded with small elevated prominences, more or less pointed, which in the same re-

gion lie partly beside one another, partly also one over the other in a row, and represent unevennesses of the mucous membrane, which are sometimes to be met with in acute, and chronic catarrhal affections.

Sometimes, one succeeds moreover, in getting a view of a small portion of the ulcerous surface.

From obvious reasons, a mistaking of such ulcers for diphtheritic, on the back part of the larynx in typhus fever, and other diseases, is scarcely possible; still, one may easily confound the former, with syphilitic ulcers, syphilitic perichondritis on the posterior part of the larynx, and we have on an occasion of syphilitic perichondritis mentioned a case, which presented quite similar laryngoscopic symptoms.

One must therefore, notwithstanding the scarcity of such cases in comparison with the frequency of ulcers in pulmonary tubercles, proceed with some caution, in order to refer such ulcers with perfect safety, to pulmonary tubercles. But it is still evident, from what has been said, that one can conclude from the presence of such ulcers without further inquiry, with great probability as to the existence of tuberculous affections of the lungs.

In one case, being still in the ward, where it remained doubtful, whether it was the question of an older pneumonic infiltration of the one superior lobe, or a tuberculous one, hoarseness ensued. Laryngoscopic investigation, made soon afterwards, confirmed the presence of such an ulcer on the back part of the larynx, and, now, there was no more doubt about the tuberculous nature of the infiltration¹⁾.

Very frequently we find in pulmonary tubercles, ulcers on the epiglottis, on the upper and lower ligaments of the glottis, on the front surface of the posterior part of the larynx. At a far advanced state of ulceration, there arises an uninterrupted ulcerated surface, which surrounds in form of a broad ring, the inside of the larynx.

It is clear from the above mentioned, that during life, one cannot see but single portions of such ulcerous zones.

It is also very seldom that one can succeed in ascertaining with certainty, whether, the ulceration is only confined to isolated spots of the larynx, for instance to the vicinity of the anterior angle of the glottis.

Also the upper border, and the posterior surface of the superior portion of the back part of the larynx may, likewise, be the seat of ulcers, and sometimes of great extent, which are easily to be recognised by the aid of the laryngoscope.

¹⁾ which has since be confirmed on dissection.

These ulcers may by spreading themselves, produce a considerable sensibility in the act of swallowing. They extend not seldom to ulcerations of the aryepiglottic folds, which sometimes communicate again with ulcerations, by which the posterior lower ends of the margin of the epiglottis are destroyed. In a case which came under my observation, one epiglottic fold was entirely destroyed.

The laryngeal ulcers accompanying pulmonary tubercles, in our country, only very seldom heal. In a similar case, in a woman labouring under far advanced tubercles of the lungs, I met with the following laryngoscopic condition. The right lower glottic ligament was scarcely half the size of that of the left side, and presented a deep longitudinal furrow, but the colour and lustre remained normal. There was evidently no question of any ulcerous loss of substance. On dissection the furrow proved to be a cicatrised loss of substance, and the diminution of the ligament of the glottis depending partly on retraction of the tissue of the scar, partly on old losses of substance of the glottic ligament.

B. The catarrhal Inflammation.

This complaint presents itself in a subacute, or chronic state.

The subacute inflammation manifests itself by more inflammatory appearances, by considerable redness, and swelling of the mucous membrane. It appears:

a) In the neighbourhood of ulcers on the epiglottis, on the glottic ligaments, on the back part of the larynx, appearing in the form of an inflammatory circle, which may extend itself to the pyriform sinusses. It may produce considerable dyspnoea by the restriction of the glottis, and even necessitate tracheotomy.

b) As a specious forerunner of ulcers. I had observed only two such cases. In one of them, there appeared a considerable redness of injection, of both the lower ligaments of the glottis, followed by the formation of ulcers; in the second case, which was a man of 38 years old, in whom the most accurate repeated examination showed no infiltration of the tips of the lungs, there arose a very considerable inflammatory swelling of one of the upper glottic ligaments. Afterwards, there was a formation of ulcers of both the lower ligaments of the glottis, and tuberculous infiltration of the tips of the lungs. Such cases would, perhaps, be less scarce to be met with, if one had more opportunities of examining such patients in an earlier epoch of the disease.

But when in single cases, the formation of ulcers is preceded by inflammation of the mucous membrane, one cannot consider with security in all cases, the inflammation in the vicinity of

ulcers mentioned sub a as an inflammatory circle produced by the ulcers.

c) In rare cases, the inflammation of the larynx appears only in the presence of unimportant ulcers, as one spread by the coexistent bronchitis, and tracheitis.

In the subacute inflammation of the larynx, as well as in the simple ulcers of the larynx of tuberculous individuals, the irritability of the neighbouring parts, is sometimes so great, that laryngoscopy becomes by that circumstance very difficult, nay, even in single cases, entirely impracticable. Here, as well as generally in great irritability, I succeeded very often by pushing with the tongue holder or without it, during deep panting respirations, or during a very deep accelerated inspiration, very quickly, in a moment to the back part of the pharynx, and by bidding the astonished patient to make slower, loud, or toneless deep ex- and inspirations, or panting respirations. The overwhelming impression, of the rapid introduction of the laryngoscope, which in this case, may also be considerably large, as well as the strong, uninterrupted respiratory movements, do not suffer the vomiturations to ensue. At other times, by a very slow, and cautious introduction of a small speculum, we gain more safely our end.

The chronic catarrhal inflammation occurs, according to Rokitansky, as a follicular catarrh, sometimes terminating in ulceration of the portion of the larynx, abundant in glands, at the base of the epiglottis, and on the back part of the larynx, also in the neighbourhood of tuberculous ulcers of the larynx. In unfrequent cases the mucous membrane degenerates with the submucous tissue into callosity, which presents itself, particularly on the circumference of the glottis, in large masses, and causes at length a fatal stenosis (Path. Anat. 3 Vol.)

The catarrhal swelling, as well as the sclerosis of the mucous membrane, and of the submucous cellular tissue, is to be recognised by aid of laryngoscopic examination, on the epiglottis by a massy thickness, on the back part of the larynx by a series of prominent protuberances, placed beside, and behind one another, on the covering of the cartilages of Santorini and the arytaenoid cartilages, particularly on the so called cartilages of Wrisberg, by the thickening of the parts concerned, with redness or a pale colour.

C. Necrosis of the cartilages of the larynx.

It happens frequently, that in the presence of ulcers on the glottic ligaments, on the back part of the larynx, the arytaenoid cartilages are exposed, necrotic, and finally are thrown off, and

this happens only on one side, or on both, in the same manner, or in different ways. The plate of the cricoid cartilage becomes also not seldom necrotic, finally, and indeed most rarely the thyroid cartilage.

The necrosis of these latter cartilages may cause infiltration of the surrounding cellular tissue, and the formation of abscess.

With the loss of the arytaenoid cartilage occurs aphony, and an imperfect closing of the glottis during coughing and swallowing. At the loss of the two arytenoid cartilages, the expectoration is effected but very imperfectly by quick expirations.

Sometimes the loss of the arytaenoid cartilages manifests itself on laryngoscopic examination.

There is discovered a depression of the back part of the larynx in the region of the Santorinian and arytaenoid cartilages, which is more easily recognised at the loss of only one arytaenoid cartilage, but may as well fail, which happens particularly when the mucous membrane is swollen.

A second symptom, likewise of importance, only in single cases, consists in the absence of the motions, in a normal state so conspicuous, of the Santorinian and arytaenoid cartilages at the alternate opening and closing of the glottis. This is particularly remarkable, if only one arytaenoid cartilage is lost or separated from the connexions necessary for its motion. If there is severe swelling or sclerosis of the mucous membrane on the superior portion of the back part of the larynx, this sign also disappears, because, as we mentioned on a former occasion, the mobility of the arytaenoid cartilages is suspended even in consequence of such swellings.

At length, the loss of the arytaenoid cartilages is sometimes perceptible from a large ulcerous cavity on the hindmost portions of an upper and lower ligament of the glottis.

With regard to the relation between the disorders of the larynx already described, and pulmonary tubercles, I shall observe that I found in a great number of such patients examined by means of the laryngoscope, always an actual tuberculous infiltration on one tip of the lungs or on both of them, and frequently, a far advanced state of phthisis of the lungs. Only three or four cases were exemptions.

The first was that we had mentioned above, with an inflammation of the upper ligament of the glottis. In two other cases of ulcers of the lower ligaments of the glottis, the inflammatory swelling of the adjoining parts had effected stenosis of the larynx, and necessitated tracheotomy. Also here, on the most accurate examination no infiltration of the tips of the lungs was to be found, whereby I must remark, that the examination for tuberculous affections

was rendered uncertain, by the emphysema of the lungs originating from the stenosis of the larynx. Afterwards conspicuous signs of pulmonary tubercles manifested themselves, of which both the individuals died. In a fourth case likewise submitted to laryngotomy, I was not able to hear anything about the course of the tubercles, which arose probably somewhat later.

Concerning the stenosis of the larynx which accompanied them, I observed that in the cases, where the pulmonary tubercles were not yet to be demonstrated, tracheotomy could not be avoided, whilst in individuals already exhausted, and anaemic, by the progress of pulmonary tubercles, frequently repeated fits of dyspnoea depending on the straitening of the glottis, were mostly appeased without tracheotomy.

On new-formations of connective tissue of the larynx ¹⁾.

Without regarding the cicatrices, and callous degeneration of the mucous membrane, which Rokitsansky reckons here together with the papillary new-growths, and fibrous tumours, we will speak of the two latter.

A. Papillary and other small new-growths.

As papillary new-growths are reckoned by Rokitsansky, the new-formations of the size of a grain of hemp to that of a bean, seated on the entrance of the glottis, in the cavity of the larynx, and in the wind-pipe. Though there be only few histological proofs of such new-growths, we may, however number among them with much probability, a good deal of the new-formations frequently presenting themselves in laryngoscopic examinations.

On the contrary, such a peduncular new-growth, seated on a lower glottic ligament, which Bruns had lately removed with a sharp instrument, was found to be fibrous.

These new-growths generally designated by the term of „polypi of the larynx“, „condylomatous new-growths“ represent

¹⁾ Published in Allg. Wien. Zeitg. Nr. 29 and 30, Juli 22, and 29, 1862. Single pathological cases in Zeitschr. d. Gesell. d. Aerzte Nr. 11, March 14., 1859, Allg. Wien. med. Ztg. Nr. 20, 21, 22, 1859.

on laryngoscopic examination small, roundish, uneven, minute granulated, jagged protuberances, resembling a cauli-flower, either pedunculated or resting on a broad base, which are partly of a dirty yellow colour, and in some regard of gelatinous appearance, partly show a rather reddish, even livid colour. They are sometimes provided with distinct vascular injections.

One of the most usual seats of these new-growths, are the lower glottis ligaments; the first case of this kind was described by Czermak, and similar have been published by Gerhardt, Lewin, Gilowsky. They are met with here, on the upper surfaces, as well as on the free borders of them, and present themselves in the latter case sometimes, as cristiform formations implanted with a broad base, and extending longitudinally along them.

One finds them likewise, not seldom on the outer borders of the lower vocal ligaments, and in the ventricles of Morgagni.

Furthermore they occur frequently on the anterior angle of the glottis, in which case they are seated not less on the upper surface of the vocal ligaments, than on the front part of the larynx, close below the lower vocal ligaments, and may extend into the anterior angle of the glottis. More rarely they are found on the back surface of the epiglottis, and here are to be ranged according to Wedl, some of the cases of similar new-growths distributed in greater number over the posterior surface of the epiglottis, as well as downwards into the cavity of the larynx, which are reported in the work of Ehrmann „Des poly-pes du larynx“. We shall also communicate afterwards such a case, which we have had the opportunity of observing.

The place, on which these new-formations grow, is either of a normal appearance, or it shows morbid alterations. The former state is very distinctly to be seen if the lower ligaments of the glottis are the seat of the new-formations, which very strikingly contrast with the tendonlike white basis, on which they rest. The immediate vicinity of these new-formations may also appear red, swollen, and covered with secretion.

This different condition of the adjoining parts of the new-growths, is of great moment, on account of their real significance.

As concerns the new-growths in a normal appearance of the neighbouring parts, their etiology is commonly unknown, and they are to be considered, if I may be allowed to use the expression, as simple new-formations, which, according to the observations I made till now, are particularly not of a syphilitic nature. In other cases such new-formations are likely to have been the consequence of a chronic inflammation

of the larynx. It is true, especially in such cases where there are still traces of preceding inflammations.

The syphilitic new-growths have, according to the observations, I made hereto, quite a different appearance to those just mentioned.

They were all seated on a reddened swollen place, from which they mostly rose up with less sharp borders, than is the case with the new-growths described till now; though on the other hand, I had observed a case in which, after the healing of such syphilitic new-growths, and swellings of the mucous membrane by means of mercurial ointment, small, sharply bordered peduncular new-growths still remained.

I had opportunities of seeing small peduncular new-growths, particularly on the anterior angle of the glottis beside ulcers, especially in tuberculous disease. In such cases, especially in ulcerations of the larynx of tuberculous subjects, one must observe great caution, lest one takes the various prominences caused by the chronic catarrh of the larynx, for independent new-formations, and overlook the more essential part of the pathological cases that we meet with.

Finally, there are found on the lower glottic ligaments protuberances, which on a less exact investigation, look like new-formations, whilst they are really nothing else, but the borders of ulcerous losses of substance. Such a deception is more possible in a considerable swelling of the neighbouring parts, and in case, where the secretion preventing examination were not duly removed by expectoration, or very slight attempts at coughing etc.

From what has just been mentioned, it follows that on laryngoscopic examination, one must proceed with great caution in all cases, where there is no question of a new-growth seated on a healthy part, in order to get acquainted with the real state of the fact.

The constant functional alteration to which the new-formations just described give rise, if they are seated on the lower vocal ligaments, is hoarseness, which moreover, as we shall see immediately, is not exclusively caused by them as a mechanical hindrance.

The course of these new-formations is a very chronic one. They are likely to exist, sometimes during several years, without any considerable progress. Sometimes they are likely to provoke catarrh of the larynx. In one case alone under my observation, which I shall report afterwards, we saw such a considerable inflammatory and oedematous swelling of the vicinity,

that in order to save the patient, tracheotomy had to be performed.

According to my experience these new-formations have frequently an other consequence, namely they cause a paralytical gaping of the lower vocal ligaments, upon which the hoarseness in a great measure depends.

With regard to the treatment, we have to mention, independent of the syphilitic new-growths, which demand a general antisyphilitic cure, the removing of the new formations by squeezing or tearing, by excision with ensuing cauterisation or without it, by which methods according to newer publications favourable results have been obtained.

The following case deserves special mention. M. P. a tradesman, 33 years old, was admitted into the ward on the 27 August 1860.

According to his rather uncertain account four years ago, there appeared a more difficult passage of air through the nasal cavities with purulent bloody secretion. This state lasted nearly a year, and was removed by an inunction cure.

Three years ago, a physician is said to have found ulcers in his throat, which had been healed by a common cure with jodine. Since two years he suffered from hoarseness which, has since half a year, increased to aphonia; since last winter difficulty of respiration came on. The wife and children of the patient, are according to his account, healthy. He denies every primary or secondary syphilitic affection.

There is a cicatrised contraction on the soft palate, and an indistinct cicatrice on the penis.

We found the following appearances at the laryngoscopic examination made on the 14th of September: On the inferior portion of the posterior surface of the epiglottis, also on the anterior portion of the left lower glottic ligament near the anterior angle of the glottis were seated several small, pale, pointed new-growths. The two upper glottic ligaments, as well as the covering of the mucous membrane of the Santorinian and arytaenoid cartilages are reddened, oedematous, flapping at the oscillations of the vocal ligaments. By this very swelling of the upper vocal ligaments, a large portion of the lower ones is covered, so that only a thin stripe of them remains perceptible. The left lower vocal ligament remains nearly immovable in the middle line.

Laryngostenosis of more considerable intensity. Deep and fast inspirations are noisy, crowing, as is the case in croup. A moderate, consecutive pulmonary emphysema was stated.

We had recourse to a general mercurial inunction cure.

On the 2^d October the dyspnoea became so violent, that, to save the patient's life, tracheotomy had to be performed. An inunction cure performed afterwards, and the treatment with jodide of potassium had no effect at all upon the just mentioned new-growths seated on the posterior surface of the epiglottis, and on the front-portion of the left upper vocal ligament. At a later examination of the interior of the larynx through the wound of the wind-pipe after the manner of Dr. Neudörfer, convinced myself of the presence of the same small growths on the inferior surface of the foremost portion of the left lower vocal ligament, as well as on a part of the anterior side of the larynx. The paresis of the left lower vocal ligament depending, it seems, on the presence of these new-formations, remained unchanged. The oedematous swelling had disappeared.

B. Fibrous tumours.

These (the so called fibrous polypi of the larynx) are rare, but increase sometimes to a considerable size, and develop themselves in the submucous connective tissue, namely on the lower glottic ligaments. (Rokitansky.) This author has published a case of this kind with a drawing by Dr. Elfinger¹⁾.

The larynx at a front view, appeared almost cylindrical, its cavity enlarged, in the glottis filled with a firm elastic new-growth, so much so, that only on the left side, and behind it, between the arytaenoid cartilages a small space remained. This growth was half the size of a nut, roundish, on the surface superficially lobulated, in its texture very compact, of a fibrous appearance, and was situated on the right lower glottical ligament almost in its whole length, and above it downwards.²⁾

On microscopical examination the tumour proved to be fibrous. It shows in reference to its seat, form and consistency, a great similarity to two or three cases reported by Ehrmann, as may be partially seen by comparing the relative drawings. These latter ones, may therefore very probably be reckoned among the fibrous tumours. Lately a much less tumour, hanging from one of the lower glottic ligaments, by means of a duplica-

¹⁾ In a treatise on Ehrmann's *histoire des polypes du larynx* (Zeitschr. d. Ges. d. Aerzte, 3. Heft 1851.)

ture of the mucous membrane, on microscopical examination made by Bruns also proved to be fibrous.

Such, as well as other larger tumours, as for instance cancerous, when they are seated in, or below the glottis, cause besides hoarseness, and aphonia, a more or less rapidly increasing, and some times occasional difficulty of breathing, and lead to suffocation. Till now such a case did not yet come under my observation.

The symptoms may be generally less alarming, when such tumours are seated above the glottis; although it seems that also in such cases death may take place by suffocation. Similar tumours, when they were seated higher up, were removed by the knife by Regnoli and Green, in another case by Middeldorpf by his galvanocautery.

Is the tumour situated deeper, there remains as a remedy, the excision of it, at first practiced by Ehrmann, after having been preceded by tracheotomy, and the opening of the larynx in its whole length, (or after Malgaigne's laryngotomie sous-hyoidienne) or the removal by means of the galvanocautery, in the same way, as had been proposed by Friedreich.

We will now relate two cases of larger tumours situated above the glottis observed by us, of which the former is very probably, but the latter less probably, to be reckoned among the fibroid.

Case 1. A baker, 47 years old, stating to have suffered, since 1855, repeatedly from a pungent pain on the left side of the neck, which returned several times, and lasted always a few days. Nearly half a year ago, he said the respiration was somewhat noisy; but dyspnoea never appeared. Slight meagreness and rather a pale complexion had also ensued.

On laryngoscopic examination we found in the interior of the larynx a round tumour much larger than a pea, presenting the colour of the mucous membrane, which seemed, to be fixed on the left side of the interior of the larynx and extended from the anterior circumference of the Santorinian and arytaenoid cartilages to the lower portion of the posterior side of the epiglottis, from which it raised itself at short coughing and deep inspirations. At normal respiration it covered entirely both the upper and lower vocal ligaments; and it is only at deep inspirations that the right upper and lower ligament is momentary exposed to the view, below the free border of the tumour. At violent expirations, as well as in coughing, there advanced below the free border of the tumour a white, flat, uneven, granulated body, which, on this occasion, sometimes

rose upwards over the level of the Santorinian cartilages, and, therefore, necessarily rested upon the left upper or lower vocal ligament or arytaenoid cartilage. The posterior surface, as well as the left half of the free border of the epiglottis were somewhat puffed up and flushed; the former were covered with slime. The covering of the mucous membrane of the Santorinian cartilages a little puffed up, and moderately flushed, their movements were normal. The cough was of a short character, namely the beginning and the cessation of coughing are distinctly defined, the voice was loud, only somewhat hoarse.

By means of the forefinger introduced through the throat into the interior of the larynx, we were able to pass it round the tumour on its right side but not on the left, and you can assure yourself, that it is adherent by a broad basis to the left side of the larynx, perhaps also to the left lower vocal ligament. It is solid, and elastic to the touch. The flat body protruding on its inner border is very uneven, and of cartilaginous hardness.

2. Case. — This case occurred in a farmer, 22 years old, who according to his statement had been hoarse, nearly 2 years, and who, eight months ago, had become aphonus, and since that latter epoch on stronger bodily exercise, i. e. fast walking felt difficulty of breathing, which does not disturb his rest at night. At the laryngoscopic examination we discovered in the interior of the larynx a tumour which was of the size of a hazel-nut, roundish, uneven, rugged, flapped, partly reddish, partly whitishyellow, provided with single injected vessels, smooth, not covered with slime. This body is evidently adherent by a very broad basis to the left side of the entrance of the larynx, and perhaps to the posterior surface of the epiglottis, whilst between the free, flappy border, and the right side, as well as the half of the posterior part of the inside of the larynx, there remains open a long fissure, a line in breadth, which however, is not sufficient to afford us an insight into the parts more deeply situated, especially the vocal ligaments. The left half of the free, flapped border is on the contrary, so far jutting backwards, that you are prevented from seeing the Santorinian and arytaenoid cartilages situated below. The parts surrounding the tumour have quite a normal appearance. In short coughing the right Santorinian cartilage moves itself rather quickly. The beginning and cessation of the cough is not well defined, the voice is aphonus.

The tumour is not to be reached by the finger introduced into the throat.

The examination made with a curved whale-bone probe with a knob at the end, assisted by means of the laryngoscope, shows us, that the tumour is of a very great hardness.

On palpation of the region of the neck, the thyroid cartilage seems to be more expanded i. e. more obtuse on its anterior angle. The upper cornua of the thyroid-plates project by some lines more outward, than the cornua of the os hyoides, a circumstance, which otherwise may be observed also in healthy individuals.

The interstice between the os hyoides and the upper border of the thyroid cartilage is, on the left side, by some lines larger, than on the right. On pressing on this interstice on the left side, one perceives the resistance of a compact body, deeply situated, of quite undefined circumference. The motions of the larynx are quite free, and deglutition is normal. There is no pain, neither on pressure nor spontaneously, in the region of the larynx.

On cancer of the larynx ¹⁾.

Carcinoma is found in the larynx, according to Rokitsky, a) as medullary Carcinoma, viz. primitively under the form of knots in the submucous tissue, or as a degeneration of one or the other arytaenoid cartilages or the thyroid, with a future degeneration of the mucous membrane; b) far more frequently as epithelial carcinoma, so that the larynx affords one of the most remarkable seats of this affection. Hereby, either the epiglottis and the mucous membrane of the glottis with the vocal ligaments, and the arytaenoid cartilages, are often the seat of a destructive cancerous degeneration, extending over the base of the tongue and the palatal arches, which, not only, heals with ulcerous expulsion of the parasitic mass, and leaves behind it extensive, knitted, constricting cicatrices, or the epithelial carcinoma is also independently met with in the larynx and the contiguous portion of the wind-pipe. (Rokitsky, Pathol. anatomy, 3. Edition, 3. Vol., q. 25—26).

I had an opportunity of examining with the laryngoscope, three cases of extensive epithelial carcinoma.

1. Case. The first case came under my observation at the end of 1859. It was an apothecary of the age of 57 years, Ale-

¹⁾ Published in Allg. Wien. med. Zeitg. Nr. 31, Aug. 5, 1862.

xander R. He felt in the month of January 1859, during a violent sneezing, a sharp pain on the right side of the region of the fauces and in the depth of the right ear, with a simultaneous discharge of nearly some drachms of pure blood from the mouth. Since that time, the painful sensation in the depth of the right ear, and on the right side of the region of the fauces, in which especially on swallowing, returned more frequently, and in a similar manner the saliva was oftener mixed with purulent matter and blood. Since that time, the patient has often been hoarse.

On laryngoscopic examination, performed on the 2. Nov. 1859, the epiglottis was discovered flushed, swollen, laterally compressed, much reclined backwards, and in an oblique position. On the posterior surface of the right half of the free border, it was ulcerated, in the same manner the top of the right Santorinian cartilage was puffed up, of a dirty white-yellowish colour. The right Santorinian cartilage is slower in its movements, than it uses to be in the regular state, it stops nearly in the median-line, whilst the left moves regularly. On the right side of the pharynx is seated an ulcer inclined to bleed, nearly three lines broad and more than one and a half long, tending downwards to the right sinus pyriformis. There is dull pain at the seat of this ulcer. Some papillae and glands at the base of the tongue are intensely swollen. At the respiratory movements and short coughing the right Santorinian and arytaenoid cartilages are of less agility than the left ones.

On a further examination made on the 5. April 1860 we discovered the epiglottis particularly in its right section quite disfigured, tuberos, uneven, ulcerated and we observed, likewise, on its right portion near the base of the tongue a deep thoroughly perforated hole. On the angle between the epiglottis and the base of the tongue appeared a granulated white-reddish new-formation, of some lines in height, taking its course transversally. The ulceration on the right side of the pharynx continued. In the month of April 1860, after the canterisation of the ulcer of the pharynx with a concentrated solution of nitrate of silver, a painful tumour appeared on the right side of the neck, which was afterwards transformed into an abscess, opening spontaneously. On the 23. June on an other examination, we found the epiglottis considerably diminished by loss of substance in comparison with its late size, so that we obtained a more free view of the vocal ligaments, the visible parts of which were of sufficiently normal appearance. The perforating hole on the epiglottis communicated only by a small bridge with the right side of the base of the tongue; oedema had formed on the parts not yet ulcerated of the right ary-epiglottic fold.

He died on the 6. August 1860 after previous fits of shivering, and finally sopor.

Dissection showed pyaemia with purulent meningitis and hypostatic pneumonia, furthermore a cancerous growth on the base of the tongue, which advanced from here downwards to the os hyoides, and to the anterior part of the larynx.

The right half of the os hyoides was necrotised, lying exposed in the middle of a collection of ichorous matter, communicating with the abscess, which opened outwards. The epiglottis in the right half of its basis free, where a part of its substance was lost; the remaining part, drawn to the left side, puffed up, thickened, degenerated into cancer. (It was therefore, since the last laryngoscopic examination that, the above mentioned bridge on the right half of the epiglottis, had been broken through, and by that caused the separation and rotation of the latter to the left side.)

The right ary-epiglottic fold was destroyed, as well as all the glosso-epiglottic ligaments. The mucous membrane covering the right arytaenoid cartilage and that of the right upper vocal ligament, were thickened by similar new-formations. Both the left vocal ligaments, and the right lower vocal ligament were normal; the tonsils were exulcerated.

2. Case. The second case was met with in a butcher, 58 years old Augustine M. This person had felt since the month of June 1860 a pungent pain, particularly in swallowing on the right side of the pharynx, and in the depth of the ear. Six or eight weeks afterwards, the patient suddenly spit blood mixed with purulent matter on coughing, and clearing the throat, which happened repeatedly since that time. Frequently choking took place in swallowing, and the devouring of larger morsels was difficultly performed, and became more and more painful and troublesome.

The difficulty of deglutition had increased, during the autumn of the same year to a point, that the consumption of more solid food, as meat, bread etc. was impossible for the patient.

There grew in the course of the disease, on the right side of the neck and beneath the larynx, a tumour of the size of a walnut, flatly roundish, tuberos. For the whole duration of the disease hoarseness existed. His breath had a very bad smell.

At the laryngoscopic investigation made in the beginning of 1861 I discovered on the posterior portion of the right half of the free border of the epiglottis, a perforating ulcerous loss of substance, and from here towards the os hyoides, likewise an ulceration. The right cornu of the os hyoides is on a small spot

puffed up. The right Santorinian and arytaenoid cartilages, are covered by an ulcerated new-formation, seated on them, surpassing the middle line of the glottis, provided with irregular borders, and resembling a medullary carcinoma. A similar one covers the greater part of the right lower vocal ligament.

Both the left ligaments of the glottis, as well as the right Santorinian and arytaenoid cartilages are of normal appearance, and duly perform their movements. The closing of the glottis is normal.

On 29 of April appeared in the afternoon suddenly, such a great difficulty of respiration, that recourse had to be had to tracheotomy.

On the 16. May the patient died. Dissection showed an ulcerated epithelial carcinoma of the larynx; carcinoma of the lymphatic glands of the neck, phlebitis of the right jugular vein, and pyaemia.

On the right side of the larynx a cancerous mass was growing, which had destroyed the ary-epiglottic ligament, and the lateral part of the pharynx, so that on one side the necrotised epiglottis lay denuded, on the other side, the right cornu of the os hyoides was covered with ichorous matter. Downwards into the interior of the larynx the cancer extended as far as the ventricle of Morgagni, simultaneously pushing inwards the lower vocal ligament and thus changing the glottis into a mere fissure.

3. Case. This was again a man, 58 years old, Joseph S. In the month of March 1861 he felt on swallowing a pain on the right side of the neck, which augmented gradually, and which at the end of December was associated with hoarseness. His breath had a bad smell. Since the end of December little pieces of the food and fluids which he swallowed, slipped into the glottis and produced coughing. Nearly since the month of April 1862 deglutition has been very troublesome, and if not very cautious in drinking, most frequently a part of the fluids penetrates into the glottis, and produces by that means a series of violent respiratory movements, accompanied by dyspnoea, whereby the inspirations are accompanied by a croup-like sound, originating from the restrained passage of the air through the larynx. Nearly since the end of 1861 he perceived a solid, flat swelling on the lower right lateral region of the neck. On the 15. May 1862 was also seen on the right side of the free border of the epiglottis, an ulcerous loss of substance penetrating it wholly, in the vicinity of which the epiglottis is flushed. The covering of the right Santorinian and arytaenoid cartilages, as well as these cartilages themselves, have been partly destroyed by an ulcerating process;

above them is growing inwards a tuberculous, soft, red cancerous new formation, so that it surpasses with its inner free border partly the glottis, and covers entirely the posterior portion of the right lower vocal ligament. The right boundary of the pharynx near the epiglottis, is likewise ulcerated. He is able to cough short. The right lower vocal ligament stands with its inner border nearly in the median line, and remains in this position, during the movements of respiration and cough almost immoveable; the voice is hoarse.

In the beginning of July 1862, nearly the same appearances were found, only that the ulcerous destruction had made further progress. Hoarseness increased. A pressure applied between the right cornu of the os hyoides and the upper border of the right thyroid plate is painful. In swallowing the larynx makes regular movements, and also as passive, is normally moveable. On the right side of the neck, far downwards, behind the musculus sternocleidomastoideus is perceived a tumour of the size of a nut, flat, solid, slightly painful, immoveable, being in no connexion with the larynx.

When we regard these three cases, we see, that they agree not only accidentally in age (57—58 years old), but also in other respects.

The first and constantly remaining complaints, were pain in the corresponding side of the pharynx, which in two cases spread to the depth of the ear, and sometimes made swallowing very difficult; as well as a bad smell from the mouth.

Afterwards hoarseness, choking in swallowing, and difficulty of breathing came on, according as the disease spread itself to the posterior side of the larynx, to the arytaenoid cartilages, etc. In two cases, a firm uneven tumour, developed itself in the lower part of the side of the neck.

Death followed in two cases, one in about a year, and the other in a year and a half, after the first conspicuous appearances.

Laryngoscopic examination has in all cases showed on the one side of the epiglottis, an ulcerous loss of substance, perforating its whole thickness, and ulceration on the approximate side of the pharynx, with a moderate inflammation in the vicinity.

In the first case, all these ulcerations might have been taken for syphilitic ones, which usually perforate also the whole thickness of the epiglottis; but at a future period of the disease, the cancerous nature of the complaint was clear from the irregular uneven form of the epiglottis, as well as, from the extensive, granulated, reddish-white new-formation, which grew on the base of the tongue.

In both the other cases, even the first laryngoscopical exami-

nation, (although not made till after six months or a year) did not leave the least doubt about the presence of cancer of the larynx.

The view alone of the fungous, luxuriating new-formation in the interior of the larynx, was quite sufficient to form a diagnosis.

On alterations of the motions of the larynx ¹⁾

A. Paralysis of the muscles closing the glottis.

1. Phonocal paralysis of the muscles closing the glottis.

Laryngoscopic examination often shows as causes of aphony or hoarseness, an approximation of the glottic ligaments, not properly performed in the efforts of forming sound, a gaping of the glottis, and an improper oscillation of the ligaments of the glottis. This gaping may extend over the whole glottis, namely, its ligamentous, and cartilaginous portion, in a manner, that it is most considerable on the posterior end of the cartilaginous glottis, or that it appears, on the contrary, to be there in a much slighter degree, than in the middle of the glottis, a difference that had already been inferred from one of my earliest observations. Every such considerable gaping of the glottis produces aphony. In a slight degree of gaping of the whole glottis, or in gaping alone of the ligamentous portion of the glottis, which, of course, was restricted to the middle part of the lower glottic ligaments, whilst the cartilaginous glottis closed perfectly, I found only hoarseness. If we should have, in the latter case, possibly to do with a paresis of the thyro-arytaenoid muscles, running along the glottic ligaments, the cause of the gaping of the whole glottis is to be looked for, before all, in a paresis of the principal muscles which close the glottis, namely of the musculus crico-arytaenoides laterales and transversus, with which may be also associated a paresis of the muscles promoting partly the closing of the glottis, viz. the musculus thyreo-arytaenoides, and perhaps the so called (Merkel) musculus obliqui.

¹⁾ Published in the „Allgem. Wiener mediz. Zeitung“ Nr. 4 and 8, Jan. 25., Febr. 25., 1862 and for single pathological cases Zeitschr. der Ges. d. Aerzte Nr. 11, March 14., 1859, Allg. Wien. med. Ztg. Nr. 22, May 31., 1859 and Nr. 8, Febr. 21., 1860.

But all these muscles do not always participate equally of the paresis. Thus in the case to which I alluded before I saw a remarkable preponderance of the musculi obliqui.

Paresis or paralysis of the contracters of the glottis may remain, though it reaches to a higher degree, only phonetic i. e. restrained to the production of the voice, so that in the most perfect aphony, the closing of the glottis in coughing, swallowing, and pressing, succeeds duly. In the same manner the opening of the glottis is properly performed.

I found this paralysis always as a bilateral. It is founded according to my experience on several other disorders as follows:

a) Catarrhal affection of the larynx. Störk has published the first case of this sort.

b) Tracheal and bronchial catarrh, in a greater or less degree. The inspection of the larynx, shows nothing abnormal besides the gaping of the glottis, and the improper oscillation of the glottic ligaments, in attempting to produce a sound. The hoarseness or aphony, may last from a few days to some weeks, but it may also continue after the catarrh has ceased, for months and years.

c) Tubercles of the lungs. Also in this case, aphony transitory, or of longer duration, arising from paresis of the glottis, may occur, and even repeatedly in one, and the same individual.

d) Typhus fever. In a patient being aphonic a little while before death, I could not by the minutest examination state any pathological alteration on the larynx, I found the muscles on microscopic examination normal, there was, consequently, a mere nervous affection. We shall be acquainted afterwards with an other case, originating from typhus fever, and in which the laryngoscope evinced the described paralysis of the glottis.

e) New-formations of the glottic ligaments. I found them also little, repeatedly accompanied by such a considerable gaping of the lower glottic ligaments, that it seemed to have a preponderating share in the hoarseness.

As much as concerns the treatment of this state, first of all, the use of electricity is to be mentioned, by which in the aphony, long before the application of the laryngoscope, brilliant results, were sometimes obtained. The beneficial influence of the stream of induction, into which the affected muscles are interposed, by a proper application of wet sponges, often displays itself after the first sitting by diminished hoarseness, and by a greater facility in speaking, and less propensity to fatigue in speaking. This effect, often passes off very soon, and we need in order to secure success, frequent repetition.

Most recently, Maurice Mayer was very successful in another way, by the use of the electric pencil. But electricity, often, is of no effect at all.

I think, the fact observed by myself a long time ago, is deserving of interest, that aphony does not seldom disappear transitorily during the laryngoscopic examination¹⁾. This is hardly to be explained by the altered position of the parts, but rather by the excitement which arises from the examination. This observation seems to induce us in such paralytic cases to produce a direct stimulating action on the interior of the larynx, i. e. by injections of pure water, of solutions of nitrate of silver, by blowing in powders, and the like.

Emotions may have a similar influence. This took place in a case observed by me, of phonical paralysis of the muscles closing the glottis, in consequence of catarrh. In this case, a woman 47 years old, who had been since the last ten months perfectly aphonic, on seeing a child fall from the first story, and being terrified in the highest degree, she uttered some words of alarm, and from this moment she became again the perfect use of her voice.²⁾

Among the persons treated and healed in an analogous manner till now, under the supposition of chronic laryngitis, there may indeed have been some who were affected with the anomaly of mobility, which is the object of this article.

The following case affords in another sense some therapeutical interest.

It was a maid servant, 21 years old, Francisca U. She says that she had typhus fever five years ago, in consequence of which she became aphonic or intensively hoarse. A year after, the voice is said to have returned for a duration of 3 months, and disappeared hereafter anew. Since that time, the aphony she says, has lasted alternating with deep hoarseness. Five years ago menstruation is said to have appeared for the first time during the typhus fever, and to have reappeared no more since that epoch. For the last four or five years, she has been suffering from difficulty of breathing, which from time to time, is considerably worse, particularly in the night, from a sensation of heat rising to the head, and since nearly three years, from frequent head-ache.

During her sojourn in the ward, since the latter half of August 1861, she was aphonic, only sometimes intensively hoarse, the tone of the voice becoming sometimes very high.

Laryngoscopic examination frequently repeated, showed by an attempt to produce a sound, a too great gaping of the liga-

¹⁾ See Allg. Wien. med. Zeitung Nr. 8, Febr. 21., 1860.

²⁾ See Zeitschr. d. Ges. d. Aerzte Nr. 11, March 14., 1859, and Allg. Wien. med. Zeitung Nr. 25, June 21., 1859.

mentous, and cartilaginous glottis, at another time a normal closing of them. The whole inside of the larynx, and the trachea, as far as the bifurcation of the bronchii were normal, the heart and lungs normal, no bronchial catarrh.

The patient is well nourished, the skin of the face considerably flushed, the mucous membrane of the mouth rather pale, no murmuring sounds in the veins of the neck. On the 5th of January 1862 I ordered a pound of blood to be taken. On the 14th the aphony had partially, on the 15th even the hoarseness wholly disappeared, she met only with some difficulty in producing single sounds. Since the voice is returned, the difficulty of breathing as well as the sensation of pressure she continually complained of in the region of the trachea, have disappeared; the headache and the accompanying heat have diminished.

On the 21st, according to her relation, the menstruation manifested itself for the first time since five years. The voice remained normal¹⁾.

2. General paralysis of the muscles closing the glottis.

In speaking of a general paralysis of these muscles, in contradistinction to the morbid condition we called "phonetic paralysis of the muscles closing the glottis", we do not intend to indicate a paralysis of all the muscles which concur in closing the glottis, but an alteration of motility, in consequence of which is wanting the proper reciprocal approximation, and perhaps, also the tension of the lower glottic ligaments, not only in the production of the voice, but also in other functions.

You will mostly find in such cases, besides the gaping of the glottic ligaments on sounding the A, also in a slight cough an inadequate approximation of the Santorinian and arytaenoid cartilages, whilst swallowing, forcing and expectoration are performed perfectly well. These cases agree, excepting the difference just now mentioned, nearly in all other respects with the phonetic paralysis of the muscles closing the glottis. Also in those the paresis is almost always a bilateral one, and I have till now only seen one such unilateral paresis.

I had however occasion to see a case, where the muscles closing the glottis refused to act properly, not only in the production of the voice, but also in expectoration, and probably in deglutition too.

It happened in a peasant 62 years old, who stated that he had suffered for the last four weeks from a cough, and hoarseness

¹⁾ In another hysterical girl intense paralytical hoarseness frequently returned and always spontaneously vanished.

(which in the further course passed into aphony) and difficulty of deglutition.

On laryngoscopic examination, I discovered on sounding the now entirely aphonous A, a strong gaping of the lower glottic ligaments, and a strong vibration of the Santorinian and arytaenoid cartilages, which, besides in this case, I never had yet observed. In coughing, the closing of the glottis was imperfect, and the patient therefore was not able to expectorate properly. Besides this the whole interior part of the larynx, as well as a part of the trachea, were normal. After thicker bougies had been several times introduced, the difficulties of deglutition improved considerably, but still a stricture of the oesophagus could not be stated with certitude.

Although the regurgitation of solid substances and fluids had ceased, often a part of what had to be swallowed, got into the glottis, and the probable cause of this circumstance may be found in a paralysis of the muscles closing the glottis, which showed itself in an uncommon high degree in coughing, and in the attempt at sounding, and besides which there was also present an imperfect paralysis of the soft palate¹⁾.

B. Permanent unilateral restriction of the glottis.

Here the interior margin of one lower glottic ligament is more or less considerably approximated to the median line, or it even reaches it. The point of the arytaenoid cartilage of the same side, projecting very conspicuously together with the Santorinian cartilage which rests upon it, attains the median line and even surmounts it on the opposite side. In deep inspiration and expiration, in the producing of the voice, in coughing, the lower vocal

¹⁾ Since that time I had an opportunity of observing other similar cases, among which I will mention the following. In a person 42 years old with intense hoarseness, and difficulty of swallowing, on sounding the A, both lower ligaments of the glottis remained far asunder. In coughing short, the right Santorinian cartilage remains almost immovable. In coughing severer the left Santorinian cartilage inclines itself behind the right one, and the left upper ligament of the glottis protrudes with its posterior part over the middle line to the right, in order to oppose itself to the right upper, or lower ligament of the glottis, which remain quiet, withdrawn from the middle line. At this moment, the epiglottis is laterally compressed, and when the already mentioned motion of the left upper vocal ligament has arrived at its greatest height, then the epiglottis turns itself round, on its longitudinal axis, at about an angle of 45°, so that its anterior part lies forwards, and to the left.

In quick drinking, fluidity got into the nasal cavity; in swallowing, large pieces he must drink afterwards in order to be able to swallow them, but the voice is not nasal, and in blowing, the nasal cavity is sufficiently closed by the soft palate.

ligament and the arytaenoid cartilage which belongs to it, remain nearly in the mentioned attitude, or their motions are at least more circumscribed than in the normal state.

Though the functions of the said parts of the other side are perfectly well performed, the voice is necessarily more or less intensively hoarse, the cough is often not of a short character, viz. the commencement and the cessation of coughing, are not distinctly defined.

I have published the first case of this kind two years ago ¹⁾. But the nature of this state is in spite of observations, repeatedly made by various persons, still unknown, and therefore its assignation to this place not yet well founded. If one considers the matter as a paralysis of the muscles moving one of the lower glottic ligaments one should suppose not only a paralysis of the muscles opening the glottis, but mostly also such a state of the muscles closing the glottis of one side, but with a prevailing paralysis of the muscles first indicated. The protuberance of the top of the arytaenoid cartilage of the same side, would then only be a consequence of the antagonistic action of the muscles which are respectively stronger. An equal effect could perhaps be produced by a continuous spasm, contraction of the muscles closing the glottis, particularly of single bundles of the thyreo-arytaenoid muscles.

As etiological moments according to my experience, the following morbid conditions have presented themselves

a) Catarrh of the air passages. In a few cases the hoarseness was said to be the remnant of a pretended catarrh of the larynx; once emphysema of the lungs was present.

b) Rheumatism. In one case the patient was, shortly before the appearance of the hoarseness, attacked by rheumatism of the same side of the face, still existing at the time of the laryngoscopic examination which I made a quarter of a year later.

c) Carcinoma of the trachea. In one case, it was situated on the back part of the trachea, directly below the cricoid cartilage, in form of a longitudinal protuberance, running from above downwards, over a tract of an inch and a half, sending in a rectangular direction, to the same side as the seat of alteration of motility, from three to four transversal protuberances. In a second case, it was situated deeper below on the side of the paralysed part ²⁾.

¹⁾ Allg. Wien. med. Zeitung Nr. 8, Febr. 23., 1860.

²⁾ d) In one case that came under my observation, and which I previously related, also as it seemed little new-growths of connective-tissue, situated on the posterior surface of the epiglottis, the anterior part of the larynx, and on the glottic ligament of the corresponding side.

C. Spasm.

We will confine ourselves to mentioning a case, which may be perhaps interpreted as a spasm of the crico-thyroid muscles.

A servant, 20 years old, affected with rheumatism of the joints some weeks ago, became aphonus. At the investigation made not long afterwards, I found a considerable redness of the back surface of the epiglottis, and a slighter one, on the coverings of the arytaenoid, and Santorinian cartilages, as well as on the front part of the larynx. The aphonic state continued. Soon afterwards, a repeated change of aphony, with a perfectly clear, but uncommonly high voice, similar to a falsetto followed. During such a period of aphony, the laryngoscopic examination, showed a gaping of the glottic ligaments.

After that state had continued nearly half a year, I observed in the patient, returned to my department of the hospital, who now spoke with her high clear voice, a painfulness on pressure on the anterior, and side part of the cricoid cartilage, and from here to the inferior border of the thyroid.

The possible connexion of the abnormal height of voice, with a state of irritation of the crico-thyroid muscles, situated here, and which stretch the lower glottic ligaments, induced me to order a strong Belladonna ointment, to be applied to the front part of the neck. Success seemed to corroborate this supposition, for after 4 or 5 days, the painfulness on pressure disappeared, and the normal voice returned.

On straitening of the larynx ¹⁾.

We refer not only to those cases where the permeability of the larynx is altered in a manner that the necessity of breathing is only supplied by some exertion, and imperfectly, (which is properly called laryngostenosis), but also slighter degrees of straitening, in which the respiratory functions do not undergo a material alteration.

In a clinical point of view, we intend to arrange the numerous respective cases of our own experience in 3 classes, according as the portion of the larynx situated above the glottis, or the glottis itself, or, finally the part of the larynx situated below the glottis, has presented itself as being straitened.

¹⁾ Published in Allgem. Wien. mediz. Ztg. Nr. 32 and 33, Aug. 12. and 19., 1862.

A. Straiteming of the part of the larynx situated above the glottis.

Passing over the oedematous swelling of the ary-epiglottic folds, no case for laryngoscopic examination having presented itself, we shall briefly expose first of all a case, in which the entrance of the larynx was straitened by a cancerous tumour seated on the pharynx. This was a case of a man, 62 years old, who on his admission into our wards on the 18 of July 1860 stated to have perceived, since May of the same year a rapid increase of his struma, which had existed some length of time. In the last three weeks swallowing was more difficult; during which very often fragments of food got into the glottis. Since nearly the same time he also suffered from difficulty of respiration in taking severe exercise. The larynx is pushed to the right side by a tumour of the size of the fist of an adult, originating from the left flap of the thyroid gland; the voice is somewhat nasal.

On laryngoscopic investigation one perceives, the tumour extending beyond the left lateral to the posterior part of the pharynx. There it forms an irregular protuberance of nearly the size of a walnut, behind the larynx, which protrudes from the left to the right, transversally under the whole of the epiglottis.

Increased difficulty of respiration demanded recourse to be had to tracheotomy.

On dissection the before mentioned tumour presented itself as a cancer.

I make here mention of a second analogous case, although there was no straitening of the entrance of the larynx. It was a girl of 25 years of age, who suffered, since three years from a slight pain in the pharynx, which grew more violent these three months. From that time appeared considerable difficulty in swallowing. Here as in the first case it happened frequently, that morsals of food got into the glottis. The voice is somewhat nasal.

Also here the laryngoscopic examination showed a probably cancerous tumour, seated on the posterior part of the pharynx, running along its whole extent in a transversal direction, behind the arytaenoid and Santorinian cartilages.

In this case, as well as in the former, the mechanical warding off of the food without doubt, had a material share in directing it into the glottis.

Here belong furthermore cases, in which the straitening is effected by tumours seated on the inside of the upper

portion of the larynx. We have examined two cases of this kind, both of which we have described on a former occasion, when we treated of the fibrous tumours of the larynx.

Lastly we have to mention here still two cases of carcinoma, in which, as we had already mentioned above, cancerous tumours, originating from the lateral, or posterior part of the upper portion of the larynx protuberated over the middle of the glottis.

B. Straiteming of the glottis.

The pathological affections, that had given rise in the cases observed by us, to straitening of the glottis, were the following:

1) The catarrhal inflammation.

a. *The acute catarrhal inflammation.* We have explained already formerly, the way of the formation of the stenosis of the glottis in acute catarrhal inflammation, and refer in this respect as well as in regard to the laryngostenosis in other forms of inflammation of the mucous membrane, to what had been said before, p. 17.

b. *In simple chronic catarrh of the larynx,* we also saw, but only in a slighter degree, a straitening of the larynx, produced by a swelling of the lower vocal ligaments, and the posterior part of the larynx.

2) The syphilitic inflammation of the mucous membrane of the larynx.

3) The croupous inflammation.

No laryngoscopic observations being at our disposal, let us call attention only in a few words, to the straitening of the glottis, which is already occasioned in some degree by the envelopment of the vocal ligaments with a pseudomembrane, further to the still more important, as it seems, oedema of the vocal ligaments, which is not only observed in their own croupous affection, but also in the croup of more distant parts of the larynx, for instance of the epiglottis alone, especially in small-pox, and leads to a fatal end.

4) Inflammation and oedema of the vocal ligaments and the upper portion of the posterior part of the larynx, as a consequence of perichondritis laryngea.

We have observed, as has been treated upon on a former occasion, cases of perichondritis in typhus fever, in small-pox

cases of syphilitic perichondritis, in which, undoubtedly, such inflammatory and oedematous swellings of the lower vocal ligaments, with or without those of the upper ones, had formed the only, or at least by far the most preponderating moment for the intense straitening of the larynx. In other cases, especially in a case of perichondritis in an individual affected with typhus fever, the straitening of the glottis was, however, too inconsiderable, to account for the high degree of dyspnoea, and in such cases, without doubt a swelling of the portion of the larynx situated beneath the glottis plays an important part in the laryngostenosis.

5) Ulcers of the lower vocal ligaments.

In these ulcers, if they are of a larger extent, particularly, if they occupy the glottis in its whole length, there is sometimes existing an enlargement of the lower vocal ligaments; but the straitening arises principally from the inflammation of the neighbouring parts, to which belong particularly, also the superior portion of the back part of the larynx. The straitening of the glottis produced by it, is apt to become very great, so that tracheotomy must sometimes be resorted to. To these we must add:

a. The syphilitic ulcers.

b. *The diphtheritic ulcers in typhus fever.* We have observed an only case, which, undoubtedly belongs hereto, and have also mentioned it on a preceding occasion, in which the laryngoscopic examination demonstrated a deep loss of substance in one lower vocal ligament with intense inflammatory oedema of the two lower vocal ligaments, and the backpart of the larynx.

c. *The ulcers in tubercles of the lungs.* We mention here, besides the more acute, especially, the chronic catarrhal inflammation accompanying occasionally the ulcers of the larynx in tubercles of the lungs, which leads to callous degeneration of the mucous membrane (Rokitansky), and contributes in no small degree and in similar way as acute catarrhal inflammation to the straitening of the larynx.

d. *Other sorts of ulcers which are not to be determined more particularly.* Several of such cases happened to come under our observation. Among those, I must before all, mention such ulcers, which seemed to be syphilitic according to the anamnestical moments, but which resisted a general antisyphilitic cure. Their syphilitic character remained therefore doubtful. In a case of this description, tracheotomy was necessary. Further, we shall hint at other cases, which strictly do not belong

to that sort, and a few of which I had observed, viz. among elderly men.

One was a man, 58 years old, the second a still older individual. In both these cases, there were to be seen on the covering of the mucous membrane of the Santorinian and arytaenoid cartilages, dirty white-yellowish, extensive spots, but not sufficiently exact to be recognised as ulcers, the vicinity of the mucous membrane puffed up, flushed, and the glottis by that means contracted.

In one of these cases recourse was had to tracheotomy. Finally may be mentioned still other ulcers with inflammation, and swelling of the neighbouring parts in various forms, the detailed description of which we shall here pass over.

6. Cicatrices.

a. *Cicatrization after injuries.* As regards this, I had an opportunity of observing a very remarkable case¹⁾.

This case was a shoemaker's apprentice, who had cut his throat, whereby the left lower and upper vocal ligaments, were transversally cut through. In consequence of the consecutive inflammation, a perfect growing together of the greater posterior portion of the left lower ligament, with the corresponding part of the uninjured right one by means of a connecting membrane took place. In the vicinity of the posterior angle of the glottis, there existed in the left half of the larynx a hole, conducting to its inside, the anterior border of which, was formed by the former edge of the wound of the left lower vocal ligament, which had been cut through, and through which the patient breathed. At the sounding of the vowel A, the uninjured right lower vocal ligament vibrated in its entire length. This vibration was possible from this circumstance, that by the approximation of the inner border of the said lower vocal ligament to the median line, the connecting membrane was relaxed. The patient's voice was still only somewhat hoarse, and strange to say, had retained the extent of an octave with four falsetto tones.

b. *Cicatrization after ulcers.* To this class belong the cases of laryngostenosis likewise published by ourselves²⁾, which was the consequence of syphilitic ulcers, having preceded undoubtedly in one case, and probably in the second. In the former of them tracheotomy was required, while in the second, an additional catarrh of the air passages increased the difficulties of breathing, otherwise not considerable, to a dyspnoea of high degree, which

¹⁾ See: Allgemeine Wiener mediz. Zeitung Nr. 20 and 25, May 17., June 21., 1859.
²⁾ Allg. W. med. Zeitg. Nr. 22 1859.

were reduced, by an antiphlogistical treatment, after dissolution of the catarrh, to their former state. Hereto may be added perhaps a third case, in an individual, that was affected with secondary syphilitic symptoms, and in whom I discovered an extensive uneven membranous growth, on the lower glottic ligaments at their anterior angle, by means of which the interior borders of these ligaments, were connected together.

7) New-growths.

a. *The smaller papillary and other small growths*, do not hinder materially, as has been before mentioned, the permeability of the glottis, though they are seated on the free borders of the lower glottic ligaments. But we must call to mind also here, the case mentioned already before, where, as it seemed, issuing from similar growths, inflammatory oedema arose, which led to an intense stenosis of the glottis, so that tracheotomy was indispensable.

b. *The syphilitic growths*. I had an opportunity of observing a very exquisite case of this kind, in which, after the greater part of the epiglottis, and the ary-epiglottic folds were destroyed, several large new-growths which partly arose from the rests of the before mentioned parts, partly, as it seemed from the upper glottic ligaments, and an accessory swelling of the upper glottic ligaments, gave rise to an intense stenosis of the glottis.

c. *The lupous growths*. In a girl affected with lupus, the moderate straitening of the glottis, was particularly owing to a great number of growths on the back-part of the larynx ¹⁾.

8) Protuberance of one lower glottic ligament to the median line or even beyond it.

a. *By an undermining abscess*, as was to be found in a case of perichondritis, described before.

b. *By carcinoma*. As we had already mentioned, when we spoke of the carcinoma of the larynx, there was seen in one of the reported cases, a cancerous mass growing on the right side of the larynx, which pushed inwards the right lower glottic ligament, and thus the glottis was converted into an archlike fissure.

c. Finally we must number here the straitening of one half of the glottis, caused by *abnormality of the muscular action*, and explained before.

If we remember the case described by us among the papillary growths, in which inflammatory oedema was associated with such a partial alteration of motility, and in which tracheotomy was rendered indispensable, it is obvious to suppose, that in this

¹⁾ See two cases of lupus of the larynx in Zeitschr. d. Gesells. d. Aerzte Nr. 11, March 14., 1859 and Allg. med. Zeitung Nr. 8, Febr. 21., 1860.

case, the just mentioned unilateral straitening of the glottis by abnormal muscular action, may have contributed its due part to the high degree of stenosis that followed. It may be here also more dangerous, to remove the canula, and to bring about a closing of the artificial canal, which had been produced by the tracheotomy.

C. Straitening of the portion of the larynx situated beneath the glottis.

We have to consider here, the following morbid conditions:

1) Circular straitening beneath the glottis.

Some time ago ¹⁾, we had published a case of this kind, which was a shoemaker's apprentice, 14 years old, who suffered, these five months from a cough and difficulty of breathing, which symptoms were relieved materially by bloodletting, and where the laryngoscopic examination showed a circular border, situated close under the glottis, whereby the opening of the larynx was straitened to the size of nearly a quill.

A similar case of a less intense straitening, belonging also without any doubt to a croupous process, we had an opportunity of observing afterwards.

This was a maid-servant, 24 years old, suffering some months ago from hoarseness, cough, dryness and pain in the larynx.

On the laryngoscopic examination, made on the 14. August 1861 I found both the lower glottic ligaments superficially ulcerated; on the anterior angle of the glottis a small peduncular new-growth; quite close below the lower glottic ligaments, I saw a circular covering, nearly a line broad, intensely green, uneven, firmly adhering. An analogous covering appeared likewise, on the posterior part of the pharynx, and on the pharyngo-nasal cavity. The patient's breath had a very bad smell. At the same time, there were present a vaginal blennorrhoea, and superficial ulcerations on the orifice of the uterus. That greenish covering could as a sufficiently tough membrane be stripped off the side of the pharynx. The mucous membrane situated below it was a little flushed, and not bleeding.

At the microscopical examination it was seen to consist of slime and epithelium. As often as the membrane was removed, it was reproduced.

¹⁾ Allgem. Wien. med. Zeitung Nr. 8, February 21., 1860.

The state of the patient remained, in spite of a treatment with iodine, and an inunction cure, unchanged. It was only by the continued application of the vapours of warm water by inspiration, that the elimination of that covering ensued, which by the repeated use of the remedy did not return. It is remarkable that, we saw appear as the basis of the before mentioned green covering, a circular membrane of new-formation, thin, whitish, here and there nearly transparent, perforated in form of a net towards the anterior angle of the glottis, which allowed however, so large an aperture to be open, that respiration was performed without the least difficulty, and that one was able to see through it as far as the bifurcation of the bronchii. The back part of the trachea presented itself, in its whole longitudinal extension, beset with quite small prominences, which seemed to be swollen mucous glands. The superficial ulcers on the lower glottic ligaments, were consolidated, the small new-growth on the front-angle of the glottis was shrunk into a minimum size.

2) Perichondritis of the larynx.

As we had remarked before (p. 56), certain cases of this disorder belong to here, in which the straitening of the glottis, caused by the consecutive inflammatory swelling of the lower glottic ligaments is too little, to be sufficient, to explain the intense disturbance in respiration, in which, accordingly, also a straitening in that portion of the larynx situated below the glottis must have been supposed.

Hereto we are obliged to refer a case¹⁾, we had observed a long while before. It was a maid servant 38 years old, who suffered nearly these nine months from hoarseness, and periodically from dyspnoea, in the beginning with a pain in the larynx. Since nearly a week dyspnoea had increased, and reached by the 25. January 1859 a considerable degree under the appearances of laryngostenosis. On laryngoscopic examination, I found a very considerable inflammatory swelling of the right upper glottic ligament, whereby not only the ventricle of Morgagni disappeared entirely, but also the right lower glottic ligament was nearly quite covered. In the same manner, the inner side of the right ary-epiglottic fold appeared flushed and puffed up. The normal left lower glottic ligament at each inspiration, was with drawn sufficiently from the median line, so that a large space was consequently left open for breathing, and therefore the principal

¹⁾ Zeitschrift der Ges. der Aerzte Nr. 11, March 14., 1859.

seat of the complaint had to be looked for on a lower part of the larynx. Tracheotomy was obliged to be performed, and the patient afterwards left the hospital, quite recovered. We were not able to pass a certain sentence on the process on which the present case was founded.

3) Tumours occurring on the inside of the larynx.

4) I observed a peculiar straitening of the larynx some time after laryngo-tracheotomy had been performed. The patient was, at a later period of typhus fever attacked by oedema of the lower and upper glottic ligaments, as a consequence of diphtheritic ulcers or of a perichondritis, and therefore submitted to laryngo-tracheotomy on the 7. January 1859.

In June 1862 I had occasion to examine him again.

The glottis was not only straitened by the still remaining swelling of the lower vocal ligaments, which was visible also from below, which ligaments on slight lateral pressure of the thyroid plates perfectly joined together, but almost immediately below them, the larynx was also straitened from before to behind. This was caused not only by an uneven protuberance on the lower section of the back part of the larynx, which fitted in the lateral opening of the canula, but also by the retraction of the posterior part of the upper side of the artificial canal, formed partially by the ligament. conicum. For, on drawing it forwards by means of a sound with a knob at the end, two lateral folds were to be seen extended, running from it to the lateral and posterior part of the larynx, or trachea.

On straitening of the trachea¹⁾.

The first case observed by me, happened in a shoemaker's apprentice of 18 years old, who has been suffering for the last half year from difficulty of breathing, particularly on taking severe exercise, and perceived since then on inspiration, the actually existing noise arising from the retarded passage of air through the wind-pipe. During the last weeks the difficulty of breathing had increased, so that he is no more able to run, and is often obliged to give up his work. The last nights he was obliged

¹⁾ Published in Allg. Wien. med. Ztg. Nr. 6, Febr. 22, 1862.

sometimes to sit up in bed. His voice is said to have been clear and strong, till shortly before his admission into the hospital on the 26. of January 1862. Only at this latter period cough came on, transitory hoarseness, and pain on both sides of the chest, which appearances were before wanting, and have disappeared a few days ago with the exception of a trifling cough, producing a slight expectoration of mucus resembling spittle.

Half a year ago, he pretends first to have observed a moderate swelling of the thyroid gland; swallowing was always normal, pains in the region of the larynx, and the wind-pipe were never present.

On examination, we remark first of all the respiratory movements. During inspiration we see, when the patient is perfectly quiet, the grooves on the neck fall in slightly, and on exertion deeper. At each inspiration the scrobiculum cordis with the cartilages of the last true ribs, and the upper false ones, sink in deeply, whilst the superior portion of the thorax extends from behind to before, and the larger lower part laterally enlarges; at the same time, the powerful contraction of the diaphragm is recognisable by a considerable protuberance of the lower part of the belly. On expiration, the profound sinking in about the scrobiculum cordis, becomes more level, in spite of the depression of the undermost portion of the breastbone, arising from his trade. This abnormality of respiration is to be found in a higher degree of stenosis of the larynx; I saw it too, some years ago, in a case of stenosis of the wind-pipe, which had then not yet been examined by the laryngoscope. I only saw it in young individuals, and it is without doubt, founded on this circumstance, that in a powerful action of the muscles elevating the ribs, and of the diaphragm, and at an insufficient permeability of the larynx or the wind-pipe, there arises in the chest, during the inspiration, an exceeding rarefaction of air, in which the cartilages of the ribs, still supple, are not able to offer sufficient resistance to the atmospheric pressure.

The in- and expirations are protracted, very deep inspiration is accompanied by a blowing and rattling noise, which at the movements of the patient becomes loud, or accompanied by a dull sound, like that of persons affected with a high degree of struma. Expiration succeeds under a similar, but much weaker noise. The sound of percussion on the thorax is full, clear, (also on the sternum); the perfect dulness of the liver begins in the mamillary line, only a thumb's breadth, in the axillary line three fingers breadth above the arch of the ribs, the point of the heart stands more inwards; consequently there was formed a consecutive emphysema of the lungs. Even during the deepest inspiration, one hears only in the anterior upper region of the chest

a weak undetermined respiratory murmur. Over the rest of the chest, we hear only a weak dull murmuring, with the above mentioned tracheal noises.

The sounds of the heart and of the aorta are clear. Pulse 80—100, respirations 12—16. No cyanosis, no oedema. The thyroid gland is moderately increased, its middle flap does not reach wholly to the half moon-like border of the sternum. It is easily moveable. Pressure on the larynx and trachea, is not painful.

The voice of the patient is clear, he speaks as loud as any healthy individual. Only in attempting to shout, the voice appears to be weaker.

On laryngoscopic examination, I find a perfectly normal appearance of the larynx, and of its neighbouring parts, proper closing of the glottis; on the contrary, the trachea appears in an upper part straitened in such a high degree, that its opening represents nothing more than a very small fissure running from before to behind.

The mucous membrane of the trachea down to this fissure is reddened and puffed up, nevertheless you may distinguish accurately some of the tracheal rings which are covered by it. The margins of the fissure are uneven. During expiration the fissure is apparently wider than during inspiration, where it is undoubtedly, in consequence of the atmospheric pressure more contracted, and at the same time the trifling secretions found above the fissure, are sucked in.

Laryngoscopic examination at the moment as the patient uttered a strong yelling high tone, was of a particular interest for me. It was produced by an expiration, at which the margins of the fissure oscillated in their whole length, whilst the glottic ligaments remained perfectly quiet, widely separated from each other. The margins of the fissure, belonging to the wind-pipe, had therefore undertaken the office of the lower glottic ligaments.

By ¹⁾ means of quietude and under an indifferent treatment, the difficulty of breathing considerably diminished since the 7. of February; on the 12. February the above mentioned modification of the respiratory movements had already disappeared. On the 13. of March in a state of quietude respiration was quite free. A laryngoscopic examination stated, that the opening of the straitened part, had considerably enlarged. One could now make out more accurately, that the straitening began at the 3^d or 4th tracheal ring, and extended from there over nearly

¹⁾ The following has been published in Allg. Wien. mediz. Zeitung Nr. 34, Aug. 26, 1862.

4 or 6 tracheal rings downwards. The mucous membrane only on the right side of the straitened place was a little reddened.

In the latter half of May the thyroid gland swelled more considerably, and difficulty of respiration reappeared, which two phenomena again diminished under the use of jodine with glycerine; but the straitening of the windpipe was, however still present on his discharge which took place on 22. July. It was, as we must conclude from its situation, produced by the pressure of the but inconsiderable struma, and had increased to a very high degree by the catarrhal inflammation of the contracted part.

In two other cases which I observed, the straitening of the wind-pipe, also depended on struma, but of greater size, and had attained no high degree.

One of these two cases presented the peculiarity, that the cricoid cartilage inclined to the right side, and stood at the same time higher on that side.

In laryngoscopic examination, we saw a straitening of slight degree beginning in a deeper part of the trachea than in the first case. The longitudinal diameter of the straitened spot, did not however stand in the median line from before to behind, but in an oblique direction from before on the left, to behind on the right; therefore, pressure must also have operated in an oblique direction. The compressing tumour must necessarily be situated either towards the left and behind, or to the right and before the trachea. The portion of the trachea situated above the straitened part stood, probably in consequence of the above mentioned position of the cricoid cartilage, in another sense obliquely, so that the left side of that portion of the wind-pipe presented on laryngoscopic examination rather a partial front view.

A 4. case of straitening of the trachea terminated fatally. The excessive swelling of the thyroid gland had depended in that case on carcinoma.

The patient, 62 years old, affected, since several years, with asthmatic complaint and cough, remarked since nearly a month a rapid increase of her thyroid gland, which had always been tolerably swollen, to the size of a fist. These 3 or 4 days difficulty of breathing increased, and since last night inspiration became whistling.

The laryngoscopic examination, made on the day of her admittance into the hospital, the 19. March 1862 showed the existence of an intense straitening of the trachea, as its left side, on which the tracheal rings could not be distinguished, protuberated, a finger or a finger and a half in breadth below the larynx, to the right side, and thus converted the opening of the trachea into

a fissure. This fissure, as well as the glottis were in a slightly oblique position, taking their course from the left and before, to the right and behind.

Pressure had, evidently operated here from the left to the right, and from behind forwards.

Breathing was rustling, dyspnoea considerable, the voice normal. The patient died on the 22. March. Dissection showed, that the posterior portion of the left part of the trachea protuberated into the opening of the trachea from the 6 to the 12 tracheal ring, which corresponded with the prevailing increase of the left flap of the thyroid gland.

On tracheal tumours¹⁾.

The first case observed by me was a man, 67 years old, who came under my treatment, on the 4th June 1860. He suffered from a stricture of high degree at the entrance to the oesophagus, and since nearly two months, from hoarseness, with transitory aphonia.

On laryngoscopic examination, the right lower glottic ligament presented itself, standing with its interior border nearly in the median line, and the right Santorinian cartilage somewhat more elevated. The opening of the glottis, at a deep inspiration, was for the greater part only indebted to the outward motion of the left lower glottic ligament. Besides this you discover below the glottis, an oval tumour, extending from behind to before, and from above downwards, which seemed to sit, on account of its little distance from the lower glottic ligaments, on the undermost portion of the back part of the larynx, or on the uppermost portion of the back part of the wind-pipe. On account the straitness of the glottis, a safe judgement could not be pronounced, nor was it possible to determine, even approximately, how far the tumour extended downwards.

With regard to the presence of a stricture of the oesophagus, and the anamnesis, there could not be any doubt, that we had to do with a cancer emerging from this organ.

Dissection made a month afterwards, confirmed this supposition.

The cancerous tumour restricting the oesophagus, extended itself on the back part of the trachea just below the cricoid car-

¹⁾ Published in „Allg. Wien. med. Ztg.“ Nr. 8, Febr. 19., 1861.

tilage, and formed in this way a longitudinal protuberance, running from above downwards, over a length of near an inch and a half.

In the dead subject, the above mentioned discrepancy of the two lower vocal ligaments, and the Santorinian cartilages had disappeared, and there was no anatomical reason for this condition, to be found. The enormous position of the right vocal ligament, and of the Santorinian cartilage, is consequently, in this case, as well as in others, that I had repeatedly mentioned, to be considered as an abnormality of motility, which may consist in a paralysis of the right musc. cricoarytaenoid. postic. or in a spasm of its antagonists.

In the second case, I had observed likewise on the summer 1860, a protuberance had its seat lower in the trachea. The patient, affected at the same time, with an enlargement of the thyroid gland, suffered a year ago, from a periodical asthma, which was afterwards accompanied with a cough. In the depth of the trachea, I discovered a protuberance, issuing from the back and right side, encompassing nearly a third of its canal. The great number of tracheal rings, situated above it, prove its deep seat. The free surface of this protuberance, facing the opposite side of the trachea, can be viewed over a length of a few lines into the depth. As far as it can be explored, it is level, provided only with small, but apparently irregular unevennesses; its colour is nearly that of the other mucous membrane. From the small inequalities of the surface, from the want of any trace of tracheal rings, upon the surface of that protuberance, we may perhaps be induced to conclude, that it does not only consist in a protrusion of the tracheal tube, by pressure from without, but, that we might have to do also with an alteration of the trachea itself, which however, may be combined with such an outward pressure¹⁾. As regards the distance of the protuberance from the right bronchus, it must have been sufficiently large to admit a free passage of air through the latter. This we can conclude from the slightness of the asthma, for which the extensive, and moderate bronchial catarrh that was present at the same time, affords a further reason, as well as from the circumstance, that the respiratory noise was to be heard with equal clearness over both the lungs.

¹⁾ Observations, which I made afterwards on compression of the trachea in higher parts, prove, that by that alone the tracheal rings may be invisible at the points, which are pushed inwardly. In the present case it is therefore quite doubtful, whether it was more than a simple compression of the trachea, perhaps by the thyroid gland. (Struma subternalis?)

The third case was a waiter, 38 years old, admitted for a catarrhal affection of the larynx, into my department. On laryngoscopic examination I discovered on the free border of the epiglottis a round tumour, of the size of a grain of hemp, and a second, of nearly the size of a very small pea, below the glottis, seated on the back part of the lowest portion of the larynx, or the highest of the trachea, with a base somewhat smaller on the left side. This seat is best to be made out, by examining the patient in the rotation of his head to the right, or to the left, because, at the rotation of the head to one side, a considerable portion of the opposite sidepart of the lower section of the larynx, or the upper of the trachea, is exposed to view. Looking beyond the tumour, i. e. below it, we discover the posterior part of the trachea, through a large tract, till the point of bifurcation, and in the same manner also the remaining portion of the windpipe in its whole length, of normal appearance, as well as the visible part of the 3 or 4 cartilaginous rings of both bronchii.

After the catarrhal affection of the larynx had terminated, the hoarseness disappeared also.

On syphilitic ulcers on the sides of the pharyngo-nasal cavity¹⁾.

Till now I had an opportunity of observing three cases of this kind, which I shall here briefly explain.

1. Case. Peter D., a turner, 20 years old, came under my treatment on the 15. July 1861. He had caught in the middle of April 1861 a chancre, which after a superficial cure broke out again, and was now discovered as an ulcer of the size of a pea, not indurated.

On examination made on the following day, we saw an ulcer on the left tonsil, and ulcers on the posterior part of the throat; besides this, a syphilitic acne. The rhinoscopic examination showed ulcers, partly covered with pus, moderately extended on the roof (upper part) of the pharyngo-nasal cavity. He was cured by rubbing in mercury.

2. Case. Leopold S., a confectioner, 18 years old, admitted into my department on the 28. of June 1861. A month and a half before a perforation of the soft palate took place, and a few days before his admission there appeared a swelling on the left side of the roots of the nose, which presented when he came, an

¹⁾ Published in the Allg. Wien. mediz. Ztg. Nr. 48, Nov. 26., 1861.

abscess, threatening to burst, and disappearing under the use of iodide of potassium. We found ulcers on the arches of the palate. The rhinoscopic examination showed a great number of confluent ulcers, covered with thick matter, on the anterior portion of the back surface of the soft palate. They were much larger than the superficial ulcers, that surrounded the perforated spot on the anterior surface of the palate. There were to be found several small new-growths of the mucous membrane, about the posterior openings of the nasal cavity, and on the roof of the pharyngo-nasal cavity.

3. case. Susanna S., a labouring woman, 36 years old, married, admitted into my ward on the 6. of November 1861. She had become according to her statement, three years ago, an ulcer on the soft palate, which healed under a mere local treatment. The voice is said not to have been then nasal. Two months ago new losses of substance were produced on the soft palate, which had, as she said, been followed by the nasal tone of voice.

On inspection of the throat, we discovered great losses of substance on both arches of the palate, and on the soft palate, on which is to be seen, not far from the borders of the last loss of substance, an old radiant cicatrice, large ulcers on the back part of the pharynx, which extend upwards as far as its upper end, and downwards to nearly a level with the origin of the arches of the palate. Rhinoscopic examination shows deep cicatrised losses of substance, provided with cord-like prominences, on the two lateral regions of the back surface of the soft palate, the middle portion of which, presents ulcerations, covered with purulent matter. On the roof of the pharyngo-nasal cavity we discover a seemingly deep, large loss of substance bordered by cord-like protuberances, in the vicinity of which, we see small roundish new-growths, as well as some ulcers; moreover the mucous membrane on all sides of the pharyngo-nasal cavity, is here and there of uneven appearance. The larynx presents a large loss of substance of the epiglottis, and besides that, two new-growths resembling the flat condyloms, the one of which, sitting, as it seems, on the covering of the mucous membrane of the left arytaenoid cartilage, hides the back portion of the left lower glottic ligament, whilst the second, issuing probably from the right upper glottic ligament, deprives us of the sight of the right lower glottic ligament, with the exception of a small strip. The visible parts of the two lower vocal ligaments are normal, the closure of the glottis likewise. The voice somewhat hoarse. The portion of the pharyngeal mucous membrane situated between the larynx, and the region of the lower ends of the arches of the palate is quite normal.

From these few observations, we will direct our attention to the following points.

In the two cases of perforation of the soft palate, the ulcerous loss of substance of the posterior surface, prevailed on that of the anterior surface, and it was probably that where the perforation issued from.

In all the three cases, the ulcers of the pharyngo-nasal cavity were not isolated, but accompanied by such of the posterior part of the pharynx.

Contrary to that, I found in other cases examined by me, that ulcers occur frequently on the just mentioned places without continuing into the pharyngo-nasal cavity, or at least beyond its posterior part.

One may judge from these few observations, of the importance of the rhinoscopic examination in syphilitic individuals, particularly as regards preventing perforations of the soft palate.

According to my observations, furrows and other unevennesses, are occurring on the sides of the cavum pharyngo-nasale, as well as very small new-growths, which give only a more minute granulated appearance to the mucous membrane, or larger roundish, more or less pedunculated ones, which are decidedly, not of a syphilitic nature, and which we meet with in otherwise healthy persons, perhaps merely as consequences of preceding catarrhal affections. Thus, the same alterations I found in the three just exposed cases, are not to be necessarily attributed to syphilis.

A field not less rich for similar rhinoscopic examinations, may be particularly presented, in diseases of the skin.

With regard to the method of examining ulcers of the pharyngo-nasal cavity, I shall remark, that for obtaining an exact insight, it is necessary to free the ulcerous surfaces from the pus; and where there are perforations of the soft palate, from the remnants of food, which are sometimes found here, in no small quantity. I effect this by injections of lukewarm, and if there are ulcers that easily bleed, of cold water, by aid of a syringe, the mouthpiece of which, is at its anterior end bent upwards, at an acute angle approaching to a right one, in order to be able to rinse the anterior, and upper part of the pharyngo-nasal cavity.

After having introduced the end of the syringe through the mouth between the soft palate, and the posterior part of the pharynx, the head must be bent forwards at the discharging of the syringe, to allow the injected water to run out of the mouth and nostrils, a proceeding, which can be made use of, also for the injections of medicinal fluids.

For the rhinoscopic examination itself, the use of different curved probes, made of whale bone, and others is to be recommended, especially for the discovery of necrotic bones contained in hollow cavities.

On neuralgia and hyperaesthesia of the entrance of the pharynx ¹⁾.

The subject of this is a complaint, belonging to neuralgia and hyperaesthesia, which is limited to certain portions of the entrance of the pharynx, and which also extends beyond it. It is certainly not a rare one because six similar cases have, during the latter months, occurred to me ²⁾.

I discovered the seat of the hyperaesthesia by exploration with a curved whalebone probe, with a small knob at the end, or still better, with the aid of the index finger properly pressed against the parts.

Perhaps it may not be quite superfluous to hint on this occasion, that one must take care at similar investigations, not to apply the nail of the finger to the parts submitted to exploration, otherwise you will produce pain, also in quite healthy parts.

At the exploration performed in such a manner, the following parts have presented themselves as the seat of the complaint.

a) The posterior and exterior part of the base of the tongue, situated behind the lingual insertion of the anterior palatal arch (arcus glossopalatinus), and constantly in all those 6 cases. In some cases, only a small spot behind that insertion was affected, in others, the hyperaesthesia extended from here in the same direction backwards, and downwards as far as the os hyoides.

The greater middle part of the posterior portion of the root of the tongue remained free, though its lateral parts were attacked in the said manner ³⁾.

b) The tonsil, the ovale groove situated between it, and the root of the tongue, fovea ovalis (Tourtal), and the inferior portions of the two palatal arches. All these parts were less constantly affected. The touching of the tonsils and palatal arches, often produced a violent cough.

c) Beyond the entrance of the throat, we saw in the cavity of the mouth several times, the back portion of the margin of the

¹⁾ Published in Allg. Wien. med. Ztg. Nr. 9, March 4, 1862.

²⁾ Since this time, a greater number of cases came under my observation.

³⁾ In others also the middle part was affected.

tongue, once the inferior part of the cavity of the mouth, the gum behind and under the latter inferior molar tooth, finally, the side-part of the pharynx, affected with hyperaesthesia. The hyperaesthesia, was mostly found simultaneously on both sides, but then also always preponderating on one side.

At the laryngo-pharyngoscopic examination all the above mentioned parts presented a normal appearance. The complaints of the patient were various. They consisted in painful sensations, which were characterised as pricking, cutting, and scratching, and had, as it was accurately made out by pressure with the fingers, their seat on the indicated spots at the root of the tongue, the tonsils, the palatal arches, and sometimes attained to a considerable, but never exceedingly high degree of violence. These pains sometimes induced the patient to suppose, he had an ulcer, or made him afraid of cancer.

Sometimes they extended along the one or other margin of the tongue forwards, once combined with numbness, and thus represented a true neuralgia of the tongue. Just the same as the hyperaesthesia, these pains were on both sides, but always on one side more excessive.

In other cases, the pains consisted in less perceptible painful impressions, in some difficulty of deglutition, the sensation of swelling, or of a foreign body in the pharynx, the sensation of dryness in the pharynx and larynx. Alterations of the taste were not observed.

On account of these complaints the patients requested the laryngoscopic examination, which always led to a negative result, whilst the touching with the probe or the finger, taught us the seat, and nature of the illness.

In an etiological sense, we must adduce, that there were among six patients two men, one 37 and the other more than 60 years old, two girls of 14 and 20 years old, and two women of 34 and 48 years old.

An obvious cause was in the two men, not to be determined with certainty. The girl of 14 years had menstruated 3 or 4 years ago, and since nearly this time the pains, periodically violent, existed on both sides of the base of the tongue.

She became chlorotic, the pains persisted after the recovery from the chlorotic state. The second girl had suffered from frequent fits of hemicrania, mostly on the left side; a fortnight before the beginning of the present complaint she was attacked with a catarrhal angina, with violent pain on deglutition, and hoarseness. During the convalescence she caught a severe cold, and already in a few hours afterwards, the pain prevailing on the left side, is said to have begun on the hindmost portion of the base of the tongue.

In the two women, the complaint occupied the place of the preceding neuralgia. The woman of 34 years old, suffered since the last eight years, from intercostal neuralgia, from neuralgia of the breasts alternately on both sides, in the place of which came for the last three months, pain at the base of the tongue, on the tonsils, and on the palatal arches. The woman of 48 years suffered since several years from hemicrania, from which she was delivered two years and a half ago, when the present complaint began. But this was likely to be occasioned by a catarrh of the nasal cavity, and the airpassages.

The complaint was aggravated, or renewed in all cases by continued talking, singing, twice also by the use of hot drinks and food.

The course was chronic, two cases lasted only from six weeks to two months, one case three months, one four years and a half, one six years. The reason of it is, perhaps, partly the continual active injuriousness of speaking.

There was sometimes an alteration of the intensity of pains on both sides.

As regards the nerves attacked in their course, it is not possible to decide, whether they belong to the nerv. lingualis or the nerv. glossopharyngeus. We refer in this respect, to a case of very violent, unilateral neuralgia of the tongue, where the most violent pain was likewise situated behind the insertion of the glossopalatine arch, and which Roser cured by cutting out a piece of the nerv. lingual.¹⁾

With regard to the treatment, I shall only remark, that the cauterisation with nitrate of silver recommended by Romberg in neuralgia of the tongue, acted beneficially in one case²⁾.

I mention here as an appendix, a hyperaesthesia on another part of the pharynx, viz. on the inferior portion of its side, in the interstice between the large cornu of the os hyoides, and the upper margin of the thyroid cartilage, which I encountered often in individuals, who suffered from analogous undefinable complaints, as they were exposed above.

At that time having no knowledge of the hyperaesthesia of the isthmus faucium, I had not explored in these cases the latter, and therefore, I am not able till now, to decide whether this hyperaesthesia between the os hyoides and the thyroid cartilage, is independent, or is a continuation only of that at the entrance of the pharynx.

¹⁾ See Vierordt's Archiv 1855, 4. part.

²⁾ I found also some relief from gargling with opiates.

ON THE

DISEASES AND INJURIES

OF THE

HYOID OR TONGUE BONE.

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ADVERTISEMENT.

WITH the view of drawing the attention of the profession to the study of a hitherto neglected part of the throat, the following pages, chiefly reprinted from the *London Medical Review*, are humbly submitted in the hope that the author's efforts may meet with approval.

PORTMAN STREET, PORTMAN SQUARE,
March, 1862.

ON THE DISEASES AND INJURIES OF THE HYOID BONE.

THE belief is commonly entertained that the hyoid bone is rarely or never diseased, because it is one of those small bodies in the economy that is so protected in its position, that it remains to us intact. The constitutional vices of the system, also, are supposed to spare it, when other bones cannot escape. The extreme mobility of the tongue, as constantly occurring in speaking, and in deglutition, in place of being a predisposing cause to disease or injury, is thought to act as a protection to the peculiarly shaped body, which forms the basis of its support, and thus keeps it out of harm's way.

On reference to any medical or surgical work, diseases of the tongue-bone are wholly ignored; in a very few, perhaps two or three, fractures are briefly dwelt upon or merely referred to. The hyoid bone, therefore, although of much importance in some of the lower orders of the vertebrata, in which it is connected to the skeleton by bony media, and forms a very important and complicated apparatus, is looked upon in man as of secondary importance and unworthy of any special consideration.

This should not be so, for in the human economy this bone may justly be said to play a very important part, both in relation to speech, and as an intermediate basis of support between the tongue and the larynx. The perfection of its simplicity is to be seen in man. It is subject to various diseases and injuries, which, although comparatively infrequent, yet are of that urgency and importance, when they do arise, as to require much diagnostic skill and attention to recognise, and some care to treat. An attempt, therefore, for the first time, to give an account of the diseases, displacements, and injuries of the tongue-bone—to pioneer the way as it were—cannot but be of advantage, and I should not have felt myself competent for the task, had not this and other parts of the throat and neck occupied my earnest attention and study for some years.

I hope to show that there are many anomalous symptoms referred to the throat by the sensations of the patient, which have been attributed to the larynx, and *post-mortem* inspection, has proved the normality of the latter. If the examina-

tion had been pursued further, a little careful dissection would have revealed that the cornua of the hyoid bone were so implicated as to give rise to the symptoms which were complained of during life.

In thus drawing attention to the hyoid bone, many obscure affections of the throat will be hereafter better understood; we shall have a rational basis to go upon for treatment, with the hope of either perfecting a cure or of affording much relief.

It shall be my endeavour to show, also, in connection with the subject, the influence of disease of the neighbouring parts upon this bone, and upon the larynx, of which it forms the superior protecting boundary.

It will be convenient to consider its various diseases and injuries in the following order:—

DISEASES.

1. Inflammation and its consequences, such as necrosis and expulsion.
2. Sub-hyoid abscess.
3. Thyro-hyoid inflammation and abscess.
4. Thyro-hyoid cysts.
5. Osseous tumours of the hyoid bone.
6. Tumours springing from the hyoid periosteum.
7. Eburnation of the hyoid bone.
8. Diseases of the thyro-hyoid articulation:
 - a. Relaxation of the ligaments producing dislocation.
 - b. Hydrarthrosis.
 - c. Anchylosis.
 - d. Spontaneous rupture of the ligaments.
9. General displacement of the entire tongue-bone.
10. Disease of the bone, or its periosteum by extension from the tongue and neighbouring parts.
11. Hyoid neuralgia.

INJURIES.

1. Fracture of the bone.
 - a. Fracture from manual violence.
 - b. Fracture from accidental causes.
 - c. Fracture from hanging.
2. Laceration of soft structures attached to the hyoid bone.
3. Wounds of the hyoid bone.

I. INFLAMMATION AND ITS CONSEQUENCES, SUCH AS NECROSIS AND EXPULSION.

Like other bones in the body, the tongue-bone is subject to inflammation of its substance and its periosteal covering. This, perhaps, is one of the most general affections of this little bone.

It may arise in the progress of constitutional syphilis, of scrofula, and of tuberculosis. That this is correct, examples which have been noticed, fully tend to confirm. Some of these shall be presently given.

In the true syphilitic disease, the primary inflammation is periosteal, which, according to its progress and extent, cuts off the supply of arterial blood to the body of the bone, which then dies; and, if the patient be not suffocated, he fortunately escapes by the expulsion of the necrosed bone, sometimes in its entirety, at other times, one-half of it only. The latter would seem to prove, therefore, that now and then the necrosis is limited to one-half of the bone. The following is a good example of it, preserved in the Museum of the Royal College of Surgeons.

Necrosis and exfoliation of the left half of the hyoid bone.

Sp., No. 1832, *Cat. Path.*, Vol. IV., "The left horn of an os hyoides expectorated after necrosis and exfoliation."

"The patient, a woman, 28 years old, laboured under dyspnoea for a fortnight, and it became at last so urgent as to threaten suffocation. Tracheotomy was performed, and gave immediate relief. On the thirteenth day after the operation, the patient, in a violent fit of coughing, discharged this portion of bone. She afterwards recovered."—*From the Museum of Robert Liston, Esq.*



It resembles necrosed bone in appearance, and, in some parts, is quite porous; it is hollow for the greater part of its extent, and I have no doubt, when expelled, the periosteum of the new bone was left entire. The accompanying sketch shows its natural size.

There is no history of syphilis from the description given above, and I am disposed to believe that it was an instance of idiopathic inflammation.

In 1844, M. Rozart, of Bordeaux, brought before the Academy of Medicine of Paris, an instance of

Spontaneous Expulsion of the Hyoid Bone.

The patient who was the subject of this remarkable case, was an unmarried lady, 36 years of age, of rachitic (scrofulous) constitution, although enjoying good health, and was seized with cough and difficulty of respiration, accompanied by sub-maxillary glandular swellings. These symptoms gradually became more intense; fits of suffocation, colliquative sweats, and general marasmus ensuing. She often expectorated purulent sputa without coughing. Her state seemed hopeless, when, five years from being first attacked, she threw up, in a

convulsive fit of coughing, a bone, which was found to be the hyoid, in a state of caries (necrosis). All the abnormal symptoms then rapidly disappeared, and she soon recovered her health. The shape of the neck was modified, being flattened and widened.*

This case again, was an example of idiopathic scrofulous inflammation and not syphilitic, and from the account given we do not know whether the whole or part of the hyoid bone was expelled. I am disposed to believe it was the whole or greater part of the bone, in consequence of the flattening of the neck afterwards. Here then are two instances wherein the cause was not syphilitic.

It is unfortunately a too prevailing error to set down a great many throat affections, as the consequence of syphilis, when such disease is not present; cases of the kind come under my notice almost every other day, and I find that the patient's general health is occasionally very bad from the treatment which has been pursued (chiefly mercurial), under the belief that the throat disease was syphilitic.

The following case which I had the opportunity of seeing, most strongly simulated syphilitic ulceration of the fauces, but beyond the throat affection there was no evidence to prove that the patient had ever suffered from that malady. She had the appearance of a strumous, ill-nourished female, and I will venture to assert had an attack of follicular disease of the fauces proceeding to destruction of tissue; there was no history of any attack of diphtheria, although I have seen examples with considerable loss of parts of the velum, uvula, and tonsils, which looked like the ravages of a terrible venereal throat. The patient of Mr. Bryant's died, and I had the good fortune of carefully examining the parts of the throat which he exhibited before the Pathological Society.

The account of the case I take from the "Transactions of the Society," Vol. XI.

Necrosis of the os-hyoides, with ulceration of the pharynx.

The patient was a girl, aged 22, admitted under Mr. Bryant into Guy's Hospital. She was a pale, attenuated-looking person, who had never experienced good health, but had no definite complaint or illness.

Three weeks before coming under observation, she was attacked with an ulcerated throat, which gradually became worse; but when seen there were no symptoms of laryngeal mischief. The ulceration of the throat was very extensive, involving the whole soft palate and the posterior wall of the pharynx. The uvula had entirely disappeared.

* *The Lancet*, Vol. I., 1845, p. 7.

Regarding the case as one of syphilitic origin, careful inquiries were instituted; but no other questionable symptoms were present, and no history of it could be obtained, the girl denying most positively having been in the way of contracting such a disorder.

Tonics and local stimulants were given with apparent advantage, as the soft palate cicatrized. Upon the third day after admission, some huskiness of voice appeared, accompanied with difficulty of deglutition. Stimulants and liquid nourishment were freely administered; but the patient gradually sank, six weeks after the first appearance of the disease, and three weeks after her admission into the hospital, having for a few days previously been confined to her bed from pneumonia, but unaccompanied with any laryngeal obstruction.

Post-mortem Examination.—Extensive pneumonic consolidation existed of a low type, having evidently been the primary cause of death. The walls of the pharynx, base of the tongue, and the whole of the upper part of the larynx down to, but not involving the vocal cords, were covered with ulceration. The two greater cornua of the os-hyoides were projecting and necrosed, one being loosened from the body of the bone. The epiglottis had disappeared, with all the folds of the mucous membrane of the larynx above the rima.

Upon examining the genitals for any signs of syphilis nothing could be detected. The vagina was small, and a partial hymen was present. The uterus was also in a healthy condition. The skin was clear, and free from stain, and the inguinal glands were also natural. Upon the whole no one fact could be obtained, with the exception of the character of the pharyngeal ulceration, to support the opinion that the case was one of syphilitic origin, and it remains a question whether the primary seat of the disease might not have been located in the os-hyoides, and the extensive ulceration be produced as a secondary result.

I quote with much pleasure Mr. Bryant's observations on the possible nature of the disease, and would solve his question in this way:—The hyoid and general throat disease were simultaneous, because it is impossible to imagine that the extensive ulceration which was present could have had time to succeed to the hyoid disease had it been primary, that is to say, if the early history of the patient be correct.

An examination of the preparation (No. 1685¹⁴) since it has been preserved in spirit in the museum of Guy's Hospital, has, moreover, convinced me, that had the patient lived a little longer, both of the greater horns of the bone would have been

expelled; and I am most firmly persuaded that the patient never was the subject of syphilis.

In the *Cyclopædia of Anatomy and Physiology*, at the conclusion of the article Tongue, is a brief notice of an instance of

Necrosis of the Hyoid Bone,

which is thus described by Dr. Hyde Salter.

"The only instance of disease of the hyoid bone with which I am acquainted, is one related by Mr. Spry. The disease was necrosis, the result of extended ulceration, which commenced in the throat, and continued till the bone was laid bare and dead. It was then *expectorated entire*. The patient died several weeks afterwards. The bone was entirely deprived of periosteum, irregular on its surface, and in a perfect state of necrosis."

I have been unable to lay my hand on the original account of Mr. Spry, but imagine it was not the result of syphilis, else it would have been mentioned by such an acute observer as Dr. Salter. The importance of this case consists in the destruction of the *whole* of the hyoid bone, which was expelled entire. Although the case terminated unfavourably, I assume that a new hyoid bone was in the course of formation from the remaining periosteum. My reason for this belief is the analogy which subsists between the periosteum of the lower jaw and that of the hyoid bone; in the former the entire bone has been regenerated by this membrane, and it is but fair to conclude that the same phenomenon takes place when the tongue bone is expelled by natural efforts.

There is a very important preparation in the museum of St. George's Hospital, in which the left inferior horn of the hyoid bone is denuded of periosteum, and apparently in a state of necrosis from syphilitic disease. It is described in the catalogue as follows, but the heading is my own:

Extensive ulceration of the fauces and neighbouring parts, exposing the left cornu of the os hyoides from syphilis.

"Specimen showing extensive ulceration of the fauces and adjoining structures, especially on the left side, the glottis being much affected and the hyoid bone quite exposed and projecting from the ulcerated surface. The epiglottis is completely destroyed. History: The specimen was removed from the body of a patient, who was admitted into the Lock Hospital with secondary syphilis, and died there. Presented by Sir. B. Brodie." (Series 30. sub series 12. b. 2.)

On looking at the specimen, more important changes have occurred than are even described in the foregoing account, for

the ulcerative disease has been so extensive as to completely denude and expose the entire left greater cornu of the hyoid bone, which projects backwards, and no doubt in a little time would have been wholly detached and expelled. About two lines above its origin is seen a piece of bone, which probably may be the body of the os hyoides itself. For the amount of destruction of tissue and general ravages of the syphilitic disease, I have seen no specimen so remarkable as this.

Here we have a clear history of syphilis, the patient had extensive ulceration of the throat during life which involved the hyoid apparatus, I will not undertake to say by extension of the disease, for very probably the cornual periostitis was coeval with the mucous ulceration.

There is a preparation in the museum of the College of Surgeons, which I would consider an

Illustration of how syphilitic or other disease may extend to the os hyoides.

(No. 1856, vol. iv. *Path. Cat. R.C.S.* "A larynx and tongue from a negro. The epiglottis is deficient, having been probably destroyed by syphilitic ulceration. The surface of all the membrane between the root of the tongue and the upper part of the larynx is uneven, but polished, and depressed like that of a cicatrix. On the left side, opposite the cornu of the os hyoides, there is a deep oval depression, with a smooth base, resembling the cicatrix of an ulcer. From the museum of Joseph Taunton, Esq."

I have seen other specimens like this in some of the museums, and believe that it shows how the disease may extend sometimes to the hyoid bone in syphilis. In this preparation also, it would seem as if the ulceration had at one time actually extended to the horn of the hyoid, and had subsequently healed.

Necrosis of the right horn and half of the body of the os hyoides, from syphilitic ulceration of the tongue.

Whilst preparations and examples among the living are very numerous, of destruction of the tongue, particularly its base, from cancer, solutions of continuity from other diseases are by no means so frequent. One of the most striking examples that I have as yet come across, however, of the latter, is preserved in the museum of St. Thomas's Hospital. It consists of the larynx, trachea, and tongue. (W. 30.)

"The destruction of the mucous membrane, and of the muscular structure at the root of the tongue, is very great. The epiglottis and the arytenoid cartilages, with their connecting folds of membrane are nearly destroyed; and the mem-

brane of the upper part of the larynx is much ulcerated. From a person affected with syphilis." *Cat. of Mus.*, vol. 3., p. 12.

The ulceration has evidently spent itself on the right side of the tongue, which has been hollowed out into a cavity, exposing the inner surface of the right horn and half of the body of the os hyoides, which are denuded of periosteum and evidently in a state of necrosis. I think it probable that the disease primarily existed in the tongue and thence extended to the hyoid bone; yet it may have simultaneously attacked the structures at the root of the tongue, upper part of the larynx, and periosteum of the hyoid bone.

In 1855 there was a male patient in the surgical wards of University College Hospital, who was the subject of

Necrosis of the hyoid bone from syphilis,

which was diagnosed during life. He was a painter, and suffered from syphilitic laryngitis, with destruction of a part of the soft palate; on introducing the finger into the back part of the mouth, a distinct, rough, hard projection could be felt, corresponding to one of the inferior cornua of the hyoid bone situated towards the base of the tongue. This was diagnosed to be necrosis of the hyoid bone. The dyspnoea became so great that laryngotomy was performed, and the man ultimately recovered. A portion of the denuded bone must have been expelled, although unknown, perhaps, to the patient himself.

Besides the diseases which have been already described, the hyoid bone is attacked with inflammation as the result of the extension of carcinoma (usually ulcerated) involving the base of the tongue. As examples of this are very numerous in our museums, I shall reserve its consideration for a separate section.

II.—SUB-HYOID ABSCESS.

The neck is subject to various and deeply situated abscesses in the areolar structures, the result of inflammatory and other causes, which require, in many instances, great skill on the part of the surgeon to make out. With these it is not my province to dwell, unless in so far as they may involve the tissues in the vicinity of the hyoid bone, and thence by extension implicate both it and the larynx. Cases of this kind occasionally present themselves to our notice; the symptoms are of the most urgent and distressing character, and frequently prove fatal. The following example is one in illustration of

Abscess of the neck, communicating with the pharynx, and exposing the hyoid bone and larynx.

The preparation is to be seen in the museum of University College Hospital. It is one of an interesting nature, and labelled, "Specimen of abscess of the neck, communicating with the pharynx; ossification and necrosis of the thyroid cartilage." The importance of not only making a more careful examination, but also of giving a more detailed description, will be seen from what now follows. It is one of the most instructive specimens it has fallen to my lot to examine, and it beautifully illustrates the ravages of an abscess in the neck. It has laid bare the upper part of the thyroid cartilage, which seems to be calcified, and probably necrosed. Hanging over, and almost overlapping the upper border of this cartilage, is what has been mistaken at first sight for a piece of necrosed cartilage projecting from the bottom of the ulcerated parts. Careful examination, however, reveals the small but still prominent lesser cornu on the upper surface of the right half of the body of the hyoid bone completely laid bare, and probably denuded of periosteum, so far as can be judged from its appearance in the spirit. The remaining part of the anterior of the body of the hyoid bone, namely, its left half, hangs down somewhat in front of the thyroid cartilage, and looks as if it were detached from the right half by a fracture; this can only be determined, however, by an examination of the preparation out of the jar. During life, all these parts, most probably, were bathed or soaked in pus.

The gratification which I experienced in deciphering the hidden mysteries of this valuable preparation (No. 2,264), if it may be permitted me thus to express myself, can only be compared to the satisfaction I have derived when making the discovery of some rare and beautiful fossil amongst a heap of stony fragments. And although my research throughout the London museums was rewarded by many other discoveries, yet none possessed the importance attached to the preparation just alluded to.

In chronic abscess of the neck, the matter may exist on either side of the larynx, extending from the hyoid region downwards towards the entrance of the chest. There is one form of abscess, however, which is now and then to be met with immediately beneath the body of the hyoid bone, and it has been called *sub hyoid abscess* by Jarnain, in his "Manual de Path. et de Clin. Chir.," t. 2, p. 84.* It assumes an importance according to the depth at which it is situated. When superficial, it is readily recognised, and calls for no other treatment

* It is also noticed in Nysten's Path. Chir.

beyond early puncture. If deep seated, on the other hand, it has a tendency to extend to the mouth and pharynx, in consequence of the resistance presented to it in front. The following are the symptoms:—

"Heat, painful distension of the sub-maxillary region, and even of a part of the cheek; an uneasiness in the movements of the jaw and tongue; swallowing and speech painful. Fluctuation can only be distinguished with great difficulty, and at an advanced stage of the disease. It often opens spontaneously into the mouth."

The treatment recommended for this is of an antiphlogistic character at the commencement, poultices, &c. I would advise two or three leeches as early as possible. When suppuration, however, has become established, an incision should be made to evacuate the matter as early as can be, so that the cicatrix may be less visible than if the abscess is allowed to evacuate itself spontaneously.

III.—THYRO-HYOID INFLAMMATION AND ABSCESS.

Inflammation and abscess of the thyro-hyoid region, have been particularly described by Sestier and Vidal. The precise seat of origin, according to both, is a mass of cellular tissue occupying a space behind the thyro-hyoid membrane, close to the base of the epiglottis. The suppurative inflammation of this part of the throat may be either idiopathic, or symptomatic, of an affection of the tongue, of the epiglottis, or of the thyroid cartilage, and leads to an oedematous infiltration into the neighbouring parts, the sub-epiglottic areolar tissue, and in that of the aryteno-epiglottic ligaments, and forces the epiglottis upon the superior orifice of the larynx. The importance of this form of abscess will be seen when the subject of cysts and inflammation of the hyoid bursa comes up for consideration.

A thyro-hyoid abscess may be known by the presence of aphonia, difficulty of inspiration, turgescence of the face, intense dyspnoea, acute pain in the thyro-hyoid region, and by the distress experienced in swallowing and speaking.

According to M. Nélaton, this abscess extends towards the mouth, and it is probable that with the finger introduced into that cavity, the projection of the abscess may be felt in the situation between the base of the tongue and epiglottis.

The treatment recommended for this affection consists in local and general blood-letting, emetics and mercurial frictions, at the commencement of the attack. If pus is present, an incision must be practised through the thyro-hyoid membrane, between the os hyoides and thyroid cartilage. To this operation M. Vidal has given the name of *bronchotomic sus-laryn-*

gienne, but I think the most suitable term amongst English surgeons would be *supra-laryngotomy*.

I believe that both the sub-hyoid and thyro-hyoid abscess is more common than is supposed, and I am satisfied that such cases have come under my notice after the abscess has burst into the mouth at the base of the tongue. On reference to my notes, I find several instances in which there was deep and ragged ulceration in the hollow on one or other side of the base of the tongue, which secreted a good deal of pus, and the symptoms much resembled those already described.

When the abscess has pointed in the hollow at the base of the tongue, it is possible to see it with the laryngoscope, besides feeling it with the point of the finger, in which case it would be more convenient to puncture it in that situation. It is astonishing with what facility the parts at the base of the tongue, anterior to the epiglottis, can be examined with this instrument, which now renders easy the diagnosis of many affections which were hitherto obscure.

In the site of the mass of areolar tissue, previously referred to, namely, in the upper part of the thyro-hyoid space, in this tissue (erroneously called epiglottidean gland by some) a small lymphatic gland has been found in the young subject, and in delicate children. Professor Harrison has frequently met with a small tumour in the same place, a locality which this accomplished anatomist considers not uncommonly the seat of suppuration, which he asserts is occasionally very dangerous.*

In the "Boston Medical and Surgical Journal," for May 9th, 1861, page 308, is a case called

Abscess in front of the larynx,

which I am satisfied, from perusal of the details, was thyro-hyoid. The case occurred in the practice of Dr. Seaverns, of Jamaica Plain, and was brought before the Boston Society for Medical Improvement. The patient was a stout labouring man, of intemperate habits, aged 26, in whom an abscess extended from the hyoid bone downwards, and irregularly over the greater part of the region of the thyroid cartilage, a piece of which lay loose in its cavity. The larynx was much swelled, especially above the left vocal cord, but no opening into it from the abscess could be found.

IV.—THYRO-HYOID CYSTS.

M. Nélaton has received the credit of being the first to call attention to this variety of tumour of the neck, under the name of *sub-hyoid. ranula*. Many years back, however, Mr.

* "Dublin Director," vol. 1, p. 41. 1847.

Liston described these cysts in a course of lectures "On the Operations of Surgery," which appeared in the first and second vols. of the "Lancet" for 1844, and he is unquestionably entitled to all the merit of having first described them. I shall quote the paragraph entire in which they are mentioned:

"Occasionally we see watery tumours of the neck, what have been called hydroceles of the neck; they sometimes lie in the middle of the region, and may depend on an enlargement of the bursa between the thyroid cartilage and the os hyoides. Acute inflammation of this bursa occasionally takes place. An old fellow-pupil, Mr. Mackenzie, the demonstrator of anatomy in the Edinburgh University, used to suffer from this affection, and very troublesome it was to him now and then. It was he who pointed out to me this synovial pouch. These tumours sometimes increase slowly, and bulge out on the lower part of the neck. There is a very good specimen of this disease in the museum of the College of Surgeons; there is a large sac attached to the hyoid bone."

This interesting and most curious specimen I had the opportunity of inspecting in the college museum, and made the accompanying sketch of it.

Cyst springing from the depression on the inner or posterior surface of the body of the hyoid bone.

Vol. I, Pathology, p. 64, No. 148.—"An os hyoides, with a round, thick-walled, membranous cyst, more than two inches in diameter, attached to the posterior surface of its body. The cyst was loosely connected to all the surrounding parts, and full of brownish yellow, thick, grumous, honey-like fluid, containing abundant crystals of cholesteroline."



"From a sailor between fifty and sixty years old, in whom it has existed nearly as long as he could remember. It was covered by the sterno-hyoid muscle."—*From the Museum of Robert Liston, Esq.*

The body of the bone is wider than natural from above downwards, and seems somewhat expanded out. The general concavity of its posterior surface is considerable, and it is from the upper part of this that the tumour took its origin.

The walls of the cyst seem firm, and in some parts have distinct yellowish white layers as if from calcareous deposits. It is well worthy of inspection.

It was not until after I had examined this very rare prepa-

ration that I referred to Liston's writings, and I could not come across an account of it either in his "Elements," or his "Practice of Surgery." A reference to his lectures published in the "Lancet" was more successful. The one in the second vol. for 1844, which includes diseases of the neck, is full of original and practical information, and should be read and studied by every physician as well as every surgeon. In former years I derived many useful hints from the perusal of these lectures.

In the College Museum there is another preparation which comes within the same category, and I introduce a notice of it here.

Enlargement of the thyro-hyoid bursa.

No. 1861. Vol. IV, p. 38, *Path. Cut.*—"Part of a larynx, of which the mucous membrane above the vocal ligaments is beset with minute superficial ulcerations. At the posterior extremity of the left laryngeal ventricle there is a deep, probably tuberculous, ulcer, exposing a part of the arytenoid cartilage. The bursa on the front of the thyro-hyoid membrane is enlarged."—*From the Museum of Robt. Liston, Esq.*

The bursa will admit a small marble. But here I would observe that when inflammation or abscess has been found in the thyro-hyoid region, corresponding to some of the parts which have been already described, there is a tendency towards the formation of cystic tumours. An inflammation of the hyoid bursa in many instances will not end in suppuration, but in dropsical enlargement, the tumour or cyst forces its way through the thyro-hyoid space, and hangs downward in front of the thyroid cartilage beneath the skin. I have reason to believe that a preparation which I examined in the museum of the Charing Cross Hospital, is an example of the kind; the tumour is as large as a small orange, and was taken from a child, but there is no distinct history of the case during life. The tongue, larynx, and cyst are preserved together.

It is but fair to M. Nélaton that I should give his description of the thyro-hyoid cyst, as his observations, no doubt, were made independently of those of Liston.

"This tumour," he observes, "is situated in the median line, beneath the base of the hyoid bone; it forms at this part a projection as large as the half of a hazel-nut; it is sufficiently hard and fluctuating; remains a long time stationary, and then the skin which covers it commences to reddish; it becomes very thin, is perforated, and the opening allows a muco-purulent fluid to escape. When the tumour is punctured before the appearance of the inflammation of which I have spoken, the liquid that flows is transparent, viscid, and resembles that which we find in the greater number of ranulas. When the sac is emptied, either by puncture or spontaneously, the coating of muco-purulent fluid becomes perpetual, and there remains in the thyro-hyoid region a fistula very difficult to cure. If this fistula is probed, we find that it extends much further than might be presumed at first; it reaches among the muscles in the sub-hyoid region, and its extremity corresponds to the base of the epiglottis."—*Elem. Chir. Path.*, tom. iii., p. 383.

A careful study of the structures in this particular part of the neck leads to the question, What is the true origin of these cysts? Without doubt the greater number spring from the hollow at the posterior part of the centre of the body of the hyoid bone, from the loose patch of areolar tissue which fills up the space. Such was clearly the origin of the cyst in the sailor under Mr. Liston, of which a drawing has been given. Occasionally the bursa between the hyoid bone and thyroid cartilage is the seat of the cyst, as was believed by Boyer* and Malgaigne. Beclard described a bursa in front of the thyroid cartilage as the seat of it. Jamain believes, from the nature of the fluid contents, which he says is mucous rather than serous, and the prolongation of the fistula as far as the base of the tongue, that the cyst is formed by the enlargement of a sub-mucous follicle, rather than by any of the other structures mentioned. Possibly in some cases cysts may arise in that way, but to maintain that all do so, would be most unphilosophical, for we have already pathological evidence sufficiently strong to prove that these thyro-hyoid cysts arise from the other different parts described, and they have been noticed at birth.

When the nature of these cysts is readily made out, the treatment comes up for consideration. This may be briefly summed up. Excision is not to be attempted, as it is almost impossible sometimes to say where they may lead to, and a partial operation for removal is highly objectionable.

It is recommended to treat this small tumour in a similar manner to runula properly so called. Evacuation of the contents by puncture, and the injection of iodine, seems to be the best mode of treatment when the tumour extends to some depth, and is disposed to transform itself into a mucous canal, of which the obliteration is very difficult, and which cannot be attained but with great suffering from the use of caustic.

I have seen congenital serous cysts in the lateral regions of the neck treated in this way with success at St. George's Hospital, and feel satisfied that iodine injections will be equally successful in curing cysts in the thyro-hyoid region.

Since writing this paper I have come across an instance of congenital cyst in front of the neck of a child two years old, which was successfully extirpated by M. Dittl. It reached from the chin to the sternum, and outwards on both sides of the median line beneath the sterno-mastoid muscle. Its extir-

* The passage in Boyer's work in reference to these tumours is this:—"It forms sometimes between the os hyoides and thyroid cartilage, upon the membrane which unites them behind the thyro-hyoid muscle and the platysma myoides, constituting an encysted tumour filled with a yellowish viscid matter. This tumour acquires a certain size before it is apparent, and elevates the parts which cover it; it may exist for a long time without considerable volume or causing any inconvenience, but it is an object of deformity, especially in women, and patients are very anxious to get rid of it."

pation, it appears, was difficult, on account of its connexion with the hyoid bone, the larynx, and trachea. From this I infer that the tumour was thyro-hyoid at birth, and in the course of its growth it became adherent to the larynx and trachea. The operation was a bold one, and the child made a rapid recovery.*

V.—OSSEOUS TUMOURS OF THE HYOID BONE.

Dr. John C. Warren relates, in his "Surgical Observations on Tumours," the following:—

"A man came to my late father with an exostosis of the right corn of the os hyoides, of a sugar-loaf form, about three inches in height. My father dissected the tumour to the os hyoides, exposed this bone, sawed it off near its base, and thus succeeded in curing the patient speedily and effectually."—p. 117.

Of all the diseases of the hyoid bone, exostosis seemed to me to be almost an impossible occurrence, and yet I came across the above example described by Dr. Warren. It is probably the only case of the kind on record, and therefore interesting, not only from its rarity, but also from the size which the bony tumour had attained.

VI.—TUMOURS ORIGINATING IN THE HYOID PERIOSTEUM.

A study of all the preparations of tumours involving some part of the neck, preserved in the London museums, has led me to adopt a distinct class for growths originating in, or springing from, the periosteum of the hyoid bone. This membrane is a fertile source for the origin of tumours in other parts of the body, and that covering the hyoid bone is so likewise to some extent. It is to be feared, however, that the great majority of those springing from the latter will be found malignant. The following examples have been selected as affording strong presumptive evidence of their having originated in the situation described: two are medullary cancer, whilst the third appears to be simply fibrous. When more care is adopted in the *post-mortem* dissection of diseases of this part of the throat, it is not improbable that by-and-by many such examples as the following will be met with.

Cancer of the Tongue projecting backwards from the body of the hyoid bone, and pressing the epiglottis flat upon the glottis.

There is a remarkable preparation in the museum of St. George's Hospital, of "Extensive Carcinoma of the Tongue and neighbouring parts." (Ser. 29; sub ser. 1, h. 3.) The specimen consists of a portion of the upper jaw with the

* Year Book of Med., &c., for 1853. New Syd. Soc.

tongue and larynx. A section of the tongue and larynx is shown, and it represents the growth of a mass of medullary cancer extending from the body of the hyoid bone backwards on a level with the greater horns, to the extremity of their terminations, and pressing the epiglottis flat upon the glottis, but still leaving space for the admission of some air. The posterior part of the tongue, at its origin from the hyoid bone, seems to be especially affected. The mucous membrane of the lateral part of the mouth and fauces is also extensively engaged in the disease.

Medullary tumour developed within the base of the tongue, pushing the hyoid bone towards the thyroid cartilage.

This is a preparation which shows the influence of a tumour developed within the base of the tongue, upon its osseous support; in the present instance it is pushed towards the thyroid cartilage. It is described in the catalogue of the museum of St. Bartholomew's Hospital as—

"A tongue, with the larynx and other adjacent parts. A large medullary growth, formed in the base of the tongue, has been exposed by a section carried through the right side of the tongue from before backwards. Part of it has softened, and the centre of its surface has ulcerated, forming a large ulcer with elevated, sinuous, and everted margins. The larynx has been oedematous; its mucous membrane is wrinkled."—(*Ser.* 28, No. 19.)

The hollow of the hyoid bone filled in with a fibrous tumour.

This is a preparation in the museum of St. George's Hospital, which consists of a fibrous tumour connected with the surface of the back part of the tongue, filling in, as it were (so far as I can distinguish through the spirit), the body of the hyoid bone. The epiglottis appears to have been destroyed by ulceration.—(*Ser.* 29; *sub ser.* 1, i. k.)

VII.—EBURNATION OF THE HYOID BONE.

This is a rare form of disease (?) of this bone, and the only example of it with which I am acquainted is illustrated by a curious specimen that came under my notice in the museum of the College of Surgeons. It is numbered 1,830, and is described in the fourth vol. of the Pathological Catalogue, as

"The half of an hyoid bone, completely ossified."—*Hunterian.*

On close examination, the bone seems to have become converted into a very hard and compact substance, and greatly differs from ordinary specimens. No doubt this attracted the attention of John Hunter, who preserved the specimen. I am at a loss to explain this condition, for I do not observe that there are additional nutritious foramina. As the anatomist is aware, the hyoid bone is supplied with special branches to its

upper and under border. The *superior hyoidean* artery is a small and irregular branch derived from the lingual in its course to the base and tip of the tongue. The *inferior hyoidean* artery is also a small and irregular branch derived from the superior thyroid, and is distributed to the lower border of the hyoid bone and adjacent muscles. In connection with the arterial supply of this bone, it may be mentioned that the hyoid branch of the superior thyroid is often very small, or even absent altogether; and the hyoid branch derived from the lingual is not unfrequently deficient. Mr. Quain has observed, in his truly great work on the arteries, that generally when a hyoid artery of good size is given from the lingual, the thyroid supplies none, or a very small one, and the converse. See plates 3, 8, 10, and 11, of his work, in which different conditions of the hyoid arteries are illustrated.

Perhaps I might say that the minute foramina in the preparation under consideration, are more numerous than usual. In health, the middle part of the body of the hyoid bone, together with the larger extremity of the greater cornua, are somewhat cancellous, and contain much areolar tissue, whilst the remainder of the bone is more compact. Here all appears as if a piece of ivory. Could this condition be called syphilitic or gouty eburation? Conjecture leans to the former.

VIII.—DISEASES OF THE THYRO-HYOID ARTICULATION.

(a) *Relaxation of the Ligaments producing Dislocation.*

When we reflect upon the complicated movements of the tongue, and of the part that the hyoid or tongue bone plays in their performance, it might seem, at first sight, especially to those versed in the minute anatomy of this bone, somewhat novel and surprising that it could by any possibility become dislocated. Nevertheless, such is the fact; and a displacement of one or both of the cornua or horns of the bone is, perhaps, of more frequent occurrence than is imagined. This little bone is attached to eleven pairs of muscles, which are its elevators and depressors; it forms the base of attachment to numerous muscles in the neck, and is the principal support to the tongue itself. The extremities of the greater horns of the bone, and the superior horns of the thyroid cartilage, are connected together by two round cords, which are known as the *thyro-hyoidean ligaments*. Usually they contain cartilaginous or osseous grains, which represent sesamoid bones in other situations, the knee cap for example. An acquaintance with these facts is essential for the comprehension of the diseases of this articulation. The superior cornua of the thyroid

do not possess synovial membranes, nor capsular ligaments, as in the slightly moveable arthrodial joints, formed by the articulation of the inferior cornua with the cricoid cartilage, but, owing to a natural weakness of the parts, or a general relaxation of the throat muscles, the greater horns of the hyoid bone are liable to become dislocated, and most materially interfere with the movements of the throat and general comfort of the person so affected. Moderate violence will give rise to the same thing. Instances of each have come under my notice. The consequence of this is the formation of an abnormal pouch, or synovial capsule, around the thyro-hyoid articulation, which is liable to assume the diseased conditions of the natural joints.

In illustration of this, I exhibited a preparation before the Pathological Society of London, in April, 1859, which I had removed myself from the body and carefully dissected. The case is published in the tenth volume of its transactions, and the interest and importance attached to it have been such, that it has been particularly quoted in some late works, amongst others, the second volume of "A System of Surgery," edited by Mr. Holmes, in the article on "Injuries of the Throat," written by the late Mr. Henry Gray. The following is a brief outline of it:—

Hydrarthrosis of the left thyro-hyoid articulation, and dislocation of the hyoid bone.

A man, 45 years of age, consulted me several times about his throat. He would feel a sudden click in the left side of his neck, which produced a sensation as if something was sticking in the throat. On examination, this appeared to me to depend upon a displacement of the left horn of the hyoid bone, and was generally reduced by throwing the head backwards towards the right side, so as to stretch the muscles of the neck, and then suddenly depressing the lower jaw, and so putting the depressors of the hyoid bone into operation. He died some years after of pulmonary consumption. On examining his throat after death, I found a sort of pouch which answered the purpose of a synovial capsule, embracing the horns of the left thyro-hyoid articulation. It was filled with a clear fluid, had a comparatively large, rhomboid, sesamoid bone developed in its outer wall, and permitted an extraordinary amount of motion.

I regret now that I did not make an examination of the fluid contents of this capsule, more particularly in regard to the presence of albumen. Should another opportunity be afforded me in a similar instance, I shall not allow it to escape.

The condition of the parts in the foregoing case readily explained the symptoms present during life. It made the fourth example which had come under my notice, but I have since met with dislocation of the same part in a female during the past summer, of which I shall presently speak. I might here add that the styloid processes were remarkably long in the case just narrated, and so also were the lesser cornua of the hyoid bone; the stylo-hyoid ligament connecting the two was natural, and did not contain any ossific deposit, as is sometimes observed.*

On the 6th of December of the eventful year 1848, whilst residing in Paris, I was present at a meeting of the "Parisian Medical Society," (of which I was then honoured by being a Member of its Council,) when a short paper was read by my lamented friend, the late Dr. Ripley, of Charleston, South Carolina, upon dislocations of this bone, especially illustrated in his own person, and the manner of reducing them. He described this process very lucidly, which I have seen him perform upon himself several times, when the dislocation was present; it consisted in throwing the head backwards as far as possible, so as to place the muscles of the neck upon the stretch, then relaxing the lower jaw, when the displacement becomes reduced, after a few attempts, with a click, at the same time gently pressing or rubbing over the displaced part.

The following is a well-marked instance in a female, in whom the dislocation was double:—

Lateral dislocation of both thyro-hyoid articulations in a female from relaxation.

Mrs. Sarah N——s, aged 30, first consulted me on the 7th May, 1861. She felt several "lumps" under the jaw six months before, which caused some inconvenience; they were diminished in size from the use of an embrocation. These "lumps" were accompanied by a feeling of pressure, with a pricking sensation, more particularly felt on twisting the neck to either side, laying down in bed, or when troubled with wind. Deglutition was also affected. Her father died of asthma, her mother is subject to it, and she states that throat complaints are hereditary in her family. At times she is a great sufferer from them, and frequently has a cough.

On examination I discovered that she had lateral dislocation of both thyro-hyoid articulations; the grating of relaxation could be felt very distinctly on either side, and hence I inferred that the thyro-hyoid ligaments were shortened, and were

* I have seen this ligament ossified.

probably surrounded with capsules. This was an instance of the disease from general relaxation of the parts. The thyroid cartilage was larger than in most females. The peculiar grating sensation which was felt with my fingers, and was also perceptible to the patient, being similar to the rubbing of two pieces of broken cartilage together.

The treatment to be pursued in this peculiar malady is, to reduce the dislocation in the manner that has been described, when present on one side of the neck only. When double, the forefinger and thumb must be gently pressed on either side of the hollow between the hyoid bone and thyroid cartilage, and the patient directed to swallow, which draws the greater cornua of the bone upwards, and the natural position is assumed. More inconvenience is experienced when the dislocation is single.

The general health must be improved by the administration of suitable tonics, especially those that will give tone and firmness to the muscular fibre, because it is owing not unfrequently to simple relaxation of the parts from constitutional causes that displacement occurs. When it has arisen from violence, such as the forcible squeezing of the throat, or by garotting, if the bone is not fractured, and the muscular tissues not lacerated, better prospects of a permanent cure are held out than when it arises from relaxed tissues.

In some of my dissections I have found the thyro-hyoid ligaments vary in length on the two sides to the extent sometimes of a quarter, and even half an inch in dislocation that was not suspected during life. I have also found the direction of the hyoid horns and the length of the thyroid to vary.

In the museum of the Royal College of Surgeons may be seen a preparation of the thyro-hyoid articulations forming true joints. It is a tuberculous ulcerated larynx (No. 1864), in which both thyro-hyoid articulations seem to be distinct cavities like joints, and there can be no doubt that during life there has been relaxation of the throat at times with dislocation. From a preparation of Sir Astley Cooper's. It illustrates to some extent what I have already written upon the subject.

The subject of this essay was brought before the British Medical Association at its annual meeting held at Canterbury, in July, 1861. At the conclusion of my remarks, Dr. Lewis, of Carmarthen, kindly mentioned to me an instance which came under his observation of what he believed was an illustration of the disease just described. He afterwards favoured me with the following account of the case:—

Displacement of the right inferior cornu of the hyoid bone from fright.

Elizabeth Jones, at 65, mother of six children, always enjoyed good health up to eight years ago, when she received a great fright, in consequence of seeing a very large quantity of blood pouring out of her son's mouth suddenly, while she was conversing with him in the street. The effect of the fright was to produce sudden sobbing, and after a few sobs she felt a sudden pain in the right side of the throat and right ear; considerable difficulty of swallowing came on immediately. A few days after this fright the voice became hoarse, gradually difficulty of breathing came on, and this varied from time to time in intensity. Her case was considered at the first to be some catarrhal affection of the throat, and treated with liniments. She continued in a very distressing state for several years, and was not able to obtain any relief. About May, 1859, she was first seen by me. She was examined by the finger in the throat, and the passage behind the epiglottis and larynx was found very much encroached upon by a projection backward of what at that time was considered thickening of the glottis, but which, from subsequent information, I have no doubt was a displacement or dislocation of the right arytenoid cartilage (right inferior horn of the hyoid bone). She complained of feeling an occasional snapping or cracking when she moved her head, and then her condition was as follows:—rather livid paler of the face; some fulness of the cervical veins; a gasping form of breathing; voice very hoarse; swallowing solids very difficult; can only swallow pieces of bread about the size of a pill. Has occasionally an attack of more than usual difficulty of breathing. She referred the distress and difficulty in her throat to the right side. The introduction of the finger during the examination of the state of the throat was followed with relief, therefore a bougie was occasionally introduced into the throat, and the result was most gratifying. She recovered her voice almost completely, and also her power of swallowing. Her general health afterwards recovered.

About May, 1860, she was residing near to Aberystwith, and was suddenly attacked with all her former distressing symptoms, brought on, she thinks, from cold. For this attack she went into the Aberystwith Infirmary, where she remained a fortnight; afterwards she continued for nearly twelve months as an out-patient. I have seen her to-day, August 14th, 1861, and she is in a very comfortable state, but still feels occasional pain in the right ear. She cannot swallow dry bread, or dry lumps of food, but with the aid of liquids she can swallow pieces of moderate size.

The foregoing case is of considerable value, as illustrating the effect of emotional causes on the thyro-hyoid articulations. At first sight it would seem as if there had been a rupture of the right thyro-hyoid ligament, produced during the convulsive sobbing; the general description, however, agrees with that of dislocation in an aggravated form.

When illustrating the pathology of dysphagia, Dr. Abercrombie describes two instances of "Dislocation of the Os Hyoides," in his work on *Diseases of the Stomach*,* which are comprised in the following extract. As both he and Dr. Mugna were unacquainted with the correct pathology of the displacement, I will correctly designate them as

Two examples of double displacement of the thyro-hyoid articulation.

"An eminent medical man, now deceased, was liable to this accident, and I have seen him seized with it in an instant, while engaged in conversation. It

* Second Edition. 1838. Pica, p. 102.

produced slight difficulty of articulation and total inability to swallow. He easily relieved himself by a particular movement of the parts with his hand, which had become familiar to him from the frequent occurrence of the accident. A man, mentioned by Dr. Mugna,* while swallowing a large morsel of tough beef, suddenly experienced a sensation as if it stuck at the entrance of the oesophagus, and immediately lost all power of deglutition. A sound having passed without difficulty, Dr. Mugna suspected dislocation of the os hyoides. He accordingly introduced the fore and middle fingers of the right hand beyond the root of the tongue, and, on moving the parts a little by the left hand applied to the front of the neck, the affection was speedily removed."

In the first case, the displacement was double, as the hand alone was employed to reduce it; had it been present on one side only, there would not have been the complete dysphagia, nor could the reduction have been accomplished without some lateral or backward movement of the head and neck. Dr. Mugna's case was also one of double displacement, brought on by sudden spasm, the result of extreme distension of the lower part of the pharynx.

From the evidence which has been brought forward, it will be seen that displacements of the thyro-hyoid articulation are by no means infrequent nor of minor importance.

(b) Hydrarthrosis.

As there is occasionally a combination of the hydrarthrosis and dislocation, as illustrated by the remarks made and cases referred to in the preceding section, in the course of which the dropsical condition of the acquired joint has been described, it is unnecessary that I should go over the same ground again. It is a very curious and singular anomaly, however, in the economy, that a capsule should form around two moveable extremities for the purpose of keeping them together, and thus constitute a joint, and that the small osseous grains present in the ligament between them should enlarge and perform the part of sesamoid bones.

The hyoid apparatus in some of the mammalia, particularly the quadrumana (not all the genera) is observed to constitute naturally a sort of true thyro-hyoid joint in place of the ligaments. In such a case the superior cornua of the thyroid cartilage are very short, and are almost in direct contact with the extremities of the greater cornua of the hyoid bone. Thus in ourselves, through the agency of disease, we approach a natural condition of things in some of the lower animals.

If the membranous sac, thus artificially formed as a morbid product, should become greatly distended with fluid and cause serious inconvenience, and the diagnosis be clear, it should be punctured with a very fine trocar and canula and the fluid allowed to escape. It is an operation requiring great delicacy

* *Annali Universali*, quoted in the *Medical Gazette*, vol. iv.

of manipulation and a familiar acquaintance with the structures in this part of the neck.

This condition is present once in a while in phthisical patients who suffer much from their throats, and the peculiar pricking sensation sometimes experienced in swallowing is, in certain instances, due to the movements of the cornua in the sac thus affected with dropsy. It may also be looked for in long standing cases of chronic bronchitis and emphysema; and in certain forms of asthma.

(c) Anchylosis.

The thyro-hyoid joints, acquired in the manner previously described, undergo partial ankylosis in certain rare instances, as a process of reparation, and when such is the case, several of the osseous particles or grains will be found enlarged and partake somewhat in the formation of the anchylosis. True, firm, and solid ankylosis is very rare, on account of the mobility of this part of the throat, and it would be found on one side only. This is a condition that, so far as my researches have extended, has not as yet been detected during life, although I have met with two instances wherein I suspected that it was present.

(d) Spontaneous rupture of the ligaments.

Although the possibility of the occurrence of a spontaneous rupture of the thyro-hyoid ligaments has passed through my mind in the course of my labours, yet I was not aware that it had taken place during life, until I was startled into belief by the recital of a case before the Pathological Society, on May 15, 1860, by Dr. Stallard, who at the same time exhibited the preparation itself. This I examined with great care and attention, and thoroughly satisfied my mind that it was a rupture, as for a certain distance the remains of the ligament could be felt as a thin and delicate cord between the finger and thumb. It really required a familiarity with this part of the throat by frequent dissection to make it out. I was therefore astonished to hear Mr. Partridge (who has the reputation of being a good anatomist) doubt the existence of such a lesion in that instance, which, besides the tangible evidence of its presence, was most clearly confirmed by the history given of the patient during life.

Being perfectly assured that it was present, I encountered him in argument upon a subject that I could rightly express an opinion upon.

And here it is well to observe that the results of honest and laborious research, carefully conducted, with facts well made out, cannot be set aside or overthrown by the mere *ipse dixit*

opinion of any one. If I had not been a *patient* anatomist, some of the new facts given in the present communication would not have been discovered. To ignore, therefore, the valuable and reliable facts constantly brought before us, on the part of those who have had no share in working them out, is simply ridiculous.

Dr. Stallard had not only the acumen to discover this lesion during life, but the zeal to turn it to account for the benefit of science after death. And the profession must feel much indebted to him for bringing it forward in such a clear and intelligible form as that published in the 11th volume of the Transactions of the Pathological Society, of which the following is an abstract:—

"The patient was a man aged 44, who had been suffering for three months with hoarseness and constant cough, which was loud and clanging, and aggravated by every attempt at deglutition. There had been hæmoptysis, and there were the physical signs of tuberculous deposit at the apex of both lungs, and in the left of incipient softening. The larynx was large, prominent, and tender; the epiglottis large and irritable; and the papille at the back of the tongue much enlarged. Two months after, during a paroxysm of cough, he felt something give way in his throat, and the difficulty of deglutition was increased. On examination, the right posterior cornu of the hyoid bone was felt to be floating loosely beneath the integument. It was separated by at least an inch and a half from the thyroid cartilage. On the left side there was great mobility of the hyoid bone, but the separation was not equally distinct. During the act of deglutition, the hyoid bone was drawn upwards, and the larynx tilted downwards at the posterior part, thus increasing the distance between the thyroid cartilage and the hyoid bone, the connection being maintained anteriorly only by the thyro-hyoid membrane. It thus happened that the closure of the larynx became incomplete posteriorly, and fluids entered with great ease. This opening was further increased by ulceration, which had denuded the laryngeal cartilages at the posterior part."

Dr. Stallard found the direct application of remedies to the larynx comparatively easy, and the extreme irritability of the part was greatly relieved.

From the foregoing account it will be observed that the chief point in the diagnosis of a rupture of the thyro-hyoid ligament, is the sensation experienced by the patient of something suddenly giving way, followed by the wide separation of the parts, and the discovery of the cornu of the hyoid bone floating loose beneath the skin. It is a lesion unfortunately that cannot be remedied by the resources at our command.

IX.—GENERAL DISPLACEMENT OF THE ENTIRE TONGUE BONE.

Although the neck is frequently the seat of various kinds of tumours, it seldom happens that pressure is exercised upon the larynx or the hyoid bone unless they have attained to a considerable size, or that they have originated very close to these parts. Tumours originating in the submaxillary, sublingual,

or thyroid regions, more than any others involve the upper part of the larynx and base of the tongue. Not only do the larynx, trachea, and hyoid bone, become displaced by these tumours, but they become altered in form, compressed, and sometimes flattened. The last I have seen examples of in the trachea, especially in a lateral direction, now two or three times, and the calibre of the tube has been almost wholly obliterated by the growth of the tumour around it.

Tumours springing up in the submaxillary region, in the hollow that exists on either side of the neck between the greater cornu of the hyoid bone and the upper and lateral borders of the thyroid cartilage (which can be distinctly felt in our own necks by the finger and thumb), are especially dangerous, for as they increase in bulk, they may attach themselves to the lateral part of the thyroid cartilage, push up one side of the base of the tongue, displacing the hyoid bone, and nearly obliterating the aperture of the glottis, by lateral pressure. The result of this is constant dyspnoea, and sudden suffocation. A case of this kind was brought before the Pathological Society during the last session, by Mr. Henry Thompson, for Dr. Wm. Tindal Robertson, of Nottingham, and I had the honour of being appointed by the Society, with Dr. Dickinson, to examine and report upon the specimen exhibited.

It consisted of a tumour the size of an orange, situated above and to the right of the thyroid cartilage, overlapping its right wing.

The body of the hyoid bone was pushed obliquely towards the left side of the thyroid cartilage, its right horn being much displaced upwards and apparently lost in the substance of the tumour; whilst its left horn rested upon the superior border of the left wing of the thyroid cartilage, its extremity touching the anterior part of the base of the superior cornu of the latter. The thyro-hyoid membrane was stretched upwards.

Posteriorly the tumour rose up from the concavity of the upper part of the entire thyroid cartilage, but encroached on its right side; its most prominent part projected backwards an inch beyond the level of the cricoid cartilage. The right superior cornu of the thyroid cartilage was lost in the tumour. The course of the tumour now ran obliquely across to the left side, involving the right thyro-epiglottidean fold of mucous membrane, displacing the epiglottis to the extreme left, and so compressing it laterally as to leave a pear-shaped opening about two lines broad, but obliterating the passage at a depth of three lines, where a mere slit could be noticed. The entire larynx was compressed laterally.

The right side of the larynx thus seemed to be firmly attached to the tumour which absorbed into it the thyro-hyoid ligaments. It did not appear to have involved the tongue.

The disease was medullary cancer of eight months' duration, and the patient was an elderly man who fell dead whilst going along the street.

The amount of compression which the tumour exerted upon the upper part of the larynx was quite remarkable, and it seems astonishing that the patient was enabled to breathe at all through such a small aperture as that described. The



accompanying woodcut is from a drawing which I made of the tumour as sent up by Dr. Robertson. The lines show the position which the hyoid bone occupied in the diseased mass. The tongue had been wholly removed. The union between the thyroid cartilage and tumour was very strong; it is impossible to say, however, whether it arose primarily from the perichondrium, unless that point was ascertained at the commencement of growth. At one time I was strongly of opinion, whilst pursuing the dissection of the specimen, that it might have arisen in the right tonsil.

For further information about this interesting case, I must refer the reader to the twelfth volume of the "Transactions of the Pathological Society."

Professor Louis Porta, in his monograph on the "Diseases and Operations of the Thyroid Gland," published in 4to., at Milan, 1849, gives a plate of dislocation of the thyroid cartilage and os hyoides obliquely to the left side by the right lobe of the thyroid gland, affected with medullary cancer, in a man aged 66 years. The dislocation is considerable, and somewhat resembles that in the case just described.

The other examples of displacement which shall be now brought forward, are such as are offered by our London museums.

Malignant disease of the tongue, which is pushed upwards, the body of the hyoid bone so dislocated downwards as to press on the upper part of the larynx.

This is in the museum of St. George's Hospital, and is described as—

"Malignant disease of the tongue, preparation from a patient of Sir B. Brodie. The tongue presented several scirrhous tubercles in its substance. The root of the tongue is the part primarily affected; the disease has spread from the tongue to the fauces and soft palate."—L. B.

An examination of the specimen shows the tongue to be elevated upwards by the tumours, it is also much ulcerated on its right side; the body of the hyoid is pushed downwards, pressing on the upper part of the larynx; and the horns on either side, especially the right, seem encircled by the different tumours, which must have occupied either side of the neck superiorly as well as beneath the jaw.

The epiglottis and hyoid bone pushed downwards by a medullary growth.

This is a preparation in the museum of St. Bartholomew's Hospital, described as—

"A larynx, with part of the fauces. A large growth of soft medullary substance, partially ulcerated, covers the base of the tongue, the soft palate, the tonsils, and the upper and posterior wall of the pharynx."—(Series 23. No. 3.)

The cancerous disease has pressed the epiglottis backwards and downwards, and has pushed the hyoid bone also downwards. Respiration must have been seriously embarrassed in this case.

Dislocation of the hyoid bone forwards.

In the museum of the College of Surgeons is a preparation of cancerous disease of the pharynx and oesophagus, in which the hyoid bone is seen to be pressed forwards, although not mentioned in the history of the case; taken from a woman who died of cancer of these parts. (Vol. iii. Pathology, p. 35. Specimen No. 1,095.)

Lateral displacement of the greater horns of the hyoid bone, also in the museum of the College of Surgeons. No. 1,096. Preparation of cancer of the pharynx. The horns of the hyoid bone are dislocated or rather widely expanded laterally, giving to the bone a very much wider arch than natural.

Dislocation of the larynx and base of the tongue to the left side, by a bronchocele.

This consists of a cystic bronchocele, chiefly affecting the right side of the thyroid gland, preserved in the museum of St. Thomas's Hospital. (V. 5.) It is described at length in

the third volume of the catalogue, but its chief point of interest in illustration of the present subject, is, that the tumour pushes the larynx and base of the tongue to the left side in a somewhat oblique direction.

Dislocation of the larynx and base of the tongue by a bronchocele.

In the museum of University College Hospital, is a preparation (550, W. 5) simply labelled a "Large tumour compressing the oesophagus, and separating it from the spine." On carefully examining it, I find that the tumour is an enlargement of the left lobe of the thyroid gland, which has also pushed the larynx and base of the tongue somewhat to the right side.

Encircling of the larynx and trachea by a large bronchocele, with displacement of these parts, together with the hyoid bone forwards.

The most remarkable instance of general displacement of the trachea, larynx, and hyoid bone forwards by a very large bronchocele, forming a girdle around the larynx and trachea, is to be seen in the museum of the Grosvenor School of Medicine. The thyroid gland is larger than a good sized coconut, and the enlarged lobes have extended backwards on either side, meeting posteriorly, behind the larynx and trachea, and displacing them much forwards, together with the base of the tongue and hyoid bone.

These parts appear to be completely crushed by this large tumour, up to the level of the hyoid bone, but the latter has participated in the general displacement forwards. There is no history attached to this wonderful preparation, which is much to be regretted.

In *prolapsus* or *protrusion* of the tongue from hypertrophy, the os hyoides and larynx are drawn upwards and forwards, necessarily by the great weight of the organ. The mental portion of the lower jaw is depressed in some instances, when the teeth assume a forward or horizontal direction. The larynx and hyoid bone are thus displaced, as it were, behind the lower jaw.

Contraction of the neck from *burns* is another cause of displacement of the hyoid bone, which is usually downwards, but it may take place upwards and forwards, if the chin is drawn downwards so that the mouth remains permanently open.

X.—DISEASE OF THE HYOID BONE OR ITS COVERING, BY EXTENSION FROM THE TONGUE AND NEIGHBOURING PARTS.

Cancer of the tongue is fortunately a rare affection comparatively speaking, although I have seen many examples at the

Cancer and other hospitals of London, besides a few in private practice. In the London museums specimens are numerous. That the base of the tongue is involved in an equal ratio with the other parts of the organ is fully borne out by an examination of all the preparations. If the disease is extensive at the base of the tongue, and the patient lives long enough, it will extend to the hyoid bone, attacking its fibrous envelope with inflammation, and subsequently laying the bone bare, which now becomes necrosed.

Hopeless as the disease is, under ordinary circumstances, it becomes doubly so when this particular bone is attacked, as it utterly destroys all hopes of success from an adoption of the operation for the excision of the remains of the organ, in the performance of which the hyoid bone forms so important a guide. The description of this operation, as given by surgical writers, and the experience of Mr. Syme, Dr. Fiddes, of Jamaica, and some few others, fully shows this. The following examples, therefore, which have been selected to illustrate this section of our subject, tend to instruct us that if the patient or his friends desire operative interference as holding out a chance for life, it must be attempted before hyoid implication has occurred. The question might naturally be asked, How is this to be ascertained? When malignant disease is present, it is almost impossible to state the condition of this bone by the sensations of the patient, for pain is such a constant accompaniment. The chief sign to be relied upon is pain externally in the bone itself; the part is very tender to the touch, and the patient seems anxious to avoid anything like digital pressure. Besides this symptom, we now possess the aid of actual inspection of the parts by the assistance of the laryngoscope. It is unnecessary for me to describe the manner and mode of its application, for that I would refer the reader to Czermak's monograph on this most invaluable instrument, just issued by the New Sydenham Society, and which I have had the honour to translate for the Society, with the concurrence of the author. In it every information will be found regarding it. I may remark, however, that the back part of the tongue can be more readily examined and thoroughly inspected than any other part of the throat; and, notwithstanding the great swelling of the anterior part of the tongue, oftentimes, when its base is affected with cancer, by care and attention the ravages of the ulceration can be distinctly recognised, and its extent ascertained. No difficulty will be experienced in determining whether the hyoid bone is involved or not. Such cases as some of the following are especially suitable for laryngoscopic examination.

Extensive cancer of the tongue and neck, producing a deep excavation, with denudation of the left side of the body of the hyoid bone.

(Series 8. No. 1.) "The ulcer has destroyed the tongue on the right side, its surface is rough and uneven, the edge thickened and irregular. The ulceration extends a considerable distance into the neck."

The foregoing is the description of this specimen in the museum of the Middlesex Hospital, but a view of the preparation conveys an idea of a larger amount of disease, and it shows to what an extent it may proceed before destroying life. The ulceration has produced an irregular cavity the size of an orange, which extends as low down as the lower border of the thyroid cartilage on the right side; and, although the cavity is continuous from the tongue, its walls are formed by tongue and enlarged carcinomatous glands on the right side of the organ. In one spot, to the left of the base of the cavity, a little hollow is noticed, about a line and a half in diameter, which reveals a part of the left half of the body of the hyoid bone denuded of its periosteum. This is a very remarkable preparation, and well worthy of study.

Ulceration of the base of the tongue, destroying the epiglottis and other parts, and extending to the posterior part of the body of the hyoid bone.

"The base of a tongue, with parts of the fauces, pharynx, and larynx. Deep and extensive ulceration, which appears to have succeeded the growth of a nodular tumour, has destroyed the epiglottis, the folds connecting it with the arytenoid cartilages, the base of the tongue, and parts of the arches of the palate. The ulceration is bounded below by the superior vocal cords."—*Series 23. No. 2.*

This preparation, of great interest, is in the museum of St. Bartholomew's Hospital; all the back part of the tongue, together with its base, appears to be destroyed by the disease right down to the inner surface of the hyoid bone.

Destruction of nearly the whole of the tongue by cancerous disease as far as the os hyoides.

The following description sufficiently explains itself. The preparation fully shows the fearful ravages which the tongue has sustained. It is in the museum of St. Bartholomew's Hospital.

"A larynx, with part of the pharynx and palate, and the remains of the tongue. Nearly the whole of the tongue has been destroyed by cancerous ulceration. Its base and a small portion of the left side alone remain, and the ulceration which has exposed them has also spread in the tissues beneath the tongue, nearly as deep as the os hyoides. The tissues around the ulcerated parts are hardened, consolidated, and confused, and have cancerous matter infiltrated in them."—*Series 23. No. 18.*

Cancer of the base and centre of the tongue, extending close to the hyoid bone.

This is another example in the museum of St. Bartholomew's

Hospital, in which the disease has extended to the very base of the tongue, in close proximity to the hyoid bone. In the catalogue it is described thus:—

Sections of a Carcinomatous Tongue.—"The disease is situated in the base and centre of the tongue, and a hard tubercle projects on its upper surface. The diseased structure is very firm, irregularly intersected by white lines, and closely blended with the surrounding muscular substance. The left tonsil is ulcerated, and a bisturi is passed through an artery distributed to it, from which a considerable hæmorrhage occurred just before death."—(*Series 23. No. 11.*)

Epithelial Cancer, involving the tongue, larynx and tonsils; on the left side of the tongue the ulceration extends to the cornu of the hyoid bone.

This is a preparation in the museum of St. Bartholomew's Hospital, in which the base of the tongue, the tonsils, and portion of the larynx are involved in an epithelial growth. It was removed from a man in whom there was likewise an epithelial cancer of the scrotum—(*Series 25. No. 35.*)

The ulceration on the left side of the base of the tongue appears to have extended to the left cornu of the os hyoides, although I cannot distinguish the bone to be bare.

Probable extension of cancer of the tongue and structures at its base to the hyoid bone.

(Ser. 29. Sub. Ser. 1. i.h.) "Specimen of cancer of the tongue, glottis and epiglottis," in the museum of St. George's Hospital.

The preparation shows the ulceration to have extended through the left posterior half of the organ deeply inwards, most probably right down to the body of the hyoid. A part of the left side of the epiglottis is destroyed as well.

Malignant ulceration of the tongue extending to the hyoid bone.

In the museum of the Westminster Hospital is a specimen of malignant disease of the tongue, in which the morbid action would appear to have extended right down to the hyoid bone, for the ulceration and loss of substance is seen in the preparation to extend downwards in front of the epiglottis. There is no history of the case.

In some of the foregoing cases, although the bone was not seen, yet I believe it was involved, or very nearly so; they, however, clearly show what the result would have been had the patient lived a little while longer. Mr. John D. Hill, house-surgeon to the Royal Free Hospital, recently informed me that there were two out-patients at that institution affected with extensive cancerous ulceration of the base of the tongue, which he believes may extend to the hyoid bone. I refer to

them here, for the purpose of showing that, notwithstanding the amount and extent of the ulceration, they are still able to go about, without confinement to their beds.

Ulceration of the tongue extending to the hyoid bone.

In the museum of the Royal College of Surgeons.

Path. Series. 1068.—"A tongue with the larynx and neighbouring parts. An irregular ulcer, with hard, sinuous, and nodulated margins has destroyed the apex of the tongue, and extended through its length to its base, where there is a wide aperture just in front of the epiglottis. On the anterior and upper part of the tongue, behind the ulcerated part of the apex, many of the papillae are elongated, and form slender processes of the one-eighth of an inch in length.

From a man 60 years old, in whom the disease had existed several months; it commenced at the apex of the tongue and slowly extended backwards.—*From the museum of Robert Liston, Esq.*

(Vol. 3. Pathology. p. 24.)

So far as I can perceive by examination of the specimen in spirit, the ulceration has extended to the upper edge of the body of the hyoid bone, and most probably has affected the periosteum. No mention is made as to its real nature; it might be an example of syphilitic ulceration, from the character of the margins of the ulcer.

A hollow ulcerated cavity in the right side of the tongue, close to the hyoid bone.

This is a remarkable preparation in the museum of St. Bartholomew's Hospital, taken from a woman 40 years old, who, till within 4 months of her death, when this disease was first observed, had good health. The affected side of the tongue is completely hollowed out by the ulceration, and a great cavity extends close to the hyoid bone. It is described as "a tongue, the inferior part of which is, on the right side, completely destroyed by ulceration. Around the ulcerated surface the muscular substance is indurated, but has undergone no other obvious change of structure."—(*Series 23. No. 11.*)

The nature of the disease is here also not described, and I hesitate to call it cancer, from the rapidity of the ulceration. I might infer that perhaps the foregoing is an instance of the foul and sloughing ulcer of the tongue.

Gangrene of the Tongue extending to the hyoid bone.

I have seen an instance in which the tongue began to mortify, and did not cease until it destroyed the entire organ right down to the points of its attachment to the hyoid bone. This occurred when I was a pupil, and made a strong impression upon me at the time. The patient was a man of about 60 years of age, and died after some days; the tongue bone was deprived of its periosteum. The case was one of, I believe,

malignant pustule of the tongue—an affection of extreme rarity.

XI.—HYOID NEURALGIA.

At the commencement of my observations on diseases of the hyoid bone, it was stated that there were many anomalous symptoms referred to the throat which have been attributed to the larynx, when the latter was found to be normal, the fatal result ensuing from other causes. Thus, in cases of cancer of the tongue, I have seen patients complain of pains at the root of the organ, which they were told was the result of extension of the mischief to the larynx, when the latter was quite healthy: and from what has been already stated in the description of the foregoing diseases of this bone, it can be readily comprehended why the diagnosis may have proved erroneous.

In my work on "Diseases of the Throat and Windpipe," there is a chapter devoted to neuralgia and nervous sore throat, wherein I have endeavoured to point out the means of diagnosing these from other affections. Besides what is there described, there is a form of neuralgia occasionally to be met with, which is deserving of a distinct appellation, and I propose to call it *Hyoid Neuralgia*. A sharp, severe, sometimes very acute, pain is felt at the root of the tongue, which may or may not shoot forward through the organ. The patient can put the point of his finger upon the neck, at the spot where it commences, and this is the body of the hyoid bone. It may be located at the junction of one of the greater cornua with the body of the bone. In one instance that came under my observation, the patient, a thin spare young man of nervous temperament, the larynx had been regularly mopped, under the impression that the pain was due to ulceration of the mucous membrane. Sometimes the pain may extend upwards, on either side of the neck to the ear, and is compared to a needle running into the ear, with an associated pain also in the region of the tonsils. Under these circumstances the mere effort of deglutition is exceedingly painful.

The same measures which I have found serviceable in other forms of neuralgia of the throat are equally so here; but especial attention must be devoted to the application of a grain or two of the aconitina ointment to the small circumscribed space in front of the bone in the neck. Its formula is given in my other work already alluded to.

INJURIES OF THE HYOID BONE.

These consist of fractures from manual and other forms of violence, wounds of the bone and parts around it, and lacerations.

tion of the soft structures from various causes, injuring the muscles, ligaments, and thyro-hyoid membrane.

I.—FRACTURE OF THE BONE.

When the tongue-bone is fractured, the injury is of a much more serious nature than a dislocation, from the urgent character of the symptoms, and the extreme danger to which the patient is exposed from suffocation. Direct violence, in some one of its forms, usually produces it. The part fractured is either one or both of the horns at their middle, or close to their junction with the body of the bone. Should the body be broken at its middle, the result would prove more serious. There is generally bleeding from the ruptured mucous membrane, which is sometimes most profuse, and blood is coughed up. There is great difficulty and pain in swallowing, and occasionally it is impossible; whilst speech is equally distressing, and the voice is gone. Simple protrusion of the tongue will produce symptoms of suffocation. The organ itself is now and then swollen from the inflammation, which is sure to extend to the throat and pharynx. Mobility of the horns, with distinct crepitation, can be felt with the finger and thumb externally, or when the patient swallows, and the finger introduced into the mouth will feel the displaced and broken bone if projecting towards the throat.

The following examples of fracture of this bone are divided into three classes, for convenience of study. In one the violence is of a manual kind, that is, the throat has been forcibly grasped and clenched by the hand of another person and the lesion accomplished, a favourite method of the garotters of modern days. In the second class, fracture has taken place through the agency of sudden contraction of some of the muscles attached to the cornua of the bone; whilst in the third the lesion has arisen from a fall, or some other accident, in which direct contact of the part with some foreign substance has been the force producing it.

(a) Fracture from Manual Violence.

I have come across the particulars of five cases of this form, and add two others, making seven examples. One of the earliest recorded is by Dr. Lalesque, in the *Jour. Hebdomadaire*, March, 1833 (See also *Amer. Jour. Med. Sciences*, vol. xiii., p. 250, 1833, and *Revue Médicale*, vol. ii., for 1833, p. 115). The following are the leading features:—

Fracture of the os Hyoides in a Marine, whose Throat was clenched by the hand of an adversary.

The subject of this was a Marine, aged sixty-seven, who had his throat violently clenched by the hand of a vigorous adversary. At the moment there

was very acute pain, and the sensation of a solid body breaking. The pain was aggravated by every effort to speak, to swallow, or to move the tongue, and when this organ was pushed backwards, deglutition was impossible, articulation indistinct, and the patient was unable to open his mouth without exciting a great deal of pain. He placed his hand upon the anterior and superior part of the neck to point out the seat of injury. This part was slightly swollen, and presented on each side a small ecchymosis, one above, more decided, immediately under the left angle of the lower jaw. The large horn of the os hyoides was felt very distinctly to the right side; and it could be felt on the left, deeply seated, by pressing with the finger. In following it in front towards the body of the bone, a very sensible inequality near the point of junction of these two parts could be perceived. By putting the finger within the mouth the same projections and cavities inverted could be felt, and even the points of the bone, which had pierced the mucous membrane, were evident.

The left horn was broken, near the body of the bone, and had pierced the membrane, giving rise to bleeding.

He was bled; the broken horn was easily reduced with the aid of the finger. The head was inclined backwards. Rest, silence, diet, and lead lotions composed the after treatment. He was fed by an œsophagus-tube for twenty-five days, and in two months the cure was complete. Within the month a slight mobility could be felt by the finger in the spot where the splintered points had been first felt.

Fracture of the os Hyoides by manual seizure, Complicated with a Cystic Tumour of the Tongue.

A married man, aged fifty-five years, was violently seized in the throat by a very strong man, in a state of intoxication. The latter, named Poulain, was known for brigandage and acts of cruelty, and was nicknamed the "Iron Arm."

Soon after the injury very acute pain was felt in the anterior region of the neck. The patient had heard a sound resembling that of a solid body breaking. Efforts at phonation and deglutition increased the pain. The front of the neck was swollen and ecchymosed. In spite of the swelling, M. Auberge was enabled with the hand to recognise a fracture of the right horn of the hyoid bone. Almost the entire right half of the tongue was covered with an encysted tumour, present for some years. In consequence of this, the finger could not be introduced into the back part of the mouth without great difficulty, yet it encountered the projecting little splinters which had pierced the mucous membrane.

The patient was bled frequently, to obviate symptoms of cerebral congestion, and fomentations were applied to the head and front of the neck. After some hours Auberge proceeded to reduce the fracture, which he did successfully, not without a good deal of pain, by the aid of the index-finger of the left hand in the mouth at the seat of injury, and the right hand placed externally. The jaws were kept widely separated during this by a roller placed between the teeth.

Silence, quiet, immobility, fluid food by means of an œsophagus-tube, effected a complete cure of the fracture in two months. Fourteen months after this Auberge extirpated the tumour of the tongue, the size of a small egg, which had existed for eight years.

This interesting and curiously complicated case is recorded by P. J. F. Auberge, in the third vol. of the *Revue Médicale* for 1835. The author's reflections upon it will be found well worthy of attentive perusal.

The example which now follows may be looked upon as unique. It forms the basis of a thesis, by Dr. R. Bitkow, published at Berlin, in 1832, entitled "De Ossis Hyoides Fractura," 12mo., pp. 26. The author's observations are confined to

a single case, which came under his notice. He does not refer to any recorded instances. The following is an abstract of it:—

Oblique Fracture of both greater horns of the hyoid bone from manual violence.

Sophia Schuband, aged nineteen, a servant, in previous good health, on the 4th Aug., 1831, was seized in a quarrel by a strong man, with one hand upon her neck, as if to choke her, and, with the other, several blows were inflicted upon the head. This was followed by severe pain in the neck, which became swollen and inflamed, respiration was impeded, and swallowing difficult. Although leeches were applied and medicines given, the pain increased, and suffocation was imminent. She was, therefore, conveyed to a hospital on the 6th. The soft parts of the neck were now very painful, hot, and swollen; the swelling was greater near the chin, and less so near the sternum. Crepitus could be felt and heard on the right side of the hyoid bone. The greater horn was separated at its middle part, which, on being slightly pressed inward, was separated at its middle part, and caused the sharp and pricking pain of the internal parts; but compression upon the separated parts restored them to their natural situation. The same symptoms were observed on the left side, except distinct crepitation, with swelling and bruising of soft parts in addition. These various symptoms were clearly made out to be the result of an oblique fracture of the two greater horns of the hyoid bone.

The treatment consisted in frequent leeching, cold applications to the neck, and aperients. On the 6th day the voice was not so hoarse, and swallowing was not so painful. On the 7th day crepitation was still present, but less distinct. On the 11th day speech and deglutition caused no pain; the voice was still rough and hoarse. On the 12th day an attack of fever and catarrh threw the patient back, but by the 28th day (August 31) all crepitation of the hyoid bone and swelling of the neck had gone; the fracture seemed to be firmly united. There was no hoarseness nor dysphagia, and the patient was convalescent.

Assuming that the diagnosis was correct in the foregoing case, then it is the only one on record in which both horns of the hyoid bone were fractured. Before meeting with it, which I did through the kindness of Mr. Canton, I had arrived at the conclusion that the two horns were never fractured by manual violence alone, for the reason that as one horn would give way, the other would escape by thus losing its opposite point of resistance. The extensive injury to the neck, however, in this exceptional case shows that a very great amount of force had been expended by a strong and powerful man, and thus a double fracture of the hyoid bone was combined with the other lesions inflicted.

A very remarkable case is mentioned by M. Devergie, in the second vol. of his "*Médecine Légale*" (1852, p. 163), which may be here briefly noticed. It consisted of

Fracture of the hyoid bone and of both cartilages of the larynx from strangulation. Cutting of the throat after.

The lesions especially noticed were, fracture of the left greater horn of the hyoid bone; a transverse section of the thyroid cartilage, about two lines beneath its superior border, this section was fourteen lines in length; a vertical fracture of the left half of this cartilage; a double fracture of the

cricoid cartilage; and ecchymosis of the left thyroid body in the inferior third of its dimensions. The subject of this severe injury was a woman, named Duval, who must have quickly succumbed from the hæmorrhage consequent upon the large wound in the neck, inflicted by an assassin, but not until he had first attempted to strangle her with his hand, in which the larynx and hyoid bone were broken.

From the absence of traces of a ligature on the throat, M. Devergie infers, and, I think, very correctly, that the throttling was accomplished by grasping exclusively; and he refers afterwards to the occurrence of such fractures as establishing generally a presumption of homicide.

In a paper on manual strangulation and death by external violence, with experiments and illustrative cases, by Dr. Alex. Keiller, in the "*Edin. Med. Jour.*" (vol. i., 1855-6, pp. 824 and 527), is an instance of

Fracture of the right hyoid bone, produced by throttling, which occurred to Dr. Murchison, who kindly drew my attention to it.

The subject of the injury was a married female, aged twenty-nine, who consulted him on the 28th June, 1855, at the Westminster Dispensary, complaining of swelling in the throat, considerable dysphagia, and slight dyspnoea. She stated that two days before, her husband had come home drunk at night, had thrown her down on the floor, and forcibly compressed her throat with his right hand until she felt something snap. On examining her throat, there was found to be considerable swelling, with ecchymosis about the upper part of the larynx; and on moving the fore part of the arch of the hyoid bone from side to side, distinct crepitus could be both heard and felt. His then colleague, Mr. Wale, Surgeon to the Dispensary, saw the case, and satisfied himself as to the existence of a fracture.

The exact nature of the fracture is not stated; but I think there can be no doubt that it was the right greater horn of the hyoid bone, from the circumstance of the throat having been grasped by the right hand, the thumb of which would produce the lesion.

On the 14th Feb., 1859, I learnt from Mr. Thomas Owen, house surgeon to the Royal Free Hospital, that there was then an out-patient labouring under

Fracture of the Hyoid bone, produced by manual violence in a quarrel.

The symptoms were characteristic and to the best of my recollection the lesion was confined to the right side only. There was much general swelling and ecchymosis of the throat externally; and at one time the dyspnoea was urgent. Mr. Owen promised me the particulars before going abroad; but as he forgot to do so, I think it right to give this brief reference to the case.

On the 15th October, 1861, I exhibited at the Pathological Society an example of

Fracture of the hyoid bone at the junction of the right greater cornu with the body.

The specimen was obtained from an adult male subject, about whose history during life nothing was known. The bone had been originally fractured at the junction of the right inferior cornu with its body. It had united in a faulty position, causing the cornu to become shorter than its fellow, and projecting inwards at its terminal end. The proximal end of the fractured horn was overlapped by the body of the bone to the extent of nearly a quarter of an inch. The terminal end of the same cornu gave evidence of its having formed a distinct joint, surrounded by a proper capsule. The appearances presented by the bone are shown in the annexed woodcut.



It is quite certain that the fracture must have occurred at least a couple of years before death, in consequence of the appearances presented by the bone, together with the formation of a thyro-hyoid joint. It may be reasonably assumed also that the fracture originated from manual violence, the chief force being exerted by the pressure of the thumb of the right hand of the person who inflicted the injury. For this very rare and at present unique specimen of united fracture of the hyoid bone, I am indebted to the kindness of Mr. Edwin Canton.

(b) Fracture from accidental causes.

I am enabled to give six examples of fracture, the result of accident, two of these not before published. In the three first the injury sustained caused sudden contraction of some of the muscles attached to the hyoid bone, and thus gave rise to the fracture. At first sight this might seem an almost impossible occurrence, but a careful analysis of the cases, leaves no room to doubt that the lesion has arisen in this way.

Fracture of the hyoid bone, attributed to muscular action, in a fall from a waggon on to the face.

This is a curious case recorded by Dr. Grunder in *Smith's Jahrbuch*. (See also *Brit. and For. Med. Chir. Rev.*, vol. 8, N. S. 1851.)

"A labourer, aged 63, fell from a waggon on to his face, and discharged a large quantity of blood by the mouth. He found he could not swallow, and twelve hours after there was severe pain in the neck. The voice was hoarse

and difficult. On attempting to drink the fluid was rejected with violent coughing, the patient declaring he felt it as if entering the air passages. Nothing abnormal could be found, and it was concluded that the case was one of disturbance in the function of the par vagum. On examining the fauces, the epiglottis did not appear to completely close the larynx as in its normal position. He went on well for six days, and in five more he died, having been ill with cough and aphonia.

"At the autopsy one of the larger cornua of the os hyoides was found broken, and had become firmly imbedded between the epiglottis and rima glottidis, inducing the raised position of the epiglottis, loss of voice, and difficulty of swallowing."

The fracture in this case Dr. Grunder believed was probably induced by muscular action, a cause first assigned in a case occurring to Ollivier d'Angers.

Fracture of the hyoid bone from muscular action.

The case of Ollivier's, referred to by Dr. Grunder, I have been unable to find, although it must be familiar to some writers. I include this short notice of it here to render my series of cases complete. One of the cornua was broken, and as there was no direct violence sustained, the fracture was attributed to muscular action.

For the third case, I am indebted to the kindness of Mr. Obré, of Melcombe-place, Dorset-square. It is one of

Fracture of the left greater cornu of the hyoid bone, with rupture of the thyro-hyoid ligament, from muscular action.

The patient was a medical man who, when driving along the London streets, was thrown from his gig, falling upon his head. He was insensible for some time, and on recovery he had lost the power of swallowing. Every attempt to swallow nearly suffocated him from the fluid passing into the trachea. In every other respect he was perfectly well. His symptoms were attributed by some surgeons to injury of the brain; but on uncovering the neck and closely watching the efforts at deglutition, Mr. Obré observed no movement in the trachea or pharynx. There was very great tenderness in the left thyro-hyoid region, and on careful examination the hyoid bone was found to be much separated from the thyroid cartilage on this side; the left horn of the hyoid bone was bent inwards. The conclusion was correctly arrived at that there was a fracture of this portion of the os hyoides, associated with rupture of the thyro-hyoid ligament of the same side.

This gentleman was fed for some time with a stomach pump, until, in fact, he had sufficiently recovered to permit of confidence in his own powers of deglutition; and although more than a year has elapsed since the accident, he is now unable to take a large drink, being obliged to swallow fluid by sips.

The unusual complication present in the foregoing case

invests it with extreme interest. Not only has the force of the muscular contraction broken the hyoid horn, but it has torn through the small and delicate ligament which held it in connection with the thyroid cartilage. It is to be feared that the consequences of this singular lesion will remain permanent.

In the other three cases of accidental fracture the violence was direct; they form an instructive contrast with the preceding instances. One of them is published for the first time.

Fracture of the left horn of the hyoid bone, from a fall down the cellar steps.

"In the following case, under Dr. P. G. Fox's care, a female, aged 20, fell down the cellar steps, striking the prominent part of the larynx and tongue bone against a projecting brick, severely injuring the former, and fracturing the left horn close to the body of the bone of the latter. Profuse bleeding ensued from the fauces, speech was almost entirely lost, and great difficulty was experienced in swallowing. On attempting to depress or protrude the tongue symptoms of suffocation were induced. Considerable inflammation and swelling of the throat and pharynx ensued, and continued for some time. In four weeks she was able to converse with an impaired voice, and ultimately recovered.

"At the time of the injury crepitation was distinctly felt, on pressing the bone between the finger and thumb, or when the patient would swallow."

The next is a truly wonderful case, recorded by Dr. Albert F. Sawyer, of San Francisco, California, in the *Amer. Journ. of Med. Sciences* for January, 1856.

Fracture of the hyoid and inferior maxillary bones, with fracture and dislocation of the thyroid cartilages, and other injuries, the result of a fall from a height of forty-five feet; recovery after tracheotomy.

"A strong muscular man was at work on a piling machine, which was carelessly overturned while he was near the top, and he fell with it to the ground, a distance of forty-five feet. The iron hammer of the machine, weighing 1,000 pounds, was at the time elevated, and precipitated his descent with the most fearful rapidity. The lower jaw was most extensively fractured into several portions, especially near the symphysis. The left side of the head and trunk was extensively bruised; the face was frightfully distorted. The cartilages of the larynx were fractured and separated, the right over-riding its fellow. On the left side the great cornu of the os hyoides could be felt loose, and detached from the body of the bone. The neck, upper part of chest, and back were emphysematous and slightly edematous. The right radius and left patella were fractured and comminuted.

"Symptoms of concussion of the brain were present, followed by delirium on the second day, and asphyxia on the fifth, necessitating tracheotomy between the fourth and fifth rings, as the larynx above was so much injured. The trachea was deeply seated in a thick muscular neck, enormously swelled as far as the thorax from the effusion of serum, and escape of air from the fractured larynx into the areolar tissue. After the operation, it was necessary to use artificial respiration to bring the patient too. A recovery ultimately ensued, but the larynx was so extensively injured, being fractured through the pectum, and compressed laterally by overlapping of the fragments that the passage was entirely obliterated, and the tracheal opening became patulous for life. For a time dilatation of the larynx was tried with bougies, but it proved of no avail."

* *Stethoscope*, Richmond, Virginia, U.S., June 1853.

The case is reported at length by Dr. Sawyer, who encountered many difficulties in its progress, and it was nearly twelve months before the patient's health was restored. An ankylosed knee, a fistulous trachea, and an ununited fracture of the jaw were the result of the injury. The fracture of the hyoid bone must have united, although it is not mentioned.

The following case was kindly furnished to me by Dr. Harley; it will be seen that in the nature of the lesion it differed from any of the others, and it is the only one that occurred in a child.

Fracture of the body of the hyoid bone in a child from a fall against an iron bedstead.

On the 28th March, 1856, a little girl aged six years, the daughter of Mrs. W—, while jumping fell upon the rail of an iron bedstead, which caught her across the neck. She was instantly seized with a fit of coughing, great dyspnoea, inclination to vomit, and a great flow of saliva from the mouth, the saliva being partly tinged with blood. She was seen almost immediately after by Dr. Harley, who found her quite black in the face. On examining the neck he saw a sharp body projecting beneath the skin, which felt very angular and was quite moveable. This he discovered to be a fracture through the middle of the body of the hyoid bone with displacement, one end of the body riding over the other. With a little careful manipulation the fracture was partly reduced, when the dyspnoea, the coughing, the excessive flow of saliva, and inclination to vomit, soon ceased. A bandage was applied around the neck to keep down the projecting end of the bone. It should be mentioned that before reduction was accomplished she could not swallow even a drop of water, and the child fainted once or twice. For the first three days she had a sharp attack of fever, and by the 3rd of April, six days after the accident, the fracture had united, and the angular projection was replaced by a rounded mass of callus. There was at this time an occasional pricking pain in the sides of the neck. Her subsequent recovery was perfect, without any deformity.

Treatment of fracture of the hyoid bone.

In the treatment of this form of throat injury, the first thing to be done is gently to restore the displaced and broken horns to their proper place, by introducing the forefinger of one hand into the mouth and holding the hyoid bone with the other externally. This will be only necessary if there is displacement with the fracture. General measures are now to be adopted for the inflammation, which is certain to arise, and

these consist of blood-letting from the arm, leeches to the throat, cold lotions, nitrate of potash in mucilage, with hyoscyamus and cherry laurel water. The strictest quiet is to be enjoined; efforts at speech are particularly to be avoided; absolute silence is to be maintained; and if swallowing is impossible, or the ends of the broken horns become again displaced in consequence of it, an œsophagus tube must be used to introduce liquid food into the stomach. Sometimes this is equally as injurious as the act of swallowing: when such is the case, recourse must be had to clysters to nourish the patient. Fluids only are to be taken by the mouth when circumstances permit it, and in small quantities at a time. If the hæmorrhage after the injury is profuse, or the inflammation violent, ice may be applied outwardly. Should, unfortunately, the body of the bone be broken, and the symptoms of suffocation become imminent, then the trachea must be opened to afford relief. The head of the patient should be kept rather low and inclined a little backwards, to keep the neck at rest.

(c.) *Fracture of the hyoid bone from hanging.*

The hyoid bone is sometimes found fractured in persons who have been hanged; indeed, Mr. South affirms, in his translation of "Chelius," that the only examples of fracture of this bone, with which he is aware, are those of persons executed in this manner, in which he says fracture is almost invariably found. I have not had the opportunity of satisfying myself as yet upon this point, but will do so on the first occasion that presents itself. My friend, Mr. F. J. Gant, examined the man Adams who was hanged in front of Newgate in 1859, and he did not find the cornua broken.

Mr. Mackmurdo, who was surgeon to Newgate Goal for very many years, and had examined the bodies of executed criminals, in reply to some inquiries which I addressed to him on this subject, kindly informs me* that once only he found the body of the hyoid bone broken, and in three or four cases one of the cornua, never the two. He sometimes found a dislocated cervical vertebra, and very generally a torn platysma myoides, but the skin was never injured. Interlobular emphysema was very common in the lungs as might be expected.

Orfila saw on one occasion a fracture of the os hyoides with considerable ecchymosis of the splenius and complexus muscles, as the result of suicidal hanging. This case he has recorded in the third edition of his "Treatise on Legal Medicine," (Vol. ii., p. 425).

* In a letter dated October 26th, 1861.

Remer cites one case of fracture of the larynx in 101 cases of voluntary suspension which he had collected; in none was there any lesion in the hyoid bone. If his observations are correct, then is there a great difference between hanging as a means of punishment and as a mode of committing suicide. This is well shown in a valuable paper by Dr. Duchesne upon "Strangulation by Incomplete Suspension," published in *Annales d'Hygiène Publique*, in 1845. It may be considered as an acknowledged fact, however, that fracture of the hyoid bone occasionally occurs as the result of punishment by hanging, and rarely so in suicidal suspension.

In voluntary suspension, Valsalva met with an instance of rupture of the muscles which united the os hyoides to neighbouring parts, of such a nature that the bone was separated from the larynx; in another, the sterno-thyroid and thyro-hyoid muscles were torn, and the cricoid cartilage broken. Weiss found the cricoid cartilage broken into several small pieces, and the superior part of the trachea entirely detached from the larynx. Morgagni and Valsalva have seen rupture of the larynx.*

In the museum of the College of Surgeons in Dublin are two preparations which I have seen. One (C. a. 57), is the

"Larynx, &c., of a criminal who was hanged, showing the nature of the injury inflicted. The thyroid cartilage and os hyoides are widely separated from one another, the intervening muscles and membranes having been rent across. The epiglottis, pulled up by the root, has ascended, in connection with the os hyoides and tongue, into the cavity of the mouth. So much is exhibited in the preparation. In addition to these lesions, the sterno-mastoid muscle of the right side was ecchymosed, contused, and broken; that of the left side was but slightly bruised. The omo-hyoid, sterno-hyoid, and sterno-thyroid muscles were so lacerated that only a few shreds held them together. The skin alone interposed between the rope, and the interior of the pharynx remained unbroken. The cervical vertebra and spinal marrow were uninjured."

Doctor Houston, in *Dub. Hosp. Reports*, vol. 5, p. 317, and cat. of Museum.

The other preparation (C. a. 58) is the

"Larynx and trachea of a man who was hanged. The lesions are in every respect similar to those shown in the preceding preparation."—*Idea.*

Although the lesions in both instances were extensive, yet the hyoid bone was not fractured.

In the punishment of the iron collar of the "garotte," as adopted in Spain and her colonies, I have heard it stated that the larynx and hyoid bone are completely crushed into fragments. The bone is also broken in the Turkish punishment of the bow-string.

* *Devergie. Op. Cit.*

II.—LACERATION OF SOFT STRUCTURES ATTACHED TO THE HYOID BONE.

When manual violence has been offered to the throat of varying degrees of severity, should the hyoid bone escape fracture, it may so happen that the thyro-hyoid ligaments may become ruptured: or the thyro-hyoid membrane may be actually lacerated and torn by the pushing downwards of the thyroid cartilage. Both of these are very serious and grave injuries, and may be recognised by symptoms which have already been described. Fortunately, they are not so common as laceration of the fibres of the small delicate muscles attached to this bone, which in their results do not cause the same amount of inconvenience, nor such severe constitutional symptoms. Manual violence upon the throat is at all times to be dreaded, and in the event of no serious lesion being inflicted, the patient will for a long time be a great sufferer, from the shock that the nervous system has sustained.

III.—WOUNDS OF THE HYOID BONE.

In attempts at suicide this bone is not only separated sometimes from its attachments, but is also wounded. The most common injury which it sustains is division of the thyro-hyoid membrane, of which very numerous instances are on record. Mr. McWhinnie, in a valuable paper published in the *Lancet* for 1846, "On Wounds in the Throat," (Vol. II., p. 268) relates a case of wound between the os hyoides and thyroid cartilage, extending through the base of the epiglottis, which proved fatal.

He gives another fatal case, wherein the wound extended immediately below the hyoid bone, in fact grazing it, and cutting through the thyro-hyoid membrane.

I have seen a large number of cases in hospital practice, but the following examples of sub-hyoid wounds, *i. e.*, through the thyro-hyoid membrane, I have examined in the museums.

Wound of the throat, through the thyro-hyoid membrane and oesophagus.

In the museum of St. Thomas's Hospital there is a preparation (W. 2) of the larynx, trachea, and oesophagus, in which a wound had been inflicted immediately above the thyroid cartilage, through the thyro-hyoid membrane, almost dividing the base of the epiglottis. It has healed to some extent for a circular opening is seen through the base of the epiglottis from behind.

Another preparation (W. 4) somewhat resembles this, but has several incisions through the thyroid cartilage as well.

Wound of the throat below the hyoid bone.

There is a specimen of cut throat in the museum of the Westminster Hospital in progress of cure. There are two openings: one superior, large, situated just below the os hyoides; the other smaller, inferior, and through which a bristle is passed obliquely into the interior of the larynx.—(Series 4. sub-series II, No. 1.)

An examination of the specimen shows the superior opening to lead into the upper part of the larynx immediately below the origin of the epiglottis.

Wound of throat between the hyoid bone and thyroid cartilage.

In the museum of the College of Surgeons, No. 1822 (Vol. 4, Path. Cat., p. 26.)

"The tongue, larynx, and pharynx, and a portion of the integuments from a man who cut his throat between the os hyoides and the thyroid cartilage. A large aperture remains in the situation of the wound, exposing all the anterior surface of the epiglottis. The integuments around it are completely cicatrised, and so contracted and sunk in, that the lower border of the cicatrix is smoothly continuous with the anterior surface of the epiglottis. The beard has grown almost to the margin of the aperture."—*Hunterian.*

This is one of the most curious and remarkable specimens that I have ever examined, the skin extends beneath the lower edge of the hyoid bone, which forms the upper boundary of the wound, which is wide and gaping. There can have been no inconvenience in breathing, but much dysphagia. It was a case to illustrate the involuntary depression of the epiglottis during the mere act of deglutition, without the presence of food, to be seen through the wound.

Wounds of the throat through the thyro-hyoid membrane.

I examined the following preparations in the museum of King's College.

394. "Deep suicidal wound of the throat." The incision was made immediately below the edge of the hyoid bone, almost grazing it, and cut through the base of the tongue to the epiglottis, but not wounding the latter.

395. Another specimen of wound of the larynx through the thyro-hyoid membrane, cutting through the greater part of the base of the epiglottis.

396 Is another example of the same kind, with two or three gashes in the thyroid cartilage itself.

The hyoid bone is sometimes wounded by incisions made from above, and the muscles are not unfrequently divided right down to the bone. Mr. McWhinnie relates a case of the kind in the *Lancet* for 1846 (Vol. 2, p. 268). A man, aged 40, inflicted the wound with a clasp knife, dividing all the muscles

between the bone and the chin, extending through the mucous membrane of the mouth. He died on the fifth day of hæmorrhage from the lingual artery.

Some years ago (August 1845) I was called to a person named Redmond, who had cut his throat with a razor, and on seeing him I found two wounds several inches long and one and a half deep, inflicted across the neck above the hyoid bone, and cutting several of the muscles right down to the latter. There had been a good deal of venous hæmorrhage, but the lingual artery was not wounded, and on closing the wound with sutures a recovery ensued. I may mention, however, that an attempt some months later was more successful in destroying the life of the same patient.

Wounds above the hyoid bone generally cause but little inconvenience, unless the lingual artery is wounded, whilst those immediately below are of the most serious character and commonly prove fatal, in consequence of the inflammation of the glottis and neighbouring parts which results from ~~it~~ *them*.

CASES.

TREATED BY FARADISATION.

BY

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M.DCCC.LXI.

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CASES

TREATED BY FARADISATION.

THE following cases, which have been treated by Faradisation, and some of which have already appeared in the *Medical Times and Gazette*, seemed to be of sufficient interest to justify their publication in a special form, as they illustrate a mode of treating disease which, although of great and lasting benefit in certain cases, has hitherto not been so generally adopted as the results obtained by it seem to warrant.

1. *Case of Neuralgia, Anæsthesia, Loss of Power and the Sense of Touch.*

This case was chiefly remarkable for its cause and rapid cure. The patient was a merchant, aged 30, of vigorous constitution, and active habits. He was a passenger by the Canadian steamer, which foundered at sea on the 4th of June last, about 200 miles off the coast of Canada. Many of the passengers were drowned; but this gentleman, by means of a life-buoy, was enabled to float until, three quarters of an hour afterwards, he was picked up by a boat which was passing. Life was then almost extinct. The water was at the time very little above freezing point, as large masses of ice were floating in it. The patient, however, soon rallied; but unfortunately he had to remain in his wet clothes for a consider-

able time; and even when he landed he could not at once obtain a change of dress. He did not at first experience any ill effects from this accident; but after some time he began to feel severe burning pain in the arms and legs; and when the pain subsided, he perceived numbness in the limbs and loss of muscular power. He soon afterwards returned to England, and was, during his passage, subjected to treatment by the ship-surgeon, who prescribed anodyne applications, as opium, aconite, etc. to the arms, and general tonics; but he derived no benefit whatever from the remedies used. On his arrival in this country, he consulted Mr. Snape, of Bolton-le-Moors, in Lancashire, who gave his opinion, that Faradisation would be the best means of restoring him, and accordingly sent him to me. On examination, I found the following morbid symptoms:—1st as regards the sentient nerves: there was a burning neuralgic pain, especially in the fore-arms and thighs, which very much increased towards evening and in the night; so that the patient was prevented from sleeping, and in consequence became much exhausted in the morning. There was also considerable anaesthesia, especially in the right hand and fore-arm, where the prick of a pin could not be felt at all; while on other parts it was only obtusely felt, and not as a prick, but as a mere touch. The sense of touch, especially in the right hand, was also much diminished. Finally there was a semi-paralytic condition of the arms; the patient could move them, but he had no power over the muscles; he could not grasp anything with force, and experienced great difficulty in writing. The contractility of the muscles was not diminished, as they answered readily to an electric current of moderate power, only the influence of volition over them had considerably decreased. The flexor muscles of the fore-arm were most affected. The general health of the patient was good, notwithstanding the loss of rest, and the wear and tear consequent upon great suffering.

After having examined the patient, I quite agreed with Mr. Snape as to the advisability of resorting to Faradisation,

and applied a rapidly-interrupted current of the first order of three centimètres power of my apparatus, to the skin for relieving the neuralgic pain and the anaesthesia; and an extra-current of four centimètres to the weakened muscles, in order to restore their power. The following were the effects of this treatment:—The pain, which was very severe at the time the patient came to me, disappeared during the first application; and he slept soundly the following night. The pain returned in the morning, although in a lesser degree; and after a few more applications, in which I modified the intensity of the current and the duration of the operation according to the necessities of the case, it was entirely subdued. The anaesthesia also yielded rapidly to the means employed. After three operations, the patient was again able to feel distinctly, not only the prick of a pin, wherever I applied it, but also the mere touch of blunt instruments; and when he left town, after having been under my care for six days, he was quite free from pain, the anaesthesia was gone, the sense of touch was again normal, and the muscular power had returned. I have not seen him since; but Mr. Snape has kindly written (Nov. 12) to say, that the effects of the treatment have been permanent, and that the patient returned to Canada some time ago, in perfect health.

2. Case of Loss of Voice.

A nurse-maid, aged 21, came under the care of Dr. Savage, at the Samaritan Free Hospital, in February 1858, having lost her voice a month before. There were no signs of inflammation or of ulceration of the mucous membrane of the larynx, but the affection consisted of loss of power in the recurrent nerve, and the muscles animated by it. No medicine was given, as Dr. Savage was anxious to see the effects of Faradisation in such cases. I directed the Faradic stimulus to the terminal branches of the recurrent

nerve, with the result, that after the first operation, the normal sound of the voice sometimes returned in the course of whispering; after the second application, the improvement was very striking, and two more were sufficient to completely restore the voice. French Physicians have, in such cases, directed the poles to the tongue, the neck, and the face; with beneficial result to the voice, but producing severe headache by the application; while Faradisation of the recurrent nerve is devoid of any such inconvenience.

3. Case of Paralysis from Apoplexy.

Jane S., a cook, aged 35, was under the care of Dr. Alderson, in St. Mary's Hospital, in July 1857. She had had an apoplectic attack fifteen months before, in which she lost her consciousness, and the use of the left arm and leg. The latter soon regained some power; but the deltoid muscle, the extensor of the forefinger and all the muscles of the thumb were still paralysed when I first saw her; they were quite flaccid, and their bulk had considerably diminished. She was not able to wash, cook, or do needle-work. When I directed an extra-current of five centimètres' power to the paralysed muscles, they showed very little excitability. After five operations, the deltoid muscle was very much improved, so that the patient could again raise the arm to a right angle with the body; but the muscles of the forefinger and the thumb required a longer treatment. I attended the patient for about a month, after which she left the hospital, being again able to return to her business.

4. Case of Loss of Power, Neuralgia and Amenorrhœa.

Mrs. D., aged 42, pricked the forefinger of her left hand with a needle. This induced considerable pain, of which she did not at first take much notice; but as the finger soon

became much inflamed, she applied for medical advice. Notwithstanding the treatment she underwent, the inflammation increased, gangrene ensued, and at last amputation of the finger became necessary. This operation was performed by Mr. Spencer Wells, on the 23d of December, 1858. Three months elapsed before the stump was healed, as at first the pus was of a very bad character; and the secretion only improved after repeated cauterisation with nitrate of silver. When the cicatrix had at last been formed, it appeared that the patient had entirely lost the use of her hand, and she was then sent to me by Mr. Spencer Wells. When I first saw her, the fingers were extended and quite stiff; flexion and lateral movements were impossible. The forearm could only with difficulty be bent, and every movement of it was painful. Numbness was felt in all the fingers, and pain in the elbow was complained of. The stump, which had a livid colour, was extremely sensitive, and at the slightest touch of it the patient almost fainted. Besides this, she showed that peculiar symptom which is by no means rare in persons who have undergone an amputation: that is, she felt pain in the removed part, which increased towards evening. Otherwise she was in fair health, with the exception, however, that she had three years before, after a difficult labour, lost the catamenia, and, in consequence of this, she suffered from headache for a few days every month. I directed a current of the first order of four centimètres power to the left arm, the positive pole being alternately applied to the trunks of the median and ulnar nerves. Direct Faradisation of the muscles, and more especially of the interossei and lumbricales, was also performed. Immediately after the first operation, the patient was again able to bend the second and third phalanges of the fingers; and after three more applications, she was no longer troubled with pain in the removed finger. After the ninth operation, the catamenia reappeared. The restoration of the mobility of the first phalanges of the fingers required a somewhat longer treatment, as in them the affection was very obstinate; but after

some weeks this was also attained. At the same time the stump had assumed a much healthier colour; it was also firmer, and not so sensitive to touch as before. The catamenia continued afterwards at regular intervals.

5. Case of Wry-neck and Dysmenorrhoea.

On the 21st of November, 1859, I was consulted by a lady, aged 34, who had for about eighteen months suffered from spasmodic contractions of the left trapezius and cleidomastoid muscles. She observed the first symptoms after a violent emotion, caused by witnessing an accident in the street. At first the contractions were slight, and only occurred if the patient was excited, when in society, or suddenly spoken to. The affection gradually increased and became more troublesome. When she carried the fork or spoon to the mouth, the head at once turned away; at the same time a feeling of numbness, stiffness and fatigue was observed in the left side of the neck; but there was no pain, unless the contractions were unusually violent. She was at first treated by blisters to the neck, and purgatives, but she did not experience any benefit from them. At a later period of her illness, she consulted the late Dr. Todd, who prescribed the valerianate of zinc, in two-grain doses, twice a day; and she thought she had observed a slight improvement after it; but as, after having taken it regularly for two months, she was still a severe sufferer from her complaint, by the advice of Dr. Todd she came to me for Faradisation.

On making an examination of the muscles of the neck, I found the left trapezius and cleidomastoid somewhat rigid. The corresponding muscles on the right side did not show any signs of atrophy, but on applying the Faradic current to the two sets, the excitability of the fibres appeared greater on the left than on the right side; and the sensation excited by the application of the current was also more considerable on the left side. While I was examining the muscles, violent

spasms occurred in those affected; the head was convulsively thrown towards the left side, and all the patient's endeavours to keep it straight were of no avail; but by Faradisation of the antagonistic muscles, I at once succeeded in restoring the equilibrium between the two sets, and calming the spasms. I afterwards practised Faradisation of the skin, which I had previously found to be of great benefit in hysterical convulsions. The influence of emotion in exciting the spasms was most striking in this case. The patient suffered far less when she was alone, and if the room was darkened; but if she thought herself observed and the object of wonder or pity, she became much worse. She had, therefore, almost retired from society, and was only with difficulty induced to leave her rooms, from which she used to shut out the light. As eating was troublesome, she took as little food as possible, and, in consequence of this, and the melancholic turn of mind caused by her affection, her general health had become impaired, and the catamenia were very scanty. Faradisation was continued for three days, when the catamenia appeared before the time, and unusually abundant, so that the treatment had to be discontinued for a week. After that it was recommenced, and in a month's time the equilibrium between the two sets of muscles was so entirely re-established, that not a trace of the spasms was observed, even when the patient was excited in any way. The general health also improved in consequence of the changed mode of life now adopted by the patient, and the catamenia again became normal.

6. Case of Loss of Power and Neuralgia of the Fore-arm after Fracture.

M. W., a married woman, aged 46, suffered a fracture of the lower end of the radius of the right arm, in consequence of a fall. She became an out-patient at the Middlesex Hospital, where a bandage was applied; but by the carelessness of the patient, this unfortunately got out of order, and the

bone healed crookedly in consequence. It was then again fractured by a surgeon, and put straight; but the cure was now protracted over ten months; and when the bone was at last healed, the arm remained painful and entirely useless. She became, some time afterwards, an out-patient at the Samaritan Free Hospital, and was sent to me by Dr. Henry G. Wright. Faradisation of the median and ulnar nerves was twice performed, when the pain was entirely gone, and the arm could be used as before.

7. Case of Facial Paralysis.

Mr. F., a barrister, aged 35, was, in consequence of having been exposed to a draught of cold air at a railway station, affected with paralysis of the left facial nerve. The physiognomical expression had entirely vanished from that side of the face. The patient was not able to laugh, to frown, to whistle, or to shut his eye, which latter appeared staring and protruded. The angle of the mouth was depressed, and drawn towards the opposite side; that of the sound side being higher and drawn towards the ear. The cheek was flaccid and loose; and eating and speaking was troublesome. The patient was sent to me by the late Dr. Todd, whom he had consulted six months after the commencement of the affection. I directed the Faradic stimulus to all the paralysed muscles individually, with the effect that the patient regained his normal physiognomical expression, after a fortnight's treatment.

8. Case of Numbness and Loss of Power in the right Leg.

Count Z., aged 63, had, about twenty years ago, suffered from a rupture of the capsular ligament of the hip-joint in consequence of an accident, and had never quite recovered from the effects of it. He complained of great numbness and stiffness in the right leg, the muscles of which were not nearly so well developed as those of the left, so that

he had much difficulty in walking. Sir James Clark, whom he had consulted in June, 1857, believed that Faradisation would be the best means to restore him, and sent him to me. The patient was very considerably improved by a short treatment, but as he left town soon afterwards, the cure was not complete.

9. Case of Rheumatism in the Shoulder.

Dr. T., aged 47, had been a sufferer from rheumatism in the left shoulder for more than seven years, when he came under my treatment (1857). He had tried almost every means for the relief of the pain, which, especially in autumn and winter became very troublesome; he had also used galvanism, but without any beneficial effect, and wished to try Faradisation as a "dernier ressort." After two operations, the pain disappeared, and has not since returned.

10. Case of Paralysis from Apoplexy.

R. V., Esq., aged 57, of originally vigorous and plethoric constitution, but now somewhat debilitated by an antiphlogistic treatment, had been in fair health, until six months before I saw him, when he had an apoplectic attack, accompanied with loss of consciousness for three hours, and paralysis of the right side of the face, the tongue, the right arm and leg. The face regained its normal appearance three months after the attack, and the muscles of the arm also improved; he wrote, however, only with a trembling hand, and could not well manage to hold the spoon, fork, and knife; but he chiefly complained of great difficulty in walking. His judgment and memory were not disturbed, and there was no pain in the head nor the limbs; the speech was likewise no longer impeded. The skin of the right arm and leg was cold and flaccid, and the pulse weaker in the right than in the left side. There was a feeling of numbness in the

right arm and leg, where the prick of a pin was only indistinctly felt. The muscles at the same side were relaxed and diminished in bulk, especially the extensors; there was no rigidity either in the lower or in the upper extremity. This state of the muscles, together with the fact that six months had elapsed since the attack, justified my opinion that intracranial irritation no longer existed, that the cicatrix had been formed, and that the seat of the paralysis was no longer in the injured brain but in the muscles, impaired by their long disuse. In such cases Faradisation is almost always useful, and I therefore resorted to this treatment. After sixteen operations, the bulk of the muscles was increased, the circulation was reintegrated, and writing as well as walking had become much easier than it was before.

11. *Case of Neuralgia, Loss of Power in the Arm, and loss of Voice.*

M. K., aged 40, a needlewoman of feeble constitution, had for a long time suffered from neuralgia in the right arm, and also from loss of power in the muscles, so that she was entirely unable to work. She became an out-patient at the Samaritan Free Hospital, under the care of Dr. Henry G. Wright, who sent her to me. After four operations, in which I directed an extra-current of five centimètres to the weakened muscles, and a current of the first order of four centimètres to the skin for relieving the neuralgia, she was greatly improved; but when she came to me the next time, she had, in consequence of having got wet through, entirely lost her voice. I thereupon directed the Faradic stimulus to the recurrent nerve, with the effect that the voice returned at once. By further treatment, the neuralgia and loss of power were entirely cured.

12. *Case of Lumbago.*

This patient, a gentleman aged 42, was sent to me by Dr. Protheroe Smith. He suffered from the usual symptoms

of lumbago. Faradisation of the skin of the back and the side relieved the pain in a very short time.

13. *Case of Wry-neck.*

On the 6th of May last, I was consulted by a brewer from Hampshire, aged 40, a strong healthy man, who, with the exception of what he described as bilious head-ache, from which he now and then suffered, had never been ill before the present affection came on. In February last, he first noticed that his head was inclined to fall towards the left side. He was unable to assign any exact cause, but mentioned that shortly before he first fell ill, while driving, his horse fell and broke his neck, which gave him a great shock. He had also had much anxiety lately, and admitted having slept on a damp couch shortly before being attacked by the spasms. The latter affected the left side of the neck, and gradually became so much worse that he was constantly obliged to hold his head in the right position with the left hand, so that the latter became in a measure useless. He was no longer able to dress himself. His food was obliged to be cut for him, as he could not hold the knife and fork. He was also troubled at night, for if he attempted to sleep on the side as he had been accustomed to do, his head began to tremble, so that he was obliged to lie straight on his back. He could then sleep well, and generally felt better in the morning than at other times of the day. The treatment at home consisted of laudanum, calomel, blisters, leeches, and cupping; but it had no beneficial effect whatever. He then came up to town to consult Dr. Lichtenberg, of Finsbury-place, who prescribed a veratrine ointment to be applied to the nape of the neck, and sent him to me that the suffering part might be subjected to Faradisation.

On examining the neck, the left trapezius and cleidomastoid were found more strongly developed than the

corresponding muscles of the right side which were soft and flabby. After the first operation, the patient felt easier, and could hold his head straight for a short time without being obliged to support it with the hand. The improvement was so rapid that, after a few other applications, the patient could feed and dress himself without aid. He could again sleep on the side, without being disturbed by trembling of the head. I was therefore hopeful of a perfect cure; but the patient, being anxious about his business, felt so unhappy in London, that he left town before he was quite cured, after having stayed here less than a week.

14. Case of Deafness.

This patient, who is still under treatment, is a married woman, aged 37, mother of three children, of a very delicate constitution and a disposition to consumption. The beginning of her deafness dates as far back as 1849, and the only cause she can assign for it is cold. There has never been any inflammation of, nor discharge from, the ear. She has been treated for a long time at St. Thomas's Hospital, but without any benefit. Dr. Wright, who had previously seen good results of Faradisation at my hands in cases of deafness, sent the patient to me. I could not discover any signs of disease in the temporal bone, in the Eustachian tube, or in the membrana tympani; and it is just such cases of deafness, which are of very frequent occurrence, in which Faradisation generally produces excellent results. The patient was placed in a recumbent position, the external opening of the ear was filled with warm water, and a moistened conductor connected with the positive pole was applied to the nape of the neck, while the negative pole was made to touch the water in the meatus. If the operation is performed in this manner, the whole extent of the membrana tympani is brought under the influence of Faradisation. I applied an extra-current of one centimètre power. Considering the long duration of the affection, the

result of the treatment was very remarkable. The patient who, when she came to me, did not notice any questions I addressed to her, nor heard any sounds produced, heard, on leaving my house, after the first application, a dog bark; and on turning into Oxford-street, she heard the whistle of an omnibus conductor. Since then she has steadily improved, so that it is now (Nov. 15.) easy to converse with her, although she is not yet quite cured. At the same time the catamenia, which were very scanty, have become more abundant and of a better character.

In conclusion, I will remark, that in treating disease by means of Faradisation, it is of the utmost importance that the dose of the remedy should be suitable to a given case; as by an improper selection of current the effect produced may be contrary to that which is desired. Every one is agreed, that the action of ten drops of laudanum in the system is different from that of a hundred, and that different doses have to be given if it is intended to procure by this remedy sleep, or cessation of pain, or to stop diarrhoea, etc. The same applies, even in a higher degree, to the Faradic stimulus, to which every organ has a different sensibility; besides which there are variations according to age, sex and constitution, which must be carefully attended to.

In the course of varied experience, I have found, that the action of Faradisation is generally confined to the part which is brought under its direct influence; but there are two remote effects produced by it in certain cases, independently of the part of the body to which it has been applied, and of the nature of the affection for which it was used. These are, first, an emmenagogue effect in women, and secondly, sleep is induced in persons affected with insomnia. Cases of amenorrhœa, dysmenorrhœa, and sleeplessness, may, therefore, by this means be cured.

It has sometimes been objected to Faradisation that its

results were only temporary; and Sir Henry Holland lately remarked, that its therapeutical value would be greatly increased if it could be shown that the curative effects obtained by it were permanent. My experience, as well as that of some continental physicians, goes far to prove that relapses after Faradisation are very rare, and generally only occur in such patients as were unable to continue the treatment until a perfect cure was brought about. Amongst many cases in my practice, in which the cure has been permanent, I will only mention two treated by me four and three years ago: one of rheumatism of the shoulder, which, although it had lasted seven years, yielded to two applications (Case 9); another of severe sciatica of three years' standing, in a gentleman who was sent to me by Sir James Clark, and whose case I have described in my "Treatise on Medical Electricity;" in neither of which has there been any return of the affection.

18, Bryanston-street, Portman Square,
November 1861.

ON THE

SOUNDS CAUSED BY THE CIRCULATION OF THE BLOOD.

BEING

A THESIS READ IN THE UNIVERSITY OF DUBLIN FOR
THE DEGREE OF M.D., AT THE WINTER
COMMENCEMENT, 1860.

By ARTHUR LEARED, B.A., M.D. DUB.,
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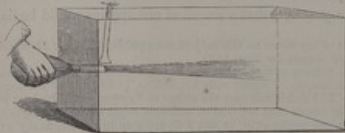
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be changed into a sound of another species. And this is the case; for the normal first sound of the heart is under certain pathological conditions converted into a murmur; and on the other hand, a murmur thus produced may again give place to the natural sound. In short, all the sounds may be regarded as modifications of a typical sound, because under varying circumstances they are convertible into each other.

The first thing to be established is, that rapid movements of a fluid produce sound, independently of any action, as friction or vibration, upon the vessel in which the fluid is contained. This was proved by the following experiment:—A horizontal reservoir, one foot and a half long, eight inches wide, and as many deep, the end of which was perforated at its centre by a brass tube, was provided. This tube had an internal diameter of half an inch; one of its extremities projected two inches into the reservoir, while to the shorter external part of the tube an india-rubber bottle was adapted. When the reservoir was filled with water, a column of it could be forcibly projected in an intermittent manner into a body of water in a state of rest, by alternately compressing and relaxing the india-rubber bottle grasped in the hand. If during these actions the end of a solid stethoscope was introduced beneath the water close to the point where the jet issued from the tube, but so as to avoid the current, a blowing sound was heard through the stethoscope, loud or weak in proportion to the force employed in compressing the bottle.* The blowing

* The nature of the apparatus and position of the stethoscope will be better understood by a glance at the woodcut.



I varied the experiment by employing a perpendicular reservoir—the

sound, *bruit de soufflet*, might also be heard in all parts of the reservoir. If the stethoscope was so held that the jet of water impinged upon it, a louder sound, but still a distinct *bruit de soufflet* was produced.

In this experiment the stationary water was forcibly penetrated by the moving column, while, owing to the mobility of the fluid, sufficient friction occurred between its particles to give rise to low-pitched sounds—murmurs. The size of the reservoir precluded the possibility of friction of the water against its sides being concerned in causing sound.

In order to test the effect of viscosity of the fluid upon sound so produced, the experiment was modified as follows:—The apparatus having been filled with glycerine instead of water, the same motions were performed. The first thing obvious on listening with the stethoscope was the comparative difficulty of producing sound. But when the india-rubber bottle was compressed very strongly, a faint sound, resembling the first sound of the heart, was heard near the mouth of the tube. When, however, the moving column was allowed to strike the stethoscope, a loud sound, exactly resembling the heart's first sound—and therefore presenting a striking contrast with the sound produced by water under similar circumstances—was heard.

In this experiment, the divisibility as well as the mobility of the fluid was greatly diminished by its increased viscosity and specific gravity. The impact between the fluid forcibly expelled from the tube and the fluid in the reservoir was therefore more complete than in the case when water was employed. Hence a sufficient concussion occurred between the opposing particles to give rise to a sound of a very different character from that formed by friction between the particles of water.

It was perfectly obvious, in both experiments, that the

india-rubber bottle and tube being attached at the bottom, and a stethoscope being arranged so as to perforate the reservoir; but the pressure of the fluid greatly increases the difficulty of producing sound. I have been always careful to eliminate any extrinsic sound, such as that from compressing the bottle, from consideration.

sounds were formed in the fluid external to the tube; in the case of the water, because the murmur, although heard from transmission when the stethoscope was applied to the tube, was much louder beyond it, and because it will be afterwards shown that water, moving under pressure in a tube in which there is no obstruction, does not give rise to murmur; in the case of the glycerine, because no sound whatever could be heard in the tube, although a sound was heard external to it.

Even when the jet was allowed to impinge against the stethoscope, the results clearly showed the very different action of water and glycerine. In both cases there was increased loudness, but the characteristic sound was in each case preserved.

Two important principles were established by these experiments. First, that sounds may be formed by the motions of fluids only. Second, that the quality of a sound thus formed is materially influenced by the nature of the fluid.

The sounds formed by the circulation of the blood are produced on principles similar to those detailed in these experiments. I shall, therefore, for convenience, and as conveying their true nature, designate them as blood sounds.

Blood sounds are divisible into two classes—

Sounds which give the impression of a shock.

Sounds which give the impression of a current.

Shock sounds (*Bruit de choc* of French authors) comprise the normal sounds of the heart, and certain abnormal sounds formed in aneurismal sacs.*

Current sounds are formed in the heart, in aneurismal sacs, and in the larger arteries and veins. These sounds are

* The shock sounds of aneurism have been regarded by some authorities as being merely the heart's sounds transmitted, but the best authorities (e.g. Skoda, Stokes, Gendrin, &c.) hold that they are independent sounds; nor do I think that any careful observer will arrive at a different conclusion. I cannot, however, with Skoda, regard as independent formations shock sounds heard in rare cases in apparently healthy arteries distant from the heart, even the crural and bronchial. I agree with Dr. Stokes, ("Diseases of the Heart and Arteries," p. 252,) that the sounds in question are more probably transmitted.

all abnormal; they are extremely diversified, some closely resemble shock sounds, others are aptly compared to the blowing of bellows, to rasping, sawing, cooing, &c.

Although well-marked examples of the different kinds of sound cannot possibly be confounded, it is sometimes difficult to determine to which class a particular sound belongs; the first sound of the heart is frequently replaced by a murmur only to be detected by great attention, and this indicates a close alliance in the mechanism of the two kinds of sound.

Pressure is a condition of material influence, whether as regards the production of sound in rigid tubes or in living vessels.

Current sounds are never produced in a tube if the fluid moves through it under sufficient pressure. If the pressure is insufficient, sound is generated by friction between portions of the fluid moving with more rapidity than others. It seems probable, that in the case of a fluid moving under low pressure the outside portions of it are detained by friction with the interior of the tube, while the central portions in consequence move with increased rapidity.

The above may be easily demonstrated by the following experiment:—Let a tube some feet in length be inserted in a perpendicular manner in the bottom of a large cistern, and let the other extremity of the tube be immersed in water. If the cistern be filled with water, and considerable pressure is exercised on it as it flows through the tube, little, if any, sound is produced; as, however, the water in the cistern diminishes, a low continuous current sound is developed.

A partial obstruction at any part of a tube produces diminished pressure beyond the obstruction.

If during the flow of water in the preceding experiment the caliber of the tube is contracted at a given spot, a murmur is formed immediately below the point of contraction. It is plain that in this case the murmur is caused by the rush of water from the contracted part of the tube into a part in which the area is undiminished. Owing to the immersion of

its lower extremity, the tube remains full, and the water rushing from above the obstruction, in diminished volume but with increased rapidity, penetrates the more slowly moving water below it. A murmur (in this case continuous) is thus produced on the same principles as in the experiment, in which a jet of water was projected into the full reservoir.

If these experiments with the cistern and tube are repeated, using fluids of various degrees of viscosity instead of water, it will be found that the difficulty of producing sound bears a direct relation to the viscosity of the fluid. If we apply these facts to the living body, we find that in a state of health the pressure on the blood bears such a relation to its viscosity, that, except at the heart, no sound is produced by its circulation. When, however, the blood's viscosity is notably diminished, although the quantity of blood is normal—and consequently its pressure unimpaired, as happens in anæmia—murmurs are produced.*

On the other hand, if while the blood retains its proper viscosity its pressure is much diminished, the same results follow. This is proved by the murmurs heard in the heart and larger arteries in cases of excessive hæmorrhage.

Varieties in murmurs are due to special circumstances, but the general conditions under which venous humming and the blowing sound of an aneurism are formed are precisely the same.

Continuous murmurs are commonly heard in the jugular veins of the anæmic, and the same kind of murmur can easily be produced in the healthy by pressure, as of the stethoscope

* It may be objected, that in some well-marked cases of anæmia no murmurs are formed. But the objection can be answered in at least two ways: 1. An increase of pressure may compensate for decrease of viscosity. Venous humming in the neck disappears when the head lies below the level of the thorax; and when the person is standing, a deep inspiration produces the same effect, which is obviously due in both instances to increased pressure. A congested state of the *vena cava* would, on the same principle, prevent *bruit de double* from being at all developed. 2. Although a thin condition of the blood is a common result of anæmia, it is possible that in some cases the lesion may mainly consist in simple diminution of the red particles, with little or no loss of fibrin.

during examination. The caliber of the vein is by this means diminished locally, and a murmur is formed, as in the experiment with the contracted tube. In these instances the *proximate causes* of the sounds—diminished viscosity in the one case and diminished pressure in the other—are very dissimilar; but the *immediate cause*, increased mobility of the blood, is in both identical.

We are now in a position to comprehend the formation of the sounds of the heart. If the motion of the blood through the heart and arteries were equable, no sounds whatever would be produced in a state of health. But the blood is by the action of the heart thrown into impetuous and interrupted motions, and these give rise to normal sounds, known as the first and second sounds of the heart; both are formed in the outlets of the two great vessels,* and the mechanism of both is essentially the same.

THE FIRST SOUND coincides with ventricular systole, and is caused as follows:—Blood having been forcibly driven from the ventricles into the aorta and pulmonary artery, comes into forcible contact with blood in these vessels, which, supported by the semilunar valves, had attained a state of momentary repose.† The impact between the fluid in motion and that in a state of rest gives rise to the sound.

The well-known thumping sound heard during the action of the common forcing pump is chiefly due to an analogous cause, that is, to the impact between water thrown into violent motion and stationary water in the discharge pipe.‡ But the

* On this point, the assertion of so competent an authority as Cruveilhier is worth quoting. In his examination of the remarkable case of an infant born with the heart exposed, he found that the maximum intensity of both sounds was at the same place—the base; and he observes, "hence it is at the base of the organ we are to look for the cause of these sounds."—Cruveilhier, *Gaz. Médicale de Paris*, 1841.

† I shall afterwards show that there can be little doubt that a secondary propulsion of blood occurs from the elastic contraction of the arteries constituting their systole. But this does not affect the general truth of the above, since the blood resting immediately upon the valves must remain almost, if not absolutely, at rest.

‡ In this instance the great force employed, and the great pressure upon the water resting upon the valve, make amends for want of viscosity.

analogy between the conditions causing the heart sound and those causing sound in the experiment with glycerine is more complete than might be at first supposed. The column of glycerine forcibly driven through the glycerine at rest does not, owing to its viscosity, diffuse itself so as to cause friction between its molecules and those of the surrounding fluid sufficient to produce murmur, and an imperfect shock sound results. But enclosure in a tube of both the moving and stationary blood, and their separation by valves, greatly favours the development of sound on the same principles.

Four conditions are necessary for the production of the perfect first sound:—

1. Sufficient viscosity of the blood.
2. Sufficient force in the circulation.
3. Sufficient pressure upon the blood.
4. The absence of obstruction at the outlets of the heart.

When all these conditions are fulfilled, the result is a true shock sound. If, however, the first condition, viscosity, is wanting, we find in place of it the blowing sound of anemia, as already mentioned.

The force of the adult left ventricle has been variously stated, but the estimate of Valentin, that it is sufficient to overcome a resistance of four pounds, seems probable. It is, at all events, certain, that when the force of the heart is much diminished, as occurs in certain fevers and in syncope, the first sound becomes impaired, or is altogether lost.

The fact that pressure upon the blood prevents murmur by preventing friction need not be here repeated. A common cause of diminished pressure is incompetency of the intracardiac valves, since regurgitation reduces the volume of blood sent into the outlet vessels.

The fourth condition, absence of abrupt interference with the current, is resolvable into the third. For any obstruction at the mouth of the aorta, or pulmonary artery, whether it be contraction of its caliber or the projection of an

atheromatous deposit, must cause diminished pressure in the vessel beyond the obstruction. The principles upon which *bruit de soufflet* is then formed have been already detailed.

It is highly probable that a deviation in any one of these conditions, although too slight to destroy the character of the sound, causes a corresponding modification of it. The water and glycerine used in separate experiments respectively represented exaggerated conditions of thinness and viscosity of the blood, and I have obtained intermediate results by employing fluids of medium viscosity. But the delicate relation between pressure and viscosity that exists in the living body was wanting in the experiments.* A close study of this relation will alone throw light on the modifications of all the sounds produced by the circulation. Every one accustomed to study the heart's sounds must have observed wide variations in these sounds, even regarded as within the limits of health. For instance, in the robust subject we frequently hear sounds of a dull and muffled character compared with the loud and resonant sounds in the delicate. These facts cannot be explained on any prevailing theory of the heart's sounds, but are entirely in accordance with my views—that unusual pressure and viscosity, by which are implied an abundance of blood rich in fibrin, as would occur in a vigorous subject, cause the sounds to be relatively low. Probably impairment or loss of the first sound in certain fevers in which the fibrin of the blood is known to be in excess, is partly due to consequent increased viscosity. The first sound is always affected in fever before the second, and this circumstance, as well as the fact that the second is much less subject to alterations than the first, will be afterwards seen also to depend on the mechanism of the sounds at present advocated.†

* I have laboured hard to produce an artificial circulation which should fulfil all the requisite conditions for the formation of sounds like those of the heart, by means of an india-rubber apparatus, but hitherto without success as regards the first sound. The delicacy and nicety of adjustment necessary in the valves form the great difficulties.

† It was my intention to have considered the bearing of my views upon the various pathological alterations of the heart's sounds, but I found the

THE SECOND SOUND occurs during diastole, and in its mechanism closely resembles the first. The blood having been driven with much force into the aorta and pulmonary artery, a portion of it recoils, but is checked in its rapid descent towards the heart by the semilunar valves. The sound is caused by the concussion thus induced, the force of which is, however, by no means sustained by the valves alone, for they are thoroughly supported by the ventricles and their contents. This is obvious since there can be no approach to a vacuum in the heart. The valves are to be regarded as separating media which do not themselves sustain the force of the descending blood. A valve thus supported is known in the arts as an equilibrium valve.

An experiment at hand in most houses demonstrates the principle on which the second sound is formed. When a cock, attached to the lower end of a perpendicular pipe of some length, through which water is flowing from a cistern, is suddenly turned, a loud jarring sound is heard. It is caused by a concussion* in the water from the sudden arrest of its onward flow. The semilunar valves are here represented by the plug of the cock, and, allowing for the difference between rigid and flexible materials, the conditions are very similar, since the elastic reaction of the vessels effects a pressure on the blood which is effected in case of the water by length of the pipe. If, then, the pipe and cistern are capable of yielding a sound

subject altogether too extensive for the present essay, and mean to return to it on a future occasion. Meantime, I venture to assert that I can offer rational explanations of many phenomena hitherto difficult of comprehension. Certain physiological points also require notice; in reference to the relative loudness of the second sound of the foetal heart compared with its first sound, I would refer the reader to my observations in the *Medical Times and Gazette*, November 3, 1860.

* As the closest contact must exist between the water and the barrier instantaneously presented to its egress from the pipe, the sound cannot be caused by an actual stroke of the water against the barrier, although it is much exaggerated by the metallic resonance of the pipe and cock. I explain the sound by a relaxation of molecular cohesion in the fluid owing to rapid motion, and that, from its almost incompressible nature, a concussion occurs between its particles when suddenly brought to a state of rest, the sound being naturally most intense near the obstruction. Whatever explanation is adopted will not affect the analogy between the mechanism of this remarkable sound and the second sound of the heart.

which may be heard at a considerable distance, it cannot be wondered at if the heart and its vessels, on the same principle, give rise to sounds audible through a stethoscope or by direct contact with the body.

If the cock is only turned so as to allow even a small portion of water to pass through, a rushing sound (in this case continuous) results. The change of the normal second sound into a murmur from incompetency of the valves is thus demonstrated.

The second is a sharper and shorter sound than the first, because the separation between the opposing blood is definite and complete. We have seen that in case of the first sound several conditions are necessary to ensure sufficient molecular cohesion in the separate bodies of blood at the moment of contact, which must also be accompanied by considerable force. But the intervention of valves in the present case causes the conditions to undergo considerable modifications.

Less force is requisite. It is for this reason that loss of power in the heart affects the first sound so much sooner than the second. This has been already dwelt upon.

Less pressure on the blood is necessary; and hence, while the first sound is changed by excessive hemorrhage into a murmur, the second sound merely becomes fainter.

Viscosity is not a necessary condition; hence in anæmia the second sound never degenerates, like the first, into a murmur. On the other hand, a condition peculiar to the second sound is, that the valves shall be competent. If the closure of the aortic valves is imperfectly performed, the well-known *bruit* from aortic regurgitation occurs, and this may completely supplant the normal second sound.*

* As each sound of the heart is formed in duplicate, it might be supposed that when a morbid change only occurred in the portion of sound emanating from one side, the compound sound would always resolve itself into two parts—a normal and an abnormal—heard coincidentally, which, however, is not the case. But structure and position allow of little doubt that the left side of the heart is mainly concerned in forming the sounds, and it is certain that, owing to greater liability to organic changes, the same side is far more productive of murmurs than the right. Well-marked changes occurring in the sounds

The absence of any considerable obstacle in the great vessels is necessary; and hence the change of the second sound into murmur from encroachment upon the aorta by a morbid growth or deposit, the semilunar valves remaining healthy, is possible.*

I succeeded in producing a sound closely resembling the natural second sound by the circulation of water through the left side of the heart and portion of the aorta removed from a calf. The aorta was connected by means of a short glass tube with another of india-rubber, while connexion with the ventricle was established by means of a screw flange adapted to a brass tube, to which an india-rubber tube was also attached. The circle was completed by attaching the free ends of the india-rubber tubes to an apparatus provided with valves in imitation of the heart, by the alternate compression and relaxation of which circulation was maintained.

M. Bouillaud also succeeded by the following arrangement—"he attached one extremity of a short glass tube of an inch bore to the aorta, immediately *below* the semilunar valves, and to its other end a bladder full of water. Another tube, four feet long, was connected with the aorta *above* the semilunar valves. The bladder was suddenly compressed at intervals, so as to jerk up the fluid, and each time that the pressure on the bladder ceased, and the column of liquid was allowed to fall back upon the valves, a sound very analogous to the second sound was heard."

A somewhat similar experiment was made by Dr. Corrigan, but with a different result:—He removed the heart and ascending aorta of an ass, and then "tied it on the end of a leaden tube of corresponding diameter, about five feet long; about two or three inches of the aorta then being free from the lower extremity of the tube. In this state, holding the sides of the aorta together below, he filled the tube with

of the left side therefore absorb, as it were, the faint normal sounds proceeding from the right side.

* See case by Dr. Cockle, *Brit. Med. Journal*, April 25, 1857.

water, and then placing the thumb on the upper end, so as to close it, the fingers were withdrawn from the lower end, and, the upper end still remaining closed, the external pressure of atmospheric air kept the two sides of the aorta below together, and no fluid escaped. The ear was then applied to the lower end of the tube, close to the aorta, and the thumb being suddenly withdrawn from above, the whole column of fluid came suddenly down and distended the aorta and valves, and yet there was no sound whatever similar to the second sound produced." He then "attached a piece of sounding-board to assist the ear, and the result was the same as before."

I give these extracts from Dr. Bellingham's work on Diseases of the Heart, for the purpose of explaining why M. Bouillaud's and my experiment succeeded, while Dr. Corrigan's failed, because the failure is of itself very instructive.

In my experiment a short glass tube formed the connexion between the aorta and the india-rubber tube, I had, therefore, an opportunity of seeing that the presence of even a few air bubbles completely prevented the sound. The sound was only properly developed when all air was excluded from the apparatus, and the mode of M. Bouillaud's experiment was such as to ensure this exclusion. Now Dr. Corrigan states that he held the sides of the aorta together until he had fixed them in that position by removing atmospheric pressure from the water in the tube. But it is quite certain that below the point where the sides were in contact a small quantity of air was lodged between the valve and the aorta, and this air would as certainly prevent the formation of sound, on the principles on which it is formed from turning a cock; indeed, an invention to prevent noise from the latter cause consists in attaching a short perpendicular tube, closed at the top and containing air, to the discharge pipe, above, but near the cock. This air acts as an elastic cushion, and breaks the force of the concussion, which would produce sound. Now, supposing the second sound of the heart to be the result of tension of the valves by the blood, the air in contact with them, in the experiments with water,

would only increase the sound; whereas its effect in small quantity is to destroy it. Nothing can show more clearly than this, that, although in accordance with received opinions, the second sound depends on closure of the semilunar valves, it is not formed by vibration of the valves, but by a concussion in the blood itself. Moreover, the possibility of the latter in case of the second sound proves the same possibility in case of the first sound, and should be a sufficient answer to those who allege that no concussion can occur between blood issuing from the ventricles and that in the vessels.* It has been previously pointed out, that one condition—force—is here in excess as compared with that which occurs in the formation of the second sound, in which the more complete resistance presented by the closed valves makes amends.

The first sound is usually loudest over the apex of the heart, and the second over the commencement of the aorta, but it is also heard very clearly in the track of the aortic arch. This accords with the present explanation; for since the first sound is formed by the meeting of blood expelled from the ventricles with that in their outlet vessels, it is easily conducted downwards by blood still in the ventricles, and is at the same time intensified by their solid walls; while contact of the apex of the heart with the interior of the chest causes the corresponding external point to be that at which the sound is most distinctly heard. The second sound, on the other hand, is formed at a time when no connexion exists between the blood in the ventricles and that in the vessels; its conduction downwards is therefore interfered with, but it is heard with much distinctness for some distance in the track of that vessel at whose base it is mainly formed. The relation of inferior and superior—names proposed for the sounds of the heart by M. Pigeaux—is thus accounted for.

* This objection has been made to my explanation of the first sound by a reviewer in the *British and Foreign Medico-Chirurgical Review*, April, 1860.

It is well known, however, that the point of greatest intensity of the sounds occasionally varies in a remarkable manner: the second sound may be loudest over the apex, or the first over the base, &c., and these anomalies have been relied on as proving the complicated nature of the sounds—that, for instance, the second sound of the apex is due to a distinct cause from the second sound of the base.* But I can see no reason for such a supposition in these exceptional cases, which appear to depend on accidental circumstances connected with conduction of sound.

The occurrence of aneurismal sounds identical with those of the heart affords the clearest proof that shock sounds are not dependent on vibration of valves or muscular contraction, because neither of these agencies exist in the aneurismal sac.

It is impossible to understand how shock sounds could be formed by friction; but as friction between the blood and lining membrane of the orifice and parietes of the sac has been affirmed to be the cause of sound, I tried the following experiment, in order to ascertain the kind of motion which exists in the sac.

A glass globe of moderate dimensions, having a free communication with a short tube of the same material, so as to resemble an aneurism seated upon an artery, was provided. A tube of india-rubber was adapted to each end of the glass tube, while, to complete the circle, the other extremities of the india-rubber tubes were attached to an apparatus of the same material provided with a valve. By this arrangement an intermittent circulation could be maintained through the tubes and globe when filled with water. I observed that during systolic action the fluid in the globe underwent much less displacement than might have been anticipated. A slow eddy or revolution of the fluid in contact with the interior of the globe occurred, in a direction contrary to the motion of that in the tube, while the only active motion was at its neck. As the conditions are essentially the same, it was thus proved

* Skoda. Translation by Dr. Markham, p. 198.

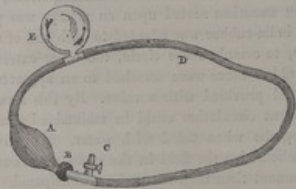
that the motions of blood in an aneurismal sac are restricted, and that no friction occurs sufficient to produce the sounds attributed to it.*

Aneurismal shock sounds appear to be only formed when the sac of the aneurism is well defined,† and the following is their true mechanism. Blood is forcibly driven by systole through a comparatively narrow orifice into a more or less globular reservoir filled with the same fluid in a state of comparative repose, the first sound is formed, by concussion, on principles already stated and which require no repetition.

The second aneurismal sound is formed precisely in the same way, but by a weaker influx of blood, which happens during diastole. The cause of this secondary influx has been much debated, but no explanation I have seen appears sufficient, and I offer that which follows.

In case of an aneurism situated on the aortic arch, the increased pressure which existed in the sac during systole is subsequently diminished by the loss of some of its contents, partly from the reaction of the sac itself, but mainly owing to the backward rush of blood towards the heart. But this

* The apparatus is here represented:—



The india-rubber apparatus to represent the heart is shown at *a*; *n*, the box containing the valve; *c*, the pipe provided with a cock for filling the system; *b*, the india-rubber tubes connected; *n*, the glass globe. The direction in which the water moves is shown by the bent arrow.

† Dr. Lyons believes that double impulse and sound are peculiar to distinctly sacculated aneurisms.—See *Dub. Journ. of Med. Science*, May, 1850.

blood is suddenly arrested by the semilunar valves, and a portion of it is—by the arterial systole or reaction, which is a consequence of previous distension by the systole of the heart—again forced upwards and into the sac, attended by the formation of a shorter shock sound—the second sound of aneurism. The valve is here an important agent, and sufficiently explains a fact which has been found so puzzling, that double sounds are almost confined to aneurisms of the upper part of the aorta. For it is plain that a force arising out of the elasticity of the vessel, whose point of resistance is the valve, would be operative only within moderate limits. Hence the secondary blood wave is rarely capable of producing sound in aneurisms situated beyond the limits of the aortic arch.

I have already hinted my belief that murmurs alone are produced in aneurisms which consist rather of a dilatation of the vessel than of a distinctly formed sac. This appears to me the explanation: all the blood contained in a mere dilatation is moved onwards with some velocity by the heart's systole, but it is penetrated by a more quickly moving portion, whose axis and dimensions nearly correspond with those of the unaffected part of the vessel; hence, the conditions being favourable for friction instead of concussion, a murmur is formed.

As for murmurs occurring in well-defined sacculated aneurisms, the absence of one or more of the conditions stated as requisite for the formation of the first sound of the heart applies equally to the shock sounds of aneurism. A rough condition of the orifice of the sac is probably a common cause, but the size of the orifice must also be concerned, since, if very small, the impulse of blood sent into the sac would be insufficient to develop sound; while, if very large, the conditions would approximate too closely to those of non-sacculated aneurism. But it must be confessed, that the relation between the different forms of aneurism and their sounds have not been sufficiently studied to enable us to speak with certainty in every case.

It forms no part of my plan to criticise the various explanations of the heart's sounds; one, however, requires passing notice, because by it the sounds are referred to the blood, and another claims attention on account of its general acceptance.

Dr. Bellingham maintained that the first sound was caused by friction between the blood and the parietes of the arterial orifices, and the second sound by friction between the blood and the auriculo-ventricular orifices. But, as I have previously said, it is impossible to conceive *how* such sounds could be produced by friction.

Two distinct views appear to be entertained of the valvular mechanism of the sounds, that they are produced by the valves either in the act of closing, or by their sudden tension when already closed. If a piece of membrane or textile material is held by both hands under water, and being relaxed is forcibly extended, a degree of sound will be elicited. This experiment has been confidently put forward in support of the valvular explanation. But it will be at once perceived that such an effect could only occur in the heart when the valves are passing from a state of relaxation to that of tension, and this must be at the moment of closing.

The mitral and tricuspid valves are closed at the very commencement of systole, and the semilunar valves at the outset of diastole. I forbear to enter into arguments in proof of facts about which no reasonable doubts can be entertained. In neither case, therefore, can the closing of the valves be regarded as the cause of the heart's sounds, which are coincident respectively with the duration of systole and diastole.

It is quite impossible that the action of blood against already tense valves can produce "a tympanic sound" from strong vibration, as happens in air when a tensely extended membrane is struck. The mitral and tricuspid valves are no sooner rendered tense by systole, than the semilunar valves are opened by the same action, and the intra-cardiac valves are thus relieved from undue pressure. But it has been shown that the pressure at either side of any of the valves varies but

little, and their delicate structure indicates that they are not adapted for the never-ceasing strain, and consequent wear and tear, implied in noisy vibrations.* The viscosity of the blood and its compression within cavities are of themselves highly unfavourable to vibration.

If the heart's sounds are caused by valvular tension, why is either of them so easily impaired or destroyed by slight imperfection of the valve which produces it? Is it not reasonable to suppose, that in case of *bruit de soufflet*, from slight leakage, the tympanic sound from the valve would always remain intact, or nearly so? Why, therefore, does a bellows' murmur of a low pitch annul the entire natural sound? No satisfactory reply can be given to these questions.

In case of too thin a condition of blood, or of too low pressure upon it, the first sound alone degenerates into *bruit de soufflet*. But in the first instance, as membranes vibrate best in thin and mobile fluids, on the valvular hypothesis, the first sound in anemia *ought to be* louder and clearer, instead of being totally altered. In the second instance, the change of the first sound into *bruit de soufflet* from excessive hæmorrhage cannot be explained on this hypothesis, since simple diminution of the natural sound *ought to be* the result of diminished pressure upon the mitral and tricuspid valves.

Nothing has tended more to untrue deductions than the liability to confound sounds of totally dissimilar origin with the true sounds of the heart. Thus, in applying a stethoscope to the still acting heart, exposed by vivisection, sound is inevitably produced by friction; and there can be no doubt that this sound has been sometimes attributed to *bruit musculaire*, and other causes.

When by a suitable arrangement air is made to circulate through the dead heart, sounds can undoubtedly be produced

* Dr. Markham asks, ("Diseases of the Heart," p. 154.) "Can membranes and chords be suddenly and forcibly stretched and remain toneless?" I venture to ask, Is it possible that we constantly suffer so much internal violence and survive?

by its action on the valves. This has been triumphantly regarded as the *experimentum crucis* of the valvular explanation. But no just comparison can be instituted between sounds produced by air and those produced by fluids, and no one has succeeded in imitating the first sound by the action of water on the mitral or tricuspid valves. As for the imitation of the second sound by water, I have already pointed out its real source. In short, vibration of valves or other structures, when in contact with blood, has no more to do with the sounds than the vibration of a door with the sound produced by the passage of wind through its keyhole. The sounds are in the one case due to rapid motions in the air itself, and in the other to rapid motions in the blood itself.

AN
EFFECTUAL AND SIMPLE REMEDY
FOR
SCARLET FEVER AND MEASLES:

WITH
An Appendix of Cases.

BY
CHARLES WITT,
MEMBER OF THE ROYAL COLLEGE OF PHYSICIANS; AND MEMBER OF THE
ROYAL COLLEGE OF SURGEONS, OF LONDON.

THIRD EDITION.

LONDON:
JOHN W. DAVIES, 54, PRINCES STREET, LEICESTER SQUARE.

1862.

PREFACE TO THE FIRST EDITION.

THE writer of the following pages submits to the notice of his brethren of the profession and the public, a medicine which he has found, from long and varied experience, to be a sure and simple remedy for the cure of Scarlet Fever and Measles.

Doubtless, it may appear to many a somewhat startling novelty that the *Sesquicarbonate of Ammonia* should be put forward as a specific of this valuable kind; but the writer deems it to be as valuable in these fevers, as the disulphate of quinine is acknowledged to be in intermittent fevers.

No discovery, however, is claimed in giving such a description of it. Its use, for this purpose, was introduced at the beginning of the present century, by a physician of some provincial celebrity, before it became adopted as a system by the late Mr. Wilkinson. The pupils and private friends of the latter gentleman have naturally followed him in the use of the same remedy, and with the like success; but, as it does not appear that any among these have as yet publicly testified to its value, the writer, as one of his friends, has here undertaken the task.

He hopes to have the attention of the profession to what he has to state; and if he can obtain indulgence so far, he does not fear,—however imperfectly he may plead his cause,—the fullest investigation of its intrinsic merits. Reference has chiefly been

made to the dangerous malady of Scarlet Fever; the prevalence of which since Christmas 1857, and its fatality, even in the families of many medical men, has been his motive for printing these pages. Of the excessive mortality which so lamentably attends this scourge, the following statistics supply almost incredible evidence. From the Registrar-General's report, it appears that the deaths in London alone, from Scarlet Fever, during the last ten years, amount to 27,360; and those in England and Wales to 176,046. It is, however, generally epidemic somewhere; and the great number of its victims in all classes of society, continues to be one presumptive proof, that the best method of treating Scarlet Fever hitherto remains a problem to be solved. The treatment here recommended will be found entirely consistent with the pathology of these disorders; otherwise, it might justly be pronounced empirical, and undeserving the attention of practical and scientific men.

May 1858.

PREFACE TO THE SECOND EDITION.

IN publishing a second edition, the Author thankfully acknowledges the several printed notices which have treated so favourably of this essay, as well as the many written communications addressed to him by distinguished members of the profession. He has nothing to retract, or to modify. The only additions are:—some further directions for the administration of the medicine; a theory or rationale of its action; a notice of its proved efficacy in some other disorders; and additional interesting facts respecting it.

January 1859.

PREFACE TO THE THIRD EDITION.

THE demand for a third edition satisfactorily proves, that the object of the author in originally publishing this pamphlet, has been, in some measure, accomplished. He trusts that the efforts already made to diffuse information on the use of the sesquicarbonate of ammonia, will be seconded by all who have had opportunities of testing it. Personally, he is well assured, that, by the treatment proposed, a vast amount of misery, pain, and anxiety will be spared, both to the patient and the practitioner.

Since the first issue of this pamphlet, very few cases of failure have been communicated to the author, and these have been admitted by the relators to be exceptional. On the other hand, many witnesses have declared their satisfaction and surprise, at the beneficial effects which have so speedily resulted from the use of this simple medicine.

Few medical men, in active practice, make record

of their cases; but in one instance where this was done, the ascertained result has been, that out of several hundred cases of Scarlet Fever, treated within the last six years with the sesquicarbonate of ammonia, the deaths were at the rate of one per cent. Before this remedy was made known to the correspondent who supplies this information, he had to attend cases of Scarlet Fever scattered over four parish unions widely apart, where previously deaths had been painfully frequent; but he now expresses his conviction, that success must result wherever the prescribed treatment is faithfully carried out.

On the other hand, another medical man, who was relinquishing his practice, urgently recommended to his successor the adoption of this treatment, which he had employed in the same locality for twenty years, and during that period he had rarely lost a patient from Scarlet Fever. The succeeding practitioner would not be convinced, either by arguments or by facts, of the value of a treatment so novel to him, and he rejected it accordingly. The result was, that in his first year, out of one hundred and six cases of Scarlet Fever, no fewer than the fearful number of seventy-four proved fatal. In 1858, in a public school in London, where quinine and acids were chiefly relied upon, the deaths from

Scarlet Fever were at the rate of rather more than ten per cent.

A few days after his first edition was published, the author was gratified by the receipt of a letter from Mr. Henry Jackson, the senior surgeon to the Sheffield Infirmary, expressing his great pleasure at the publication of a method of treating Scarlet Fever and Measles, with which he and his father had long been familiar. Both these gentlemen had, in common with Mr. Wilkinson, derived their knowledge of the ammonia treatment from Dr. Peart. They had used no other treatment for upwards of fifty years; and during that long period he states, that only four deaths from Scarlet Fever had occurred to them. Of these, two were children who died in a room, under the boarded floor of which, open cesspools were afterwards discovered. In consequence of this discovery, an investigation was made in the other two instances, and it was found that the drains, which passed beneath the floor, were open from decay, in several places. In these four cases, it may not be incorrectly said, that death ensued from *drain* fever in a scarlet dress.

The late Dr. Baly at once adopted this treatment as soon as the author made it known to him; and he often expressed his conviction that its merits were by

no means overstated, and that he had been thereby enabled to save many patients who he believed would otherwise have died.

The author feels, that any addition to the weight of evidence and medical testimony brought forward in these pages, is wholly unnecessary; and that he has only to continue his endeavours to make the treatment of Eruptive Fevers by ammonia more and more known, to ensure ultimately its general adoption.

C. W.

30, Spring Gardens, London,
January 1862.

AN EFFECTUAL AND SIMPLE REMEDY FOR SCARLET FEVER, ETC.

It is upwards of thirty years since the late Mr. Wilkinson assured the author, that the result of his treatment of scarlatina and measles with the carbonate of ammonia,* for twenty years, was, that *he had not lost a single patient*; and he further stated, that, after having cured these diseases by this agent, he rarely, if ever, had any of the usual unfavourable after consequences to contend with. Mr. Wilkinson was well known, in his time, as an elegant scholar and a finished gentleman of the old school; his judgment, skill and experience, combined with active benevolence and success in the practice of his profession, have rarely been surpassed; and it may be added (for this is important to the purpose in hand), that he was a man of the most scrupulous integrity; an entire reliance may, therefore, be placed on his statements.

The question may naturally suggest itself, why he did not make public a treatment so important and so successful? He endeavoured to do so; but it is to be regretted that he failed in adequately attracting public attention. What he says, relative to this subject, is contained in his short and valuable work on

* This medicine, formerly called the volatile alkali, has since successively received the names of subcarbonate, carbonate, and sesquicarbonate of ammonia.

Cutaneous Diseases,* to which scarlatina does not properly belong. This may be one reason why it failed to attract that degree of attention which it deserved.

But another, and certainly a powerful, cause operated against the recognition and adoption of this practice; it was new, and had never been a part of the doctrine of the schools. Scarlatina was then treated as a purely inflammatory disorder; and the proposal to administer what was thought to be an irritant in a fever, was looked upon as a heresy; for which the medical mind of the day was unprepared. The same views, unfortunately, are yet too generally prevalent; and inasmuch as many experienced members of the profession unhesitatingly admit their entire want of confidence in the ordinary modes of treatment, there is clearly a reason why one, confessedly of great practical value, should receive a more general consideration. The author's medical friends, to whom this practice was before unknown, and to whom it has been fully explained, have shown the greatest readiness to afford it a fair trial; and without a single exception, they have all uniformly since expressed their conviction of its surprising efficacy.

That this subject may be laid fully before the reader, the following remarks, relating exclusively to Scarlet Fever and Measles, are extracted from Mr. Wilkinson's book, now long out of print. He says:

"In the year 1803, I attended several cases of the scarlatina maligna, with Dr. Willan and the late Dr.

* *Remarks on Cutaneous Diseases*, by J. H. Wilkinson, London; printed for John and Arthur Arch, Cornhill. 1822.

Hamilton. It is well known that the disease raged most fatally during that period, and we lost four of our patients out of five in one family. Never were men more puzzled to know what remedies to adopt: all which Dr. Willan has recommended in his publication were employed. Emetics, purgatives, calomel, and antimony; many other diaphoretics; opium, wine, and acids; bark, blisters, decoct. contray. with oxymel of squills; application of cold water, gargles of different descriptions, fumigations, etc.: all without the least good effect; all without making the least sensible impression upon the disease in any of its stages.

"One fine girl, about eleven years of age, in high health and spirits in the morning, was attacked, an hour after, by the disease, and destroyed in thirty-six hours

"About this time, Dr. Peart published his *Practical Information on the Malignant Scarlet Fever and Sore Throat*, in which he describes the wonderful effects of the subcarbonate of ammonia, and considers it to be endowed with a specific power over that disease. Like other practitioners, he was continually lamenting the loss of his patients by that dreadful malady; till he employed the subcarbonate of ammonia in the manner he describes; and from that moment he did not lose one patient out of nearly three hundred.

"When I read this account, I immediately inquired after the character of Dr. Peart, and finding that he was most respectable, both in talent and probity, and engaged in very considerable practice, I had no reason to doubt the truth of his statement, and therefore immediately adopted his remedy. . . . And

I am happy to be able to declare, that, from that moment to the present, a space of seventeen years, I have not only never lost a patient in the above disease, but have never had a case of the kind that has even appeared dangerous, or that has even given me a moment's anxiety. . . .

"In addition to my own testimony of the powers of this medicine, I have that of my friend, *Mr. Ricardo*, whose opinion is highly valued by all who know him, and who will not be thought to give too much credit to the virtues of any one particular remedy. He writes as follows:—

"I have received your letter, requesting me to state the result of my experience of the effect of subcarbonate of ammonia, in the treatment of measles and scarlatina. As I employed this medicine at your suggestion many years ago, I lament that I have not placed on record any particular cases, many such having been under my care; but, perhaps it may be sufficient for your purpose that I am able to declare, that the exhibition of subcarbonate of ammonia in such cases has been attended under my direction with constant success. You know that I am situated in the neighbourhood of many schools which I am in the habit of attending; and, *during the twelve or fourteen years in which I have employed the subcarbonate of ammonia, I have not lost a single patient of some hundreds whom I have attended in the above diseases.*

"As an additional circumstance in favour of this remedy, I must mention, that I lost two patients whom I attended with another medical gentleman, where I had not sufficient influence to have the ammonia employed. To be as particular as my memory and my present ill state of health will allow me to

be, I must state, that among the paupers I have lost two or three children; but the administration of the medicine was evidently neglected by the nurses, as was every other attention necessary to give the patients a chance of recovering.

"Dr. Willan does not appear to have put to the proof the assertions of Dr. Peart upon so interesting a subject as scarlatina maligna; instead of which, he quotes only from his publication, without giving any opinion upon it. He observes: 'A physician near Gainsborough, considers volatile alkali to be endowed with a specific power over the malignant scarlet fever and sore throat. He dissolves two drachms of the carbonate of ammonia in five ounces of water, and directs the patient to take half a table-spoonful, or two teaspoonfuls every two, three, or four hours, according to the urgency of the symptoms. If the difficulty of swallowing abate, and the patient wish for it, a little cold water may be added to each dose. Cold water, or toast and water, may be drunk at pleasure. The above remedy was given in every form and in every stage of the scarlatina. Some,' says Dr. Peart, 'were glowing with universal efflorescence; in some, the extremities were swelled; in others, fetid ulcers appeared; in most, the throat was swelled and inflamed, often ulcerated, and respiration almost prevented: but, in the most alarming cases, a scorching fever, and raging delirium, rendered the patient's situation horribly distressing; yet, in all these variations of the disease, the volatile alkali was my specific, which I administered to between two and three hundred patients, successively and successfully.' The immediate effects of the re-

medy are stated to be a diminution of heat, of fever and delirium, and a disposition to sleep. It is hardly necessary to mention that during the exhibition of this remedy the bowels should be kept in proper order; and that, if at any time there should be an accumulation, four or five grains of the hydrarg. submur. should be given; gargles likewise should be employed.

"Dr. Peart does not attempt to theorise upon the subject; content with the success of his remedy, he cares not in what manner it operates; but I will take the liberty to state, that I depend not upon its diuretic, nor its diaphoretic qualities, but believe that it possesses the power of increasing the strength of the arterial action, at the same time that it diminishes its frequency; that it supports the *vis vitæ* without increasing the heat or irritability of the system; and by such means counteracts the tendency in the scarlatina anginosa and maligna to ulceration and sloughing, and all the other evils which sometimes attend this dreadful disease. But, to effect such purposes, it must be given, as Dr. Peart has prescribed, in a state as strongly stimulating as it can be swallowed. . . .

"I hope I shall not be thought to have expatiated too much upon the virtues of a remedy which I have found so efficacious in my own practice; but I have seen so many cases of scarlatina and rubeola, treated by others with the common antiphlogistic remedies, which have been so lingering, and have left such ill effects in the system, that I feel it my duty to urge the employment of the subcarbonate of ammonia as extensively as possible."^{*}

^{*} The words printed in italics are not so in the original of the above passages.

The only other English medical writer who alludes to the employment of this medicine, is Dr. Lettsom, in his "*Reflections on the general Treatment and Cure of Fevers*," 1722. He speaks of ammonia (under its old name) as follows: "Whether the volatile alkali proves an antiseptic internally, is not yet ascertained, but its good effects in fevers are established by numerous facts; it is stimulant, antispasmodic, and very diffusible. On the last account its operation is transitory; it should, therefore, be given at short intervals to procure any benefit."

In other countries the ammonia treatment has found advocates. Dr. Strahl, of Philadelphia, has made public his faith in it, as a real specific for the cure of scarlatina; and Dr. Reicken, of Brussels, has written at some length on the surprising effects which he has found it to have over certain epidemics, more especially scarlatina.

As to the administration of this medicine, nothing can be more simple. The dose to be given is regulated by the circumstances of the case, according to the severity or mildness of the symptoms. Dr. Peart gave six-grain doses in cases of unusual severity. Mr. Wilkinson rarely gave less than three grains, increasing the dose according to the ages of the patients to ten grains, and repeating it more or less frequently, according to the urgency of the case. In the Appendix will be found a case (No. 3) in which as much as seven grains were administered every hour, for the space of twenty-four hours, and during every alternate hour for the next like space, not only with perfect safety, but with complete success. A gentleman in extensive practice in Hampshire, to whom

the author had mentioned the use of the sesquicarbonate of ammonia in scarlatina, and who has since habitually used that remedy with unvarying success, states, as the result of his experience, that almost any quantity may be administered with safety and advantage. As far as the general and extensive use of ammonia is concerned, it may not be unimportant to mention, that it is quite inexpensive. The mischief of counteraction by acids during the administration of ammonia is a point requiring notice. Great care must be taken that no acid drinks, nor acid fruits of any kind shall find their way into the sick-room. Most lamentable instances have occurred where the efficacy of the medicine has been altogether destroyed by the neglect of this caution.

In the practice of medicine, as in all other pursuits, unless every proceeding be strictly adhered to, it is unreasonable to expect success. Any departure from the directions laid down is alike an act of dishonesty towards the physician, and an injury to the patient. The well-known aphorism of Hippocrates bears especially on this point, viz.: "Not only, therefore, must the physician attend to what is immediately imperative in the case, but it is important that the patient himself, those who are about him, and even external things, all must assist towards a cure."

The best drink in scarlatina, measles, and all eruptive fevers is pure water, and that in an almost unlimited quantity: there is of course no objection to toast and water, nor to the accustomed cup of tea.

Perfect quietude is especially required under the operation of this medicine. The patient is thrown by it into a sleepy state, as nearly as possible resem-

bling the repose of health, and as long as that inclination remains, which is much to be desired, it should not be interrupted. In aid of this, the room should be somewhat darkened.

The state of the atmosphere in the patient's room is a matter of importance. Chills must be carefully guarded against. It is scarcely credible, without personal experience of the fact, how extremely sensitive the skin becomes in scarlatina, and how painfully alive it then is to the slightest exposure to cold air. Besides the prevention of needless suffering from this cause, there is danger of checking the full development of the eruption. This check is a fertile source of those serious complications which so often follow this disorder. At the same time, care must always be taken that there is an abundant supply of *pure* air. When the eruption has declined and the fever is subdued, the restrictions as to drinks and fruits are not necessary; and the adoption of a light and nourishing diet becomes important.

It is imperative, when trial is made of this medicine, that it be done in all its integrity, and with a full reliance on its beneficial effects; that it be given, not only in the requisite doses, but simply and *alone*, not even with any of its combinations; and that it be constantly borne in mind, that the prospect of success is the greater in proportion as it shall be administered instantly on the supervention, or even suspicion of the attack.

The use of purgative medicines in this disorder requires much care and discrimination; and none but those of the mildest character should be administered.

On this head it is necessary to take a glance at the pathology of scarlatina. The generally received opinion is, that this disorder originates from the imbibition of a poison which has a contagious source in some miasma; that about eight days are occupied in, what may be called, the incubation of the malady; that at the end of this period, the process of expelling this poison from the system is set up, viz., by throwing it out upon or by means of the skin, the mischief caused to which part of the human organisation is easily repaired without injuriously affecting the constitution. If the powers of nature be healthful, and her efforts properly seconded, not thwarted or lowered, this salutary progress of the disorder takes place as a matter of course. Should nature fail, however, in the effort to throw off the poison in this simple manner, by fixing its action on the outer membrane of the body, it takes a course attended with more or less danger; it may settle upon some of the internal organs which perform functions in common with the skin, viz., the lungs or the kidneys, giving rise to effusions, or general dropsy;* or it may fall on the pericardium, or on the membranes of the brain, soon destroying the integrity of those structures. It may also settle on the liver, or on any of the glandular structures of the system, which is by no means an uncommon termination.

It will be seen, therefore, that the settling of the disease on the outer skin is the result to be desired. The object is not to subdue what is looked upon as diseased action, so much as to sustain this

* For a mode of speedily relieving this affection, see a paper by the author in the *Lancet* of 19th of October, 1861.

curative effort of nature. A medicine, therefore, which will so act as to destroy the poison, without interfering with this salutary process, must prove the most effectual agent in the cure of this disorder. If this effort be checked by the injudicious use of purgative and saline medicines, the case is prolonged, and the chance of recovery not only made doubtful, but the foundation is laid for all those ailments which are so well known to follow scarlet fever and measles.

As to emetics, the use of them in scarlatina is decidedly injurious; and bleeding is still more so. The hot bath is a dangerous experiment; in the case of a boy, fourteen years of age, convulsions and death immediately followed his immersion.

MEASLES, being a kindred malady, requires precisely the same treatment, and the same results will follow. If treated with ammonia, it will prove neither a dangerous nor a protracted disorder; there will be the same immunity from any distressing consequences; there will be no cough, no delicacy of the lungs, laying the foundation for consumption, etc. The history of this malady proves its fatality at times: in 1672, it is on record that 300 died weekly in London of measles, when the population was only one-seventh of its present number.* The New Hebrides Islands have recently been scourged with this disorder: at Aniteum in particular, 1100 are said to have died out of a population of 3500. During the last ten years the deaths from measles in London, according to the Registrar-General's Report, have

* Old and New Bills of Mortality, by J. Angus, Esq., in the *Statistical Journal*, vol. xviii, p. 117.

amounted to 14,756; and in England and Wales, to 75,736.

The notion of a specific antidote has been decried by some as irrational, but, as opposing and counter-acting agents are recognised in other divisions of the natural world, why should they not exist in the animal economy? The difficulty is to discover them. Known medicines of this class are but few, but there is no reason why the number should never be increased. Boerhaave (in his Aphorisms *De Cognoscendis et Curandis Morbis*, 1391-92-93), expresses the hope that a specific antidote might one day be found even against the poison of the small pox. The sesquicarbonate of ammonia is the only medicine yet known which appears to have any decided effect upon this terrible malady.*

The question has been often asked, What is the rationale of the action of this medicine? It may, perhaps, be difficult to account altogether for the remarkable phenomena which it exhibits, and to give a theory which is perfectly satisfactory; yet the fol-

* A most interesting paper, however, by Mr. H. C. Miles, surgeon, Royal Artillery, Halifax, was read at the Epidemiological Society of London, on the 4th of November, 1861. Mr. Miles states, that the Indian tribes, near Halifax, use an infusion of the *Sarcocolla Purpurea*, a variety of the pitcher plant, as an antidote to small-pox. A wineglassful of the infusion brings out the eruption; and after a second or third dose, given at intervals of from four to six hours, the pustules die off, apparently losing their vitality. Under this remedy the constitutional disturbance subsides in a few days, and no marks nor pittings are left. The Indians believe this treatment to be always successful, and declare that they feel as if each dose were "killing the disease". A wineglassful is taken daily by those in health as a preventive, when the small-pox is prevalent, in order to have the antidote "always in the blood." The mortality from this disorder among the Indians, previous to the use of this remedy, was frightful.

lowing reflections will assist in the investigation. In the first place its administration in these disorders produces sleep, although it is known not to possess any narcotic properties; and patients become in every respect tranquillised within a few hours after it has been taken. Whether the seizure be accompanied by affection of the brain, or of the lungs, or of the bowels, indicated by headache, by cough, or by abdominal tenderness, each of these symptoms ceases upon the system being brought under its influence; and this usually happens in six or eight hours. Its beneficial effects are observable, in the majority of cases, just at the very time when patients might be expected to become worse. When administered, even after alarming symptoms have set in without the appearance of any eruption, the eruption is produced, and the bad symptoms simultaneously cease. Again, when severe symptoms exist with the eruption in an excessive degree, a diminution of the eruption will take place, often within a few hours, and the bad symptoms will subside. Even when delay, or peculiarity of constitution, has already occasioned local mischief, the presence of ammonia is found to exert its influence, causing diseased action to subside, or to die off by the removal of its source. Lastly, these good effects are produced as effectually in patients whose constitutions, from their healthfulness, require no aid from stimulants, as in those evidently deficient in bodily vigour.

Do not these facts afford some explanation of the definite action and the properties of this medicine? Do they not shew, that shortly after it has been taken, it may be absorbed and mixed with all the

circulating fluids of the system; and that, by some process of animal chemistry, it has the effect of destroying or of neutralising, the irritating poison with which it has commingled? Non-medical observers have remarked that it seems to *kill* the disease: at least, nature is rendered equal, through this agency, to the task of throwing out the poison upon the surface. The Sesquicarbonate of Ammonia may be said to act neither as a sedative, nor as a stimulant, but positively as a *specific* or *antidote*—the highest commendation assignable to any medicine.

It has been asserted, as an argument for the use of stimulants in these disorders, that brandy and wine exert a beneficial effect; but has this ever been proved? and are they not much more likely to aggravate such disorders, than to aid the natural powers in subduing them?

The question was put in the first edition of this essay, "Whether ammonia might not be beneficially used in some *other* disorders?" If the correctness of the pathology of the principal disorder, here treated of, be admitted, the conclusion seems inevitable, that small-pox, erysipelas, and other eruptive fevers, must be included in the same category. This, indeed, Mr. Wilkinson proved most satisfactorily to be the case; and his views have since been fully confirmed by most extended experience. Even with reference to that fearfully fatal disease, diphtheria, the author has received several communications assuring him of the successful use of the ammonia; and one correspondent states, that, out of twelve cases, he had not lost one after having administered it.

It is impossible but that fatal cases must now and

then occur. Various material influences will, at times, counteract the effects of any medicine, however powerful; it is then simply the case of one natural force exerting itself in a superior degree to another. The miasma from drains and cesspools, when abundantly and *continuously* poured forth, and rendered perhaps specially virulent by some electric agency, is likely enough to prove fatal to those who inhale it. Certain peculiarities, also, on the part of the recipients of the poison, render it more injurious to them than to others. The brains of the children of drunkards, for instance, particularly of those who have died of *delirium tremens*, are always highly sensitive and excitable; and they suffer more severely than others from febrile action of any kind. It is, therefore, illogical to say, that what has been proved to be a remedy under ordinary conditions, is not a remedy, because its powers are occasionally found unequal to cope with phenomena which rarely occur.

Scarlet Fever had long baffled the efforts of medical science. It is on record that in the year 1700, the only surviving son, out of seventeen children, of the Princess Anne and Prince George of Denmark, died of that disorder, for which he had been improperly treated*—an event, however, which had the momen-

* "The Princess Anne kept the eleventh birthday of her son, the Duke of Gloucester, with great rejoicings, little anticipating the result. The boy reviewed his juvenile regiment, and presided over a grand banquet. He was very much heated and fatigued. The next day he complained of sickness, headache, and sore throat; towards night he became delirious. The family physician of the Princess sought to relieve him by bleeding, but this operation did him no good. Dr. Radcliffe was sent for by express. When he arrived at Windsor Castle, and saw his poor little patient, he declared the malady to be the *scarlet fever*. He demanded 'Who had bled him?' The physician in attendance

tous consequence of changing the dynasty of these realms.

The analogous effect of ammonia upon the bites of all poisonous snakes, to that which it exercises in the disorders now treated of, is a very suggestive fact. It has been long and generally acknowledged in those districts of England where the viper abounds, that when such poison has been infused into the system, ammonia is *the* antidote.

The Hon. Robert Boyle, in his Essay on the Blood, describes what he calls "The Spirit of that Liquor," which he proves to be ammonia. The more recent experiments of Latini and Valle prove that ammonia is evolved in expired air. If, then, its existence in the blood, in a certain proportion, is essential to health, or is generated as a corrective of the morbid poisons which the system is continually liable to imbibe, may not an increased proportion, artificially introduced, effectually counteract the poison of some bodily disorders? And there is one very curious fact yet remaining to be noticed: ammonia is the *only* known substance capable of preventing the coagulation of the blood when out of the body.

That the continuance of the present frightful death-rate of scarlet fever and measles* will depend on an inefficient treatment, as will its diminution on an appropriate one, no one will dispute. That the sesquicarbonate of ammonia does possess the pro-

owned that the duke had been bled by his order. 'Then,' said Radcliffe, 'you have destroyed him.' The event justified the prediction of the most skillful physician of the age."—*STRICKLAND'S Life of Queen Anne*.

* From the Registrar-General's Reports, it appears that, during the ten years ending 1859, the deaths in England and Wales from scarlet fever and measles amount to 251,762.

perties ascribed to it, as a curative agent in these disorders, the testimony adduced in the preceding pages places beyond all doubt. The author, therefore, feels that, in advocating the use of this remedy, he cannot be charged with having proposed any utopian scheme; and he submits, that, in a matter of such vital importance, the refusal to give it a trial, or to investigate its merits, involves a serious amount of responsibility.

APPENDIX OF CASES.

CASE No. 1.—SCARLATINA.

A lad, about twelve years of age, was sent home from a military school, attacked with scarlet fever. He had taken nothing but a gentle aperient, and on his arrival was put to bed. Four grain doses of the sesquicarbonate of ammonia, dissolved in a little water, were administered every three hours, with an extra dose occasionally during the day. Tea and toast and water simply were given to him. In twenty-four hours, the eruption was thrown out all over the body; on the next day, it began to decline; and on the third day it had nearly disappeared: the medicine was then taken every six hours for two days and was continued for a day or two more, thrice daily. Suitable nourishment at the same time was given, and in a week he was well. Gentle aperients to bring the secretions into a healthy state alone were required.

It may be said that this was a simple case; but it is given only as an example of hundreds of others, which it is contended have proved so on account of the treatment; and that with the same treatment most cases would have the same speedy termination, and with the same absence of any *unfavourable consequences*. In a case in which suppuration took place in one of the glands of the neck, after the subsidence of the eruption, it was discovered that the patient, who was a delicate youth, had improperly been called out of his bed more than once, while the disorder was at its height, to see a dying relation. This exposure was sufficient

to cause the mischief which followed. The swelling, however, quickly disappeared, and the recovery was perfect.

And here a caution may be added against applying leeches to enlarged glands in these cases; the bites are apt to ulcerate, leaving ugly marks on the neck. Even where matter does form, simple poultices alone are required.

CASE No. 2.—SCARLATINA.

The ammonia is administered with advantage at *any of the earlier stages of the disorder*, and may also be substituted with the best effect at an advanced stage for any other treatment.

Scarlet fever had broken out at a large school, not far from London, and about a dozen boys were attacked. One of the most severe cases was a fine healthy lad of about twelve years of age, a member of a family in which two other children had, on a former occasion, suffered from a severe form of scarlet fever, and both had been successfully treated with ammonia under the author's care; consequently he was requested to see the present case. A grain of calomel had been placed on the boy's tongue, the action of which had left him in a suitable state for the operation of the ammonia. The medical adviser of the school had never heard of this treatment, but no time was lost in its immediate adoption. The case exhibited all the usual symptoms of the disorder in a most marked form. The skin throughout was of the colour of a boiled lobster; there was sore throat, foul tongue, headache, pulse 120, with restlessness and depression, and more or less delirium. Five or six days had elapsed since the commencement of the attack, but the eruption showed no tendency to decline, nor was there any abatement of the symptoms. As the boy afterwards expressed it, he felt "as if his blood were all on fire." Five grains of the sesquicarbonate of ammonia were now given

every three hours, in a little water slightly sweetened, and on the next day all the symptoms were found to be relieved. The boy had slept much, and was more composed; the pulse was slower, and the redness of the skin already diminished. He continued to improve daily, without interruption, and in due time nourishing diet was given.

So manifest was the improvement in the above case, even on the second day, and so completely was the surgeon a convert to the treatment, that he requested the author to visit his own son, who was ill with the disorder, and had an enlargement of the submaxillary gland of the size of a turkey's egg. Even with this complication, the medicine took its usual effect; in twenty-four hours the boy had become cheerful, and able to speak more distinctly; the swelling was already reduced to a third of its former size, and soon disappeared altogether. Every patient in the school was now unhesitatingly placed under the same treatment, and all of them rapidly got well, without a single case of enlarged gland, or any other unfavourable result. They were sent for several weeks to a country house belonging to the Principal of the school, by way of quarantine, previous to their return to their respective homes.

It is generally supposed that the infectious power of scarlatina remains in the body six weeks. It is not improbable that the ammonia so affects the poison that this power of infection, as to time, is considerably reduced; but the facts bearing upon this point require further investigation.

CASE No. 3.—SCARLATINA.

The following case is an instance showing the occasional necessity for large doses of the ammonia. During the past year the author was called to a young lady, supposed to be labouring under inflammation of the bowels. There certainly were several of the symptoms of that disorder; but, instead

of bleeding, the treatment pursued was chiefly of a cordial character, and in three days she was relieved for the time from pain, and left her bed apparently well. In two days more, however, she was seized with fearful difficulty of breathing, which lasted for eighteen hours; from this she was also relieved without bleeding, and all again seemed right. Soon after, a restlessness and disturbance to a very alarming extent succeeded, and for three days and nights there was no sleep. Her distortions of countenance were so great, that, from having been previously remarkable for her beauty, this characteristic was altogether lost; while her naturally gentle and amiable disposition changed to one so exacting and imperious, as severely to try the patience of all about her. Although she did not lose her consciousness, it seemed as if the case would end in mania. On the ninth day, the faintest possible pinkish blush was discovered on her chest; and then arose the conviction that it was a case of scarlet fever.* The administration of the ammonia was at once commenced, and, owing to the gravity of the symptoms, in large doses. A solution containing seven grains to each two tablespoonfuls of water was therefore prepared, which dose she took every hour for the space of twenty-four hours. The eruption then came fully out in a most perfect form. The same dose was, next day, repeated every other hour for the next twenty-four hours, when the eruption began to decline fast. All cerebral disturbance ceased when the eruption became general; she slept profoundly; perspiration ensued, and the pulse became less frequent. Thus, in forty-eight hours this patient had taken, with the best results, 252 grains, or more than half an ounce, of the sesquicarbonate of ammonia. The same dose was taken, thrice daily, for two days more, although at the end of the third day, or at least, at the beginning of the fourth, the eruption had completely disappeared; thus rapidly had the disorder

* This young lady was in lodgings in London, and it was afterwards discovered that, at the very time, some children were lying ill with scarlet fever at the upper part of the house.

run its proper course. With the exception of the usual peeling of the skin, no other indication of her having suffered from the disorder followed. The case occupied, on the whole, thirty-five days, for the last ten of which, the citrate of iron and quinine was taken, with a few grains of rhubarb, daily. Instead of any deterioration of the general health following this severe attack of scarlet fever, as is so often the case in those who have been subjected to the ordinary treatment, the patient in this case obtained a degree of health which she had never previously enjoyed.

This case is instructive, as shewing how, when nature's efforts to throw out the poison on the skin had failed, the peritonæum was the membrane first affected; next the membrane lining the lungs, as shewn by the extreme difficulty of breathing. The third irregular effort fixed the poison on a still more dangerous site, the membranes of the brain. Now, if upon either of these three occasions, violent purgatives or the lancet had been resorted to, it cannot be doubted that the powers of nature would have been exhausted, that the eruption would never have been thrown out, and that death would have ensued.

CASE NO. 4.—MEASLES.

Four boys, of the ages of fifteen, eleven, nine, and five, respectively, were seized with this malady within a few days of each other. A mild dose of jalap was given to each, and a simple solution of the ammonia was prepared, in the proportion of five grains to each tablespoonful of water, slightly sweetened with sugar. Of this solution, the two elder boys took a tablespoonful each an hour after the jalap, repeating the dose every three hours; the two younger a dessertspoonful. None of them were reluctant to swallow their medicine, as it was diluted with an equal quantity of cold water: and they had as much toast and water as they wished to drink. The hoarse, dry, and hard cough ceased in a few

hours, and the eruption appeared: on the second day it was well out; on the third it began to decline; and on the fourth it had entirely disappeared. For the next two days the medicine was taken less frequently,—about every sixth hour. As it was cold spring weather, fires had been kept up in their bedrooms day and night; and, with the aid of beef tea, veal broth, and other suitable nourishment, they all rapidly recovered. No other medicine was taken, and none of these children suffered from any of those serious consequences which so often follow an attack of measles.

Another child in this family was attacked with this disorder, being at the time on the Continent, and was differently treated; and though, perhaps, the most healthy of them all, suffered for two years with feeble health: abscesses formed in the scalp, and there was ulceration of the cornea in one eye, attended with an effusion of pus between its laminae.

CASE NO. 5.—MEASLES IN AN ADULT.

A gentleman had this disorder, for the first time, in a very severe form, in his thirty-fifth year, accompanied with most intense headache. He had been ill for three days when the ammonia was commenced, of which he took ten-grain doses every second hour. At the end of six hours, the headache ceased and he fell asleep. On awaking he was plentifully covered with the eruption, and felt free from all uneasiness: his recovery was speedy and uninterrupted. He was acquainted with the action of medicines, and, therefore, well able to observe their effects. He remarked the signal relief of his headache which followed each successive dose of the ammonia, and he declared that if children suffered as he had done, measles ought never to be regarded as a trifling malady.

CHOLERA

ITS

NATURE AND TREATMENT.

By

WILLIAM WHITE,

Member of the Royal College of Surgeons in London,

Civil Surgeon, 24-PERDUNNAH.

LATE IN MEDICAL CHARGE FIELD DEPOT HOSPITAL AMHERST, AND
EUROPEAN AND NATIVE DEPOT HOSPITALS RANGOON.

Fidem non derogat error.

Calcutta:

P. M. CRANENBURGH, MILITARY ORPHAN PRESS.

1857.

INTRODUCTION.

THE following pages have, to a certain extent, been compiled from a mass of notes that have from time to time, during and since, the late Burmese Campaign, found their way into my private case-book. The sole object in causing them to be printed is, that they may be read more easily, and better understood by those who may be called upon to judge of their merits.

Be it known, I profess not to have discovered any new theory of the Pathology of Cholera, neither do I boast of advancing any novel kind of treatment of that disease. It is possible every thing herein said and thought, has been thought and said by much more able men long since; be that as it may, I have heard of no one, with the exception of Dr. Geo. Johnson, of King's College Hospital, who has advanced opinions similar to my own. While on Sick Furlough in England, and under the care of Dr. Geo. Johnson for renal disease contracted in Burmah, I alluded, accidentally, to the immense mortality that occurs annually in Calcutta and Lower Bengal from the effects of Cholera, which mortality I accounted

for, in a great measure, by the mode of treatment adopted. To my extreme gratification I found, that this able physician, not only approved of all I advanced, but that latterly he had adopted and carried out similar views with great success; he strongly urged me, as a matter of duty, to bring the subject to the early notice of the Government of India.

To Dr. Geo. Johnson I am indebted for most valuable information, and should I ever have the opportunity of publishing the result of an extensive experience in the treatment of Cholera, upon the principles suggested, (*an experience which can alone be granted by special indulgence of Government*) I shall not fail to give the world the full benefit of that information. At present these notes, which have been curtailed as much as the subject will permit, must necessarily be most imperfect and crude, and but for the solicitation of others, would in all probability never have appeared in print.

I repeat I profess to lay claim to nothing!—nothing beyond the desire to be of service to my fellow man, which I am sure any person will be, who seriously and on common sense principles, sets to work to ascertain what treatment may be relied on in Cholera.

Since preparing these notes for the consideration of Government, I have visited the Mauritius to learn what treatment had been employed with most advantage, during the late fearful visitations of Asiatic Cholera in that Island. From what I could glean, there, from Public Documents and Returns, and from

private information, I am prepared to assert that Emetics, Cathartics and the cold water *douche* were the most successful, though the least practised. On one Estate* alone, consisting of about 200 persons, 149 cases were cured out of 150, the fatal case being the only one treated with opiates and astringents. In the 149 successful cases, nothing but Emetics, Cathartics and Dil: Sulphuric Acid were the remedies employed.

From official Documents, now in my possession, I am prepared to give the treatment of some of the more influential Medical men in the Island of Mauritius, together with the success that attended each; but this must be deferred till a more convenient period, suffice it at present to remark, that it is generally considered in the Mauritius, both by French and English Physicians, that Cholera is *contagious*.

W. WHITE.

Calcutta, January, 1857.

* The name of this Estate is Wolmer, in the district of Plaines Wilhems. The Medical Officer in charge being Dr. Fryers. Some of the cases were mild but well marked and presented themselves early to the Medical Officer.

CHOLERA is not the intractable disease it has hitherto been considered, but it is rendered so by the mode of treatment adopted for its cure.

That it is the effect of atmospheric influence, either as to its electric condition, or some form of malaria held in suspension, or a peculiar specific poison; but what the precise nature of such an atmosphere is, will perhaps for ever remain a mystery, though observation and research may tend greatly to strengthen conjecture.

That the first impression of a Choleraic atmosphere is through the respiratory organs, producing partial congestion of the minute branches of the pulmonary artery, which congestion increases as the disease progresses, until the cavities of the right side of the heart become so loaded, as to impede the action of that organ, and to lead ultimately to its final cessation.

That this congestion is produced in the following manner:—Between the particles of venous blood sent from the right side of the heart and the atmospheric air (in its normal condition) received into the lungs, exists an affinity by which the venous blood is drawn to the minute ramifications of the pulmonary artery where certain acknowledged changes are supposed to take place.* So soon as this change is effected, and the carbonised protoxide of iron contained

* Magendie.

within the red corpuscles of the blood is decomposed (the protoxide being converted into peroxide and the carbonic acid eliminated) this affinity ceases, and the newly arterialised blood is passed onwards through the pulmonary veins to the left side of the heart, partly by the contractile power inherent in the coats of the vessels, but more particularly by the 'vis a tergo' induced by the action of such affinity upon the particles of venous-blood coming after. Now when the choleraic poison or atmospheric change, above alluded to, exists, when the oxygen or ozone (which for want of better nomenclature we will designate as an oxide of oxygen,) is deficient in quantity or specifically altered, the force of the affinity is considerably reduced, though perhaps not altogether removed, and the blood being now imperfectly arterialised, as well as impregnated with a morbid poison, causes the coats of the pulmonary artery, at its extreme ramifications, to contract *permanently* on their contents, thus assisting to produce by their diminished calibre the partial congestion above alluded to.

The effect of this partial congestion must necessarily be to impede the circulation through the lungs, and to load the right side of the heart with venous blood, and the atmospheric air not being in a condition to perfect the customary changes in the blood, that fluid passes on slowly and imperfectly, carrying with it, as a matter of course, an insufficient supply of oxygen and ozone with a full amount of morbid poison, thus tending to depress the arterial circulation and powers of life as much by the limited amount of the circulating fluid sent by the left side of the heart, as by the deficiency of its vital principle, to say nothing of the depressing influence exerted by the Choleraic poison.

In this way we account for the pulsation at the wrist becoming more and more imperceptible as the pulmonary congestion progresses, until it ceases entirely: the arteries not receiving their due supply the extreme ramifications are comparatively empty hence the shrivelled appearance of the extremities, the puckered condition of the body the hollow and shrunken appearance of the eye, and the collapse of the features. When collapse is complete, and pulsation has ceased in the temporal artery, this state is particularly conspicuous, the ramifications of the ophthalmic artery are completely emptied of the circulating fluid, the globe of the eye falls to the back of the orbit and becomes in itself shrunken, hence that unmistakable appearance of the features

in cholera. The non-decarbonization of the blood, the want of combustion within the body, naturally leads to the reduced temperature, which is first observable in the extremities, then on the surface of the body and ultimately in the tongue and breath. Thus then in collapse the tardy and diminished circulation is dependent upon the impeded flow of blood through the lungs, and not as generally supposed on the increased density of that fluid, consequent upon the loss of its serous portion by vomiting and purging; indeed if we examine carefully into the symptoms of collapse we shall observe they are not of such a character as the mere loss of the fluid portions of the blood would induce; not but what the removal of so much serum by the intestines must influence the condition and tend, to a certain extent, to increase the density of the circulating fluid, still it cannot be to such a degree as to prevent its flow, even through the smaller capillaries.

When placing before the public the reasoning which has led to these deductions, I hope to be able to prove that the pathological condition of collapse in cholera is nothing more nor less than the diminished flow of blood from the right to the left side of the heart, and that this diminished flow is consequent upon impeded pulmonary circulation, the result of atmospheric influence, nay, more, that the purging and vomiting are no other than the curative process, set up by nature, for the elimination of morbid matter received into the system—but of this hereafter.

It will be observed in the above brief review of collapse in Cholera that the choleraic atmosphere has been spoken of as containing a morbid poison, and also of being deficient in oxygen and ozone, this on reconsideration I feel in no way disposed to alter; the atmosphere capable of inducing Cholera doubtless contains a specific morbid poison of some description or the other, and observation shews us, be that poison what it may, one great effect of it is to diminish the supply of oxygen and ozone to the circulating fluid, to such an extent, as to seriously derange some of the functions of life; one brief example of this shall, for the present, suffice.

Free oxygen in the blood is required for the elimination of the bile and of the urine, but it takes no share in the secretion of milk in the breasts of women suckling—here the blood readily gives out its casein—its sugar and its oil, the essential ingredients of milk, without the aid of oxygen,

and many* are the cases on record of parturient women having become the subject of Cholera dying in collapse, the third or fourth day after delivery, with the breasts considerably distended with milk, while the liver and kidneys, have for many hours previous to dissolution, refused their office.

TREATMENT.

If the above views respecting Cholera be correct, it follows that the indications of cure must be evident enough. In considering the treatment, however, it would be desirable to divide the subject into simple Diarrhoea, generally the forerunner of the disease.

Choleraic Diarrhoea which we shall designate the Diarrhoea accompanied with cramps and vomiting, and Cholera itself by which we mean Diarrhoea with collapse.†

SIMPLE DIARRHOEA. When Cholera occurs as an Epidemic in a district, it rarely happens that any one altogether escapes, some of course suffering to a greater degree than others. Even the most robust, and those who pride themselves in being exempt from its influence, will acknowledge, when questioned, either an altered condition of some secretion, or a degree of heaviness or lassitude, slight loss of appetite, with occasional acid eructations, or unpleasant taste in the mouth at rising. The tongue will be found furred and the hands hot.—Others again will often consult their medical adviser concerning a disagreeable feeling in the bowels with noise and rumbling, with occasional griping and irregular action. Question these closely, and they will tell you the bowels are regular, but 'perhaps not so comfortably relieved as usual;' that the urine is scanty

* During the late epidemic Cholera in the Mauritius, several women with children at the breast, fell victims to the disease, having the secretion of milk to within a few minutes of their death, and some are reported as having the breasts full after death. The following is from a Government report—"Hearing that a woman had been taken ill this morning, we visited her and confirmed the disease. Her surface was cold; as also her tongue; pulse flickering; had been purged copiously seven times. We saw the stools which were like rice water. She had had no vomiting or cramps. She was passively suckling her child when we saw her. We considered her state to be very precarious. It was she who attended the child who died on the 23rd instant. She died the same night." Page 110. Report of Committee appointed by Government.

† This is the practice adopted by Dr. G. Johnson and for practical purposes is most convenient.

and high colored and somewhat offensive; that the appetite has failed them for some days. While a third will complain of many of the above inconveniences to which is superadded frequent calls to stool and copious evacuations of a dark offensive character. Of the slight uneasiness mentioned in the first instance, but little notice is taken, the subject of it, unless of nervous temperament, often shakes it off without any special notice, and even when it has progressed to the second division, many are prone to disregard the warning and being engaged all day take no note of mischief that is so insidiously creeping upon them, until they are suddenly brought up by a smart attack of Diarrhoea. But by the more prudent, a medical man is generally consulted previous to the Diarrhoea setting in, who by judicious and not over-officious treatment may ward off the impending danger. For the most part a mere attention to diet and the moderate use of beer and wine with exercise will be all that is required, the only medicine necessary being a slight tonic containing some preparation of iron with some bitter infusion, such persons should be cautious not to expose themselves to the night air and not to get abroad too early in the morning. When Diarrhoea has supervened on no account should it be checked, but on the contrary encouraged; mostly this purging will be found, in the first instance, to have been induced by an accumulation of fecal matter within the bowels in spite of the vociferation of the patient that the bowels have been relieved regularly every morning, a point on which he professes to pride himself of being so very particular, still the bowels will too often be found to be enormously distended and loaded. Doubtless under these circumstances an aperient is indispensable and for the purpose castor oil will be found the most pleasant, one or two doses of which will generally suffice; the relief however would be expedited by a copious enema of warm water, only Saline injections and Saline aperients are at this early stage particularly to be avoided, and indeed every thing that is likely, by its absorption, to alter the condition of the blood. In addition to the above, the functions of the skin deserve attention, those that had not been in the habit of wearing flannel should now resort to its use and amongst those with whom its wear has been habitual an extra fold around the liver and abdomen will be found beneficial.

But it does not always happen that Diarrhoea is the result of constipation, nor does it follow even when previous con-

stipation appears to have been the exciting cause that purging will yield simply to the free evacuation of the bowels.

When this is the case and Cholera is known to be epidemic in the neighbourhood we may fairly conclude it is the result of atmospheric influence, that the disease is progressing and that Cholera will sooner or later supervene unless relief be speedily obtained. But how are we to obtain this relief? Nature points to us the course she adopts and as plainly as possible invites us to follow her example. The poison received into the system from the atmospheric air inhaled, she exerts her utmost to eliminate through the medium of the mucous membrane of the intestines and purging is set up. The stools will at first generally be found in every particular natural both as to appearance and smell, the food properly digested and the supply of bile, if any thing more free than otherwise, the only observable difference being in the consistency of the evacuation. Here the indication of cure is plain also, either assist nature by encouraging the secretion from the bowels and procuring its discharge early or leaving her to work her own will, the former of which is expected of us and is most readily effected by castor oil in moderate but repeated doses. Here the error into which we are most prone to fall will be that, in compliance with the solicitation of the patient and his friends, we attempt to check the diarrhoea by opiates, antacids and astringents after the bowels have been once or twice freely emptied, under the impression that, having removed the offending matter by the oil, we must allay the irritation of the mucous membrane of the intestines to which its existence and accumulation have given rise, forgetting the main point that the offending matter exists in the atmosphere, which is being constantly imported by the lungs, and eliminated by the intestines.

It would be as well thus early to remark that in the treatment under consideration *no half measures are admissible*. If we look for success, we must either acknowledge the justness of the reasoning as to the pathological condition of cholera and its premonitory diarrhoea or abandon it in toto, if we acknowledge it we must at once strike out the whole class of narcotics and astringents from opium in any form to ice and iced water and consider mild aperients of which* castor oil perhaps is to be preferred, as out sheet

* Rhabarb and Jalap where castor oil is objected to will answer very well.

anchor. In the diarrhoea now under consideration slight action on the bowels should be kept up by the moderate use of the oil after the first copious evacuation by that aperient. The diarrhoea will generally be found to subside after the second or third dose but it is apt to recur in those constitution most readily affected by the choleraic poison.

In such cases castor oil in $\frac{1}{2}$ ounce doses taken twice during the day, if resorted to early, will ward off the threatened danger and carry the patient safely on through the epidemic. But it is seldom that the physician is consulted until the condition of the system has relapsed into choleraic diarrhoea until the purging, the vomiting, and the cramps have excited alarm, both in the patient and his friends. Here the stools will be found loaded with fluid though still containing fecal matter, and devoid of that smell so peculiar in the more advanced stages of Cholera. In this instance the use of the oil must be more liberal and the doses more frequently repeated, and until the cramps have subsided, which will generally be found to be the one first symptom of amendment. Should the vomiting be only occasional, and the sense of heat and burning in the epigastric region considerable, the treatment may be commenced with a smart emetic of mustard and water, or scruple doses of Ipecacuanha, and its effect encouraged by drinking freely of warm water,* after which castor oil, in half ounce doses, every half hour should be given; if the first dose be immediately rejected let a second be administered and even a third; it is probable some portion will pass into the intestines, though the majority may be vomited. The oil may now be continued for successive half hours, care being taken not to induce excessive purgation but at the same time that sufficient oil should pass into the bowels. A very considerable quantity can be taken without exciting any apprehension. Dr. Geo. Johnson mentions several successful cases where from twenty to thirty ounces of castor oil have been taken in four days, and two cases, where the enormous amount of thirty-three ounces was consumed in the like period, both cases recovering. It is not generally speaking the purging that is to be feared, though it may excite alarm in the patient nor

* Dr. Fryers of Wolman, Mauritius gives from 8 to 12 quarts in as many hours.

will the vomiting add much to the amount of danger to be apprehended. In one case, a female, when the purging had been considerable, and thirty ounces of oil consumed in five days, vomiting occurred, in severe paroxysms, one hundred times in forty eight hours, but the exhaustion was comparatively trifling, this patient recovered. Choleraic Diarrhoea during the epidemic in London in 1853 and 1854 was found to be more fatal than Cholera itself, the return being in three months 11,495 deaths, whereas in Cholera, that is diarrhoea with collapse, the deaths were found to be 4267 during the same period. To assign a cause for this would perhaps be difficult, still it proves without doubt diarrhoea is by no means a disease of little importance.

By pursuing the plan of treatment above laid down I am disposed to think but few cases would be allowed to go into collapse, and in a great majority recovery certain. The first case that came under my notice was in 1854 and made a great and lasting impression upon me as to the facility of cutting short the disease.

Mr. C. Aet 42 a clerk in the Government Office Rangoon, was attacked with vomiting and purging shortly after reaching his office and obliged to return home. After suffering for four or five hours I was sent for, and found him to be the subject of Choleraic Diarrhoea. He had vomited freely and the bowels had been copiously acted on. His wife stated that the first stools passed after his return home, contained fecal matter and were not particularly offensive, but that latterly they had become only like dirty water. The night pan contained several pints of the usual rice water flocculent stools having a stale fish like smell, countenance anxious, eyes sunken, breathing slightly oppressed with occasional sighing, tongue clean, pulse at wrist 48, small and very compressible; no discoloration of the skin and the extremities of fingers but slightly corrugated; hands and feet below the natural temperature but not cold; at times was restless, sometimes covering himself with bed clothes at others refusing even the weight of the sheet. As this person had been several times since his arrival in Rangoon, under treatment for different ailments, the anxiety and apprehension of his family had not as yet been roused, and I was most desirous no alarm should be created though fully prepared to see the case go into collapse and terminate fatally, as unhappily had been the result, in a very great majority of similar cases admitted on board the *Tubal Cain* during the late campaign. However as the

management and responsibility of this case was entirely my own, I was resolved to put the treatment by aperients to the test, and certainly the disease never presented itself at a more favorable stage. Castor oil made into an emulsion with mucilage and disguised by Camp. Tint. of Lavender was given in half ounce doses and repeated every half hour until free purgation was induced.* In two hours three copious evacuations had been passed, but little changed from those to which attention had been drawn at the previous visit; he had not vomited, nor was there any heat or uneasiness about the epigastrium to lead one to suppose the stomach was considerably congested, or to imperatively need the use of an emetic, and fearing to create alarm none was given. The condition of the patient was in other respects no ways altered. The castor oil was continued at intervals of one hour, and the slight thirst that existed, was allayed by toast-water of the temperature of the apartment. At 4 o'clock p. m. had vomited once, since last report, was much less restless, had been purged twice, and passed some urine he thinks with his stools, but does not recollect, says he feels a stiffness in the calves of his legs, but has had no cramps. Now for the first time the friends suspected cholera and I had much difficulty in inducing the wife to continue my remedies, assuring her he would get better and praying she would not resort to any of the numerous nostras with which she had been plentifully furnished before leaving Calcutta. The oil mixture was continued two hours longer and on my third visit at 8 o'clock p. m. I had the gratification of seeing a marked improvement in the countenance of my patient, the sunken appearance of the eye was much lessened, pulse 98, more full, and the face and neck was covered with a warm and somewhat free perspiration; the breathing was free and no sighing had been remarked since my last visit. He had had but one stool and that was feculent and a free discharge of urine took place while on the night chair, another dose of the mixture was again given with the direction that it should be repeated in four hours.

From this hour the recovery was most satisfactory and rapid, the hands and feet became warm, the countenance resumed its natural appearance, all inclination to vomit ceased, two stools were passed during the night both feculent,

* 2 o'clock p. m.

and at sun rise he might fairly have been pronounced convalescent, in three days from the attack this man was at duty. Now in this instance nothing but the castor oil was given in the shape of medicine, the nourishment being simply toast-water and arrow-root, until re-action set in. Had calomel and opium, chalk mixture and catechu and a liberal supply of brandy and other alcoholic stimulants been resorted to, this case would most undoubtedly have gone on to complete collapse and terminated in all probability, as its predecessors did only eighteen months before.

It is not surprising such a case as this should make a lasting impression when it is remembered how many had died in my hands under a mode of treatment which I fearlessly assert, only tended to hasten a fatal termination, a reflection, by no means pleasing—the sin however did not rest with me.

Now pass we to the consideration of cholera itself, namely diarrhoea with collapse. In this state it is too often that the medical man is first called upon, the vomiting and purging have existed some hours, and not until the collapse is complete, is assistance sought, when it will mostly be found that brandy with some preparation of opium has been freely administered. Our object still should be to eliminate the poison through the mucous membrane of the intestines, and to remove as speedily as possible the secretions contained therein; indeed all that has been advanced in the treatment of choleraic diarrhoea, is applicable here. On being called to a case of cholera our first inquiry should be as to how long the patient has been ill, and then as to what remedies have been resorted to. If the vomiting is found to have been trifling, let an emetic of salt, mustard and water be immediately given. This will operate speedily and remove any opiate or alcoholic stimulus that may have been administered by over-anxious and officious friends. That excessive heat and burning that almost invariably exists about the epigastrium, may be relieved by the application of mustard over the region of the stomach, and the accompanying thirst allayed by drinking cold water, not iced, which may be taken *ad libitum*. Ice and iced water are most grateful to the patient, but they must on no account be resorted to too frequently, if at all, as they only tend to astricture the mucous membrane of the stomach, and thus check nature's best efforts. This sense of weight and burning, so very dis-

treasing, is the result of congestion of the stomach, which congestion is only to be relieved by the free secretion from its mucous membrane, and this the iced water checks; the water drunk should be of the same temperature of the surrounding atmosphere in the room.

It does however occasionally happen that vomiting is so excessive as to materially interfere with the treatment, the stomach obstinately refusing to retain the remedies prescribed, sufficiently long to permit any portion of them to find their way into the bowels; in this case iced water and ice may be resorted to with advantage, small pieces of ice may be swallowed whole and immediately followed by the Castor Oil or any other aperient that may have been prescribed. The sedative effect of the ice will enable the stomach to retain the Oil sufficiently long for a portion at least to pass into the bowels. The cramps which so distress and wear down the strength of the sufferer, may be relieved by rubbing the part affected with an embrocation of Olive oil and Chloroform, in equal parts. bottles of hot water should be applied to the arm pits and the feet and legs: and when the collapse is very considerable, the hot air bath may be resorted to but not continued beyond half an hour at a time, and the heated air that is brought into contact with the surface of the body, should be impregnated with ozone. Dr. G. Johnson objects very strongly, and with great justness, to the use of the hot water bath during collapse, assigning as a reason that it materially interferes with cutaneous respiration. On the use of Castor oil nothing more need be added to that already advanced, while on the treatment of Choleraic Diarrhoea, save and except that it must be more freely administered and the contents of the intestines more effectually removed, and this even after re-action has taken place, for the slightest accumulation of the intestinal secretion may induce a relapse.

When alluding to the state of the atmosphere to which the whole phenomenon of Cholera has been ascribed, we remarked that there was a deficiency of either oxygen or ozone or both, and that one or both of these elements were required for the well being of the system, that some of the secretions of the body could not be carried on without them; that the bile and the urine were mainly dependent upon these gases for their elimination. Now if that really be the case and there is much to be adduced to prove it is so, the

condition of the atmosphere inhaled by the patient, demands our serious attention, and I am disposed to think great good is to be effected through this medium. We know that pure oxygen gas has been inhaled by Choleraic patients and condemned as useless, and well it might—indeed it is worse than useless, for when the system is so loaded with carbon, the rapid combustion within the body, which must necessarily accrue from the absorption of an enormous amount of oxygen, would not only tend to depress the functions of the brain and nervous system but most certainly destroy life. It is therefore proposed that, in a moderately ventilated apartment, both oxygen and ozone should be somewhat freely generated, one at either end of the room, which gases mixing freely with the atmospheric air, are received into the lungs, in such proportion as will effect the circulating fluid gradually, yet effectually.

The respiratory power of the skin should be assisted by spunging the body at long intervals, freely with water, particularly amongst the poorer classes when first admitted into hospital. The covering of bed clothes should be so light as to admit of a free circulation of air about the body, but not to chill, and the clothes should be frequently changed, particularly when soiled.

Blood-letting in certain stages of the disease, and conditions of the patient, may be practised with advantage, when the respiration is so labored, and the right side of the heart so gorged, as to threaten suspension of the action of that organ. It will, however, require much patience and perseverance to obtain sufficient blood as shall relieve the circulation, in consequence of the paucity, the thickness and tardy movement of that fluid. To obtain blood under these circumstances, a free opening should be made in each arm, the limbs having previously been well fomented with hot water and flannels, this fomenting should be continued during the operation, and the body kept recumbent; at first no blood will flow, but by heat and rubbing a few drops will shortly pass, and the flow will be found to increase in freedom as the blood exudes. Dr. G. Johnson, suggests that a full dose of Liq. Ammonia in water should be given before the operation and repeated from time to time. It is however to be remarked that few cases occur where venæ sectio is admissible and even in these few much nicety of judgment is required.

As regards the use of stimulus, the preparations of æther

and Ammonia will often be found of great utility, but Brandy and all alcoholic preparations are strictly to be prohibited.

Now in spite of all that has been advanced above, in spite of the very best directed efforts, no permanent good can possibly accrue unless the most strict and perfect nursing is enjoined, and the most minute instructions enforced with regularity and precision. The apartment should be carefully ventilated, all stools numbered and removed immediately after they have been passed, the body clothes and bed coverings renewed every second or third day at most, and when soiled, fresh ones immediately supplied; a jug of drinking water should be always present in the room that the water to be drunk shall be of the same temperature as the atmosphere. A trust-worthy apothecary should be in constant attendance and during the continuance of an epidemic, relieved every three hours, each patient being seen every hour, or more frequently if necessary. To obtain an accurate account of how each patient has progressed between the visits of the medical attendant, a card of the following description should be suspended at the head of each bed and the time of taking the oil and of passing each stool or vomiting, duly and accurately noted as well as the quantity of fluid passed.

*

Date.	Number and Name.	Hour of taking Oil.	Hour of Vomiting.	Hour of Furgung.	Quantity of liquid passed.		Remarks.
					By Vomit.	By Stools.	

* A card somewhat similar to this is in use at King's College Hospital and has been found invaluable.

Although much above has been stated having reference to the treatment of cholera, I would beg to remark that it is only to general principles that allusion is made. The physician must of course be guided by circumstances, but having the pathology of the disease constantly in view. Neither should it be supposed that Castor Oil is a specific for cholera, it is only selected as being an aperient most mild in its action and at the same time most efficacious in removing the contents of the bowels.

APPENDIX.

WHAT is Ozone? It is supposed to be a peculiar form of Oxygen produced by electricity; "a change analogous to that which the solar rays bring forth in chlorine by rendering its affinities more powerful." It was said to have been discovered by M. Schönbein in 1851, but such is not the case, for the discovery of this gas took place as far back as 1785, and the merit of it is due to one Van Marum who, with a large and powerful electrical machine, excited sparks through a tube filled with Oxygen gas. After some 5,000 sparks the Oxygen acquired a strong smell which he described "to be clearly the smell of electric matter." From that period to 1840, no further allusion appears to have been made to this gas, but in that year Professor Schönbein, while decomposing water by means of a galvanic battery, remarked that the Hydrogen gas was accompanied with a peculiar smell; he was unable at the time to ascertain what this new product was, whether a simple or compound body, but gave it the name of Ozone. He however continued his researches and in 1851 came to the conclusion, after a series of experiments in which Messrs. Martignac and De la Reve assisted, that Ozone is nothing else than Oxygen in a peculiar state of chemical activity impressed upon it by electricity. Thus then Ozone is an odorous gas and manifests itself after repeated electrical discharges—is extensively generated during Thunderstorms, is an integral part of the atmosphere, and is necessary for the due fulfilment of some of the important functions of animal life; it has the power of neutralizing malaria, is found to abound in districts where Influenza rages as an epidemic, and to be deficient and often totally wanting during the invasion of Cholera. M. Schönbein remarked whenever Cholera prevailed in Berlin, to any great extent, the atmospheric air was devoid of Ozone. Dr. Beckel observed the same at Strasburg, while Dr. Billard of Corbigny, asserts that "the diminution of Ozone in the atmosphere is the first cause of Cholera, and that this modification of the air brings forth a change in the animal organisation, in consequence of which the liquid contained in certain vessels and the substances contained in the digestive tubes, are withdrawn from vital action and only remain subject to the forces by which inert matter is ruled."

Who can forget that fearful visitation of Epidemic Cholera that prevailed at Kurrachee in Scinde during the summer of 1846, when from the 14th to 23rd, of June, no fewer than 399 cases occurred in one regiment alone, H. M. 86th Foot, of which number 235 died! The official report says:—"The state of the weather was remarkable from the 5th to the 21st of June when a heavy thunderstorm and fall of rain caused an improvement for a day or two; after which the weather again became, and continued as bad as before, until the 28th, when a heavy gale, with much rain, came on and continued for several days, the dew point and the thermometer fell and the disease ceased."

"On the 14th of June a close, calm, oppressive day—two cases were admitted in the morning; and after the men had dined, and during the afternoon, cases of cholera of the worst description began to come into Hospital at the rate of three and four each hour, and by next morning, from fifty to sixty cases had been admitted. The disease continued to spread with appalling rapidity, intensity and fatality; so that by the morning of the 18th there were 313 admissions, and 174 deaths! By the 22nd sixty eight more cases occurred; and to the 30th, inclusive 18 other cases, making in all 399 admissions within 15 days, of which number 235 died."

The 60th Rifles and the 1st Bombay Fusiliers also suffered severely but not to the same extent.

It will be observed in the above extract that from the 14th to the 21st 381 cases were admitted—that on the 21st a *thunderstorm occurred and the ravages of the disease at once abated* and that from the 22nd to 30th there were only 18 admissions—that on the 28th there was a *severe gale*, doubtless accompanied as all gales at that season would be with thunder and lightning, and *the epidemic at once ceased* for no further cases were reported.

Now, was it the absence of Ozone in the atmosphere that induced the disease at Kurrachee, and was it the generation of Ozone by the thunderstorms that put a stop to it?

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THE MODERN PATHOLOGY AND TREATMENT

OF VENEREAL DISEASES.

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MDCCC.LXI.

The following Summary of the progress made within the last thirty years in the Pathology and Treatment of Venereal Diseases originally appeared in the *Edinburgh Medical Journal* as a review of some of the best French and English works upon this subject.

I have reproduced it in this form for the use of those gentlemen who have done me the honour of attending my Lectures. At the same time, perhaps, it may prove not unacceptable to others whose limited time and opportunities have prevented them from fully investigating the subject.

10, CHARLOTTE SQUARE, EDINBURGH,
April 6, 1861.

PART I.

ANDREAL long ago said that syphilis was so systematic, so symmetrical, that it may serve as a key to all pathology; and if pathology in general has made great advances in the last thirty years, no less has the pathology of venereal diseases made gigantic strides.

While it is a subject compact within itself, it has all grades of pathological processes connected with it. Though a specialism, it includes every organ, every tissue, in its comprehensive domain. If the knowledge of some diseases can only be acquired by the study of their literature, we have *the venereal* everywhere; for where do they not creep? They are rampant in our towns; we find them in every hamlet; the cottage no more than the palace is proof against them. Innocence and purity are tainted—nay, the marriage-bed is not exempted from the ravages of this foul plague.

These diseases, then, the curse and plague-spot of civilisation, have, for many an age, been the same as now we see them. There is certainly a period to which the origin of the venereal disease is referred; but any one who dips into the early literature of venereal diseases, that *mare magnum* of wildest superstition, will feel that he is instantly far beyond his depth, and will gladly retreat to the firm beach of his own observation to watch the tide-ripples which mark the course and progress of these maladies in the present day. The fact is, venereal diseases are probably the same now as ever!—only we know more about them now than formerly. They are no longer mysterious in their commencement, or various in their progress, and doubtful in their effects. The cloak with which shame, superstition, and ignorance had shrouded them has been torn away; and now we see them in all their nakedness—ghastly enough, no doubt, still obedient to laws as are other diseases, and hence subject to our professional rule, and more so, too, than most diseases with which we have to combat. What, then, was the condition of the pathology of venereal affections thirty years ago?

They owned one common source: *that* everybody acknowledged—they resulted from impure intercourse; but this common trunk bore various flowers, and still more varied fruits. There was gonorrhoea; and there were sores upon the genitals; and there were glandular en-

largements; and there were constitutional affections with cutaneous eruptions. Were these all the result of simple filth? were they the product of one common virus—the venereal? and were they capable of reproduction under a different form in another individual? or had they each a separate origin? All these questions were virtually unanswered thirty years ago. The views of the illustrious John Hunter were those principally received at that time; and in his work published in 1786 he most distinctly advocates the identity of the source of gonorrhoea, chancres, and lues venerea; while Fabre, Pressavain, Cullerier (senior), Capuron, Lagneau, Vigaroux, Gibert, and Devergie not only supported these views in the general, but adduced their large experience in proof of the justness of the dogma, that all venereal diseases were identical in their nature, the principle being the same in all, and the difference being only one of form, which they believed to be attributable to individual peculiarities, to the site, and to the greater or lesser intensity of the irritation produced by the action on the tissues of the body by the one common cause—the venereal virus.

No doubt there were dissentients to this doctrine in every age; and long even before John Hunter's day the non-identity of gonorrhoea and syphilis had been very distinctly indicated. John Hunter, in fact, alludes to this himself; and it would appear that it was to the Graduation Thesis of Dr Balfour upon this subject, published in 1767, that he pointed. But the doctrine received little or no countenance; and it was not until the year 1793 that we find any man of distinction giving his support to the doctrine of the non-identity of gonorrhoea and syphilis. In 1793 Benjamin Bell published his work upon venereal diseases; and in the preface to it we find him apologetically introducing his views upon the subject in these words:—"The opinion which I have ventured to support, of the difference between the matter of gonorrhoea and that of lues venerea, will no doubt be censured by many. They ought, however, to recollect, in matters of opinion which cannot be proved by demonstration, that some uncertainty must always take place; and, before censuring with severity the opinions which others may suggest, they should consider whether their own may not be equally liable to objection."¹ But Benjamin Bell did not rest satisfied by asserting, and endeavouring to prove by analogy and argument, that gonorrhoea could not produce chancres or a lues venerea; he also maintained that the pus from the surface of a chancre, or from a secondary eruption occupying a mucous or cutaneo-mucous surface, could not produce a gonorrhoea—that, in fact, a gonorrhoea, though a local, was a *specific* disease, and was only capable of production by means of its specific virus—the gonorrhoeal virus.

Hence the terms Virulent and Simple Gonorrhoea, still so frequently employed both by patients and practitioners.

¹ *Treatise on Gonorrhoea Virulenta and Lues Venerea*. By Benjamin Bell. Vol. I., pp. ix. x., pp. 1-43.

In reviewing carefully, then, the state of opinion thirty years ago with reference to gonorrhoea and syphilis, it will be found that the facts adduced on both sides of this essential question, which formed the turning-point of all progress, tended to prove the following propositions:—

1st. That gonorrhoea was very much more common than chancres.

2d. That a purulent discharge from the urethra was sometimes, though rarely, followed by constitutional symptoms of syphilis.

3d. That the inoculation of purulent matter derived from the urethra sometimes, but rarely, produced chancres in the part inoculated.

4th. That irritants—chemical, mechanical and vital—sufficed to produce a discharge from the urethra.

Such facts, it must at once be obvious, left the whole question of the identity of gonorrhoea and chancres and syphilis quite undecided. The circumstances under which a discharge from the urethra was followed by constitutional syphilis, by suppurating buboes, by rheumatism, by swelled testis—and the connection between these morbid conditions, was quite undetermined; in other words, the commencement, progress, and termination of a case of gonorrhoea were altogether problematical. The prognosis was a matter of hap-hazard, and the treatment was purely empirical. Nay, the specificity of syphilis—its cause, its effects, its treatment—were all undetermined matters, in consequence of a scientific scepticism arising out of the too ready credulity and inaccurate and loose observation of preceding authorities.

In 1830, M. Ricord was appointed surgeon to the Southern Hospital of Paris, from which appointment, after thirty years of the most signal service to science and pathology, after making a reputation which is not only European but wide as the medical profession itself, he, in the zenith of his fame, in the height of his popularity, has retired to enjoy in the private practice of his profession that comparative repose which so long a period of hospital service, of onerous public duties as a teacher, and of zealous warfare in defence of his opinions and doctrines, was ill calculated to afford. Finding things, then, in this unsettled condition, M. Ricord set himself, by means of accurate experimentation, to study the cause of syphilis. The question he had to decide was, Had syphilis a special cause? was there a syphilitic virus? or did all venereal diseases originate from one common source?

Hunter had, long before, shown that the pus of a chancre, when introduced into the tissues of the body, reproduced a chancre. The observations of Bell and of Hernandez sufficiently confirmed that opinion. But then the counter-observations of Caron, Bru, Jourdan, Devergie, and Desruelles gave them a flat contradiction.

Where, then, was the source of fallacy? The use of the speculum showed that apparently simple purulent discharges from the vulva

were very frequently accompanied by chancres within the vagina, just as gonorrhoea preputialis is frequently dependent upon chancres concealed within the foreskin. The true source, then, of the purulent discharge, employed for purposes of experimental inoculation, required to be absolutely determined if the results were to be noted with anything like certainty as absolute facts. Every and any pus from the vulva or urethra, every and any pus from within the cavity of the phymosed prepuce, could not afford unexceptionable results, unless the existence or non-existence of chancres was absolutely determined by preliminary inspection.

A rigorous system of preliminary diagnosis, joined with an extensive employment of experimental inoculation, has, in the hands of Ricord, proved, with reference to gonorrhoea—1st, That muco-purulent matter, obtained from a non-ulcerated mucous surface, gives rise to negative results when introduced into the tissues of the surface by inoculation; and 2d, and conversely, when an apparently simple gonorrhoeal discharge produces chancre by inoculation, it may be certainly predicated of such purulent discharge, that it has been obtained from a surface upon which a chancre exists.

The next question requiring solution was, Whether or not a gonorrhoeal discharge required a specific virus for its production, as we have seen was maintained by Benjamin Bell? Investigation and observation have served to prove that any irritant which suffices to set up inflammation of any other mucous membrane is quite capable, when introduced into the urethra, of exciting a gonorrhoeal discharge; that, in fact, any irritant, whether chemical, physical, or vital, is quite sufficient to give rise to a gonorrhoea, and that the majority of females who communicate a gonorrhoea do not suffer from it themselves.

Gonorrhoea, then, having no specific cause, has no specific progress. It has no period of incubation, properly so called, between the application of its cause and the commencement of the symptoms. A period of time certainly elapses, but it has no approach to being a definite one—it may be hours, it may be days. Accordingly, any deductions made as to the real source of the affection by the length of time which may have elapsed between various possible causes and the first appearance of the discharge, is likely to give rise to nothing but the most erroneous results, oftentimes affixing suspicions upon persons perfectly innocent.

Neither has gonorrhoea any specific site. The urethra is the most common site for a gonorrhoea the result of sexual intercourse in both sexes; but it is just as absurd to limit its site to the fossa navicularis in man, as Hunter did, as it is to attempt to make distinctions as to its being a true or spurious gonorrhoea in a female by the part of the glandular apparatus of the vulva which is principally and primarily affected. In both forms of specific venereal diseases we shall find corresponding glandular affections; but there is nothing specific, or even constant, in the bubo which sometimes

accompanies gonorrhoea; it is a simple bubo of irritation. In the epididymitis which follows neglected cases of gonorrhoea, which some have thought indicative of the existence of a specific poison, we can see nothing but an illustration of the acknowledged law of extension of inflammation by continuity of tissue.

Then, again, the whole history of gonorrhoeal ophthalmia, and of gonorrhoeal rheumatism, tends to prove that there is nothing more specific in the former than in the inflammation of the urethra, which has produced the purulent discharge, which by direct contact has excited the conjunctival irritation. In the latter we only observe a tendency in certain irritations of the urethra of the male so to influence the sympathetic system as to disorder the functions of distant parts, and so produce what is called gonorrhoeal rheumatism—an affection only met with in man, and never once observed in the female.

Cutaneous eruptions have, undoubtedly, often appeared after an attack of gonorrhoea, but they are no proof of a specific development of the disease. The fact that a man has once contracted a gonorrhoea does not, we presume, prevent the possibility of his having suffered from the indurated chancre which is the necessary preliminary of constitutional syphilis, any more than it precludes the possibility of a resinous eruption being mistaken for a secondary syphilitic exanthema by those who are not too well acquainted with the appearances and characters of either.

There is nothing, then, in all this to give even a shadow of probability to the existence of any gonorrhoeal virus, any more than there is to the identity of gonorrhoea and syphilis.

But perhaps it may be urged that there are undoubted cases in which a purulent discharge from the urethra has been followed by most indubitable symptoms of constitutional syphilis. We admit it; but at the same time we have no hesitation in asserting, that the number of cases in which patients attribute an eruption characteristic of secondary syphilis to an attack of gonorrhoea are infinitely more numerous still. Such facts seem at first sight to overthrow the doctrine which we have just attempted to propound; but more accurate observation shows that in all such cases a chancre has existed, which has been the undoubted source of the constitutional affection. This chancre may either have been concealed within the urethra, and been the source of the purulent discharge; or the chancre situated on the penis has coexisted with the gonorrhoea, and escaped observation from the comparatively small degree of uneasiness which it has produced; or the chancre has existed upon some other part of the surface, and has eluded observation. Such chancres situated on the finger, within the anus, upon the hairy scalp, among a thick bush of whiskers, within the cavity of the mouth, or in other unusual and unlikely and often carefully concealed sites, may very naturally be overlooked by any one not alive to the doctrine of the inevitable connection of syphilis with the indurated chancre.

The conclusion, then, to which we must come is, that the great majority of cases of gonorrhoea are simple or benign, but that virulent purulent discharges do sometimes occur from the urethra. These, however, invariably depend upon chancres within the canal, and not upon any specific *gonorrhoeal* virus. Such being the case, can we in any way decide beforehand, with anything like precision, upon the nature of a case of gonorrhoea, as to its *simplicity* or its *virulence*, as to whether there is simple inflammation of the mucous surface, or a specific ulcer situated upon that surface? The source of the infection, as determined by the presumption of comparative chastity, as we have already indicated, must go for nothing in any rigid examination of this question; for the chastity of any female who is unchaste in one instance may very justly be called in question in all. Nay, even when the female herself is found free from all disease, the experiments of M. Cullerier at the Lourcine sufficiently attest that she may serve as the temporary receptacle of the specific chancrous virus. Receiving it from one individual, though unaffected herself, she may hand it on to the next.

Some have laid much stress upon the period of so-called incubation of a gonorrhoea as a means of diagnosis. There cannot be a doubt certainly, as we shall have occasion to mention afterwards, that a comparatively long period may exist between the inoculation with the virus of an indurated chancre and the appearance of the characteristic sore; but as this is not the case with the soft chancre, such a means of differential diagnosis cannot enable us certainly to decide the non-existence of urethral chancres. As little does the violence of the symptoms serve as a sure indication of the *virulence* of a gonorrhoea; for, as a general rule, the urethral discharge which is attended by least pain and least purulent matter, is most likely to be produced by an indurated chancre, and therefore followed by constitutional syphilis.

There are symptoms, however, which, when duly appreciated, constitute a very valuable means of arriving at something like certainty with regard to the existence of urethral chancre. The first of these is, that the discharge usually consists of a sero-sanguinolent pus, with but little mucus, therefore usually scanty. The mere admixture of blood, however, in the discharge, is not of itself a sufficient indication to rely upon; for, in simple gonorrhoea, the rough use of instruments—such as syringes for injection, or bougies—the employment of irritating lotions, the presence of chordee or persistent erections, may give rise to this symptom without the existence of any chancre of the canal. The second is, that the pus, when inoculated, gives rise to a chancre. This, of course, is most positive evidence; and were it justifiable to practise inoculation in another individual who has never suffered from constitutional syphilis, or were chancres in all stages of their progress equally capable of inoculation, it would be absolute in all; but, unfortunately, the chancre with an indurated base is not capable

of reproduction, as such, in the individual who has already suffered from it, and all chancres lose in time their specific characters. How, then, can we determine upon the existence of an indurated chancre of the urethra which is the certain antecedent of constitutional syphilis?—for this is the result which all authors who have entered upon this subject have sought most to arrive at. We have that power in some degree; for, certainly, the feeling of an *indurated* point in the course of the urethra, to which the patient refers all his symptoms, when markedly present, is very characteristic, but it must be carefully distinguished from the enlargement consequent upon suppuration within the cavity of one of the follicles opening into the lacuna; and when this induration is associated with the multiple bubo, symptomatic of the indurated chancre, our diagnosis may safely be decisive of the certainty of an outbreak of secondary syphilis within a limited period, the case being one, not of gonorrhoea, but of concealed urethral indurated chancre.

Turning now from these results of pathological inquiry, let us look, in passing, at the most approved methods of treating gonorrhoea. The affection is non-specific; therefore mercurial treatment is quite unnecessary for the cure of either the inflammation of the mucous surface or of any of its results.

Some sure method of prevention, by which the practitioner may pander to the vicious desires of those who would avoid the consequences of their own temerity, although often enough spoken of, does not exist. M. Diday, to be sure, has expended much ingenuity in the invention of a syringe for urethral injection, with a piston and handle closing down like the blade of a clasp-knife, suitable for the waistcoat, and designed to be a constant pocket companion, always ready in time of need. All such measures, fitted to create a feeling of false security in the minds of those whose fear of consequences might have compelled them to put a bridle on their passions, will be found by them, when too late, nothing but a delusion and a snare.

Some years ago, the so-called *abortive* plan of treatment of a gonorrhoea had its share of professional confidence. A solution of nitrate of silver, of the strength of ten grains of the salt to the ounce of fluid, was injected into the anterior part of the canal, with the supposed effect of destroying the cause of the disease, of cutting short commencing inflammation, and substituting in its place an inflammatory affection which runs its course more quickly and with less irritation. Experience has, however, proved that in the male subject, when employed after the characteristic gonorrhoeal discharge has been established, its use is not unattended with serious risks, such as ulceration of the canal, perineal abscess, and inflammation of the prostate and bladder; and that, when employed before the discharge has made its appearance, its use was always open to the objection that, very possibly, we were inducing an actual inflammation for one which we had anticipated on no better ground than mere suspi-

cion. At this early period of the attack, by rest and by avoiding every cause of local and general excitement, by the use of cooling drinks and diluents, starvation, and cold or warm applications, as the sensations of the patient indicate to be best, by being most grateful, much may be done to mitigate or even prevent the acute acme of the inflammation.

When, however, acute symptoms occur, blood-letting need never be had recourse to, and leeching is scarcely ever required. Rest, diluents, laxatives, diuretics, mucilaginous drinks, the hip-bath, fomentations, and the milder antiphlogistic remedies, with opiates if necessary, are all that modern experience can recommend. And then comes the time for the exhibition of those so-called specific remedies, Copaiva and Cubebs. Dirty, nauseous, permeating drugs though they be, nothing can equal them in the certainty and efficacy of their action; given together as an electuary, and taken after meals in rice paper to cloak the nauseating flavour, they are far more effectual than in soapy emulsions or sophisticated capsules. Their mode of action is a demonstration of recent date. It is not from any influence which they exert upon the system at large, or by promoting the excretion of any poisonous material from the blood, that they do good; for gonorrhoea is a purely local disease, and can only be directly benefited by local treatment. But these remedies, having been absorbed into the system from the alimentary canal, have their active principles again excreted with the urine, giving it a violaceous odour; and that fluid, impregnated with them, must, of course, come to act directly upon the inflamed surface as it is voided by the urethra. Hence it is, as experience long ago proved, that these remedies have no effect whatever in vaginal gonorrhoea or in purulent ophthalmia, or, in fact, in any suppurative inflammation of a mucous surface to which the urine is not applied. This has had ample proof in cases of gonorrhoea occurring in patients affected with partial hypospadias, when the urine, impregnated with the principles of the copaiva and cubebs, could be made to pass along the affected portion of the canal, or not, according to the will of the patient. Two such cases are detailed by M. Ricord, and carry conviction in their relation. But, while we must admit the powerful remedial effects of these so-called specifics, it must not be forgotten that sickness, vomiting, jaundice, acute resinous exanthemata may be produced, and are frequently produced, by the prolonged use or too free administration of copaiva; and that both copaiva and cubebs, when pushed in large doses, have been known to produce alarming cerebral disturbance. Such facts have induced some theoretically to recommend the direct application of the copaiva to the urethra itself in the form of an injection, so that, while its action on the part is secured, the system may be left unaffected; but experience proves that the same good effects do not accrue as from that remedy when filtered through the emunctories. Velpeau, again, has recommended copaiva enemata; but these,

though at one time in vogue, are found so dirty, irritating, and inconvenient in their administration, and so uncertain in their effects, that they may be said to be effete.

With the use of these remedies, the good to be obtained from astringent injections must not be overlooked. Gonorrhoea, as we have seen, is a purely local disease, requiring nothing but local treatment; and, as soon as the acute irritability of the urethra will bear the use of astringents, there should be no delay in resorting to their employment. Largely diluted at first, but gradually increased in strength as the diminution of the irritability may indicate; always remembering that there is a point at which the astringent ceases to act beneficially, and commences to produce an irritant effect,—then, of course, requiring that dilution of the remedy, or a few days' intermission of the injection, should be recommended. Those salts which act purely as astringents are recommended by some; while, by others, solutions containing an impalpable powder in suspension are preferred—the latter substance being presumed to act by coating the opposed mucous surfaces, and thus preventing their immediate contact. This theoretical explanation of their action is certainly borne out by the undoubted fact, that the mechanical method of treating vaginal gonorrhoea by the maintenance of a very slight degree of actual separation of the mucous walls of that canal, by means of dry lint or dusting powder, has been found, without any further measures, to effect a complete and speedy arrest of the inflammatory secretion.

It is well known that gonorrhoeal epididymitis is attributed by most patients, and by many practitioners, to the employment of injections; and, no doubt, if strong irritating injections are employed indiscriminately in the treatment of gonorrhoea, such a result may very reasonably be supposed to result from such temerity. When, however, the true pathology of epididymitis, as a sequela of gonorrhoea, is understood, it will at once be granted that, so far from exciting swelled testis, the judicious employment of injections is really calculated to prevent such a calamity. In such cases, it is well known that with the inflammation of the epididymis the discharge from the urethra is usually, for the time, either arrested or checked; and this coincidence is usually quoted as an example of that anomalous mode of extension of an existing inflammation which is called metastasis. Now, morbid anatomy has shown that, in the case of the epididymis and urethra, the extension is simply effected by the gradual progression of the inflammation along the urethra, and its extension by continuity of texture to the vesiculae and vas deferens, usually upon the left side. Hence, if by neglect of a gonorrhoea the inflammation is given time to creep backwards, the affection of the testis may be expected as a natural result; and, accordingly, the period at which we most commonly meet with this complication is from a fortnight to a month from the commencement of the discharge. It seems, therefore, inevitably the conclusion, that

if we can cure a gonorrhoea before it has had time to reach the membranous portion of the urethra, we will secure our patient from all risks of swelled testis, instead of inducing it, as has been feared, by too rapidly arresting the discharge. So true is it that a gonorrhoea allowed to follow its own course is the surest cause of epididymitis, that a burlesque of statistics has been adduced by M. Ricord, to the effect that the most common cause of swelled testis during gonorrhoea is the free administration of linseed tea. "I have in my possession," says he, "in proof of this point, several elaborate tables of statistics; and the pupils who attend my clinical lectures await with a smile my final query, addressed to every patient affected with epididymitis, 'But haven't you taken linseed tea?' to which the answer 'Yes' is inevitably returned." The natural conclusion from such statistics and such facts must certainly be, that epididymitis, like the other complications of gonorrhoea, is in no way dependent upon a revulsion, or metastasis, or any other chimerical morbid process, by which some would attempt to intimidate us in the use of means calculated to effect a speedy cure, but is produced by the continuance and extension of the suppurative inflammation; and, therefore, that the use of any means calculated to cure the discharge is the surest way to protect the patient from all risk of the occurrence of any of those disagreeable consequences.

Stricture of the urethra, it is well known, has also very frequently been referred to a similar source; but now-a-days we are wont to regard stricture rather as a consequence of a gonorrhoea allowed to run on, thus keeping up congestion of the mucous membrane and submucous tissue of the urethra, than to suppose that, by checking such pathological processes, we produce structural changes. In fact, whenever a surgeon finds a urethral discharge becoming chronic, it is a rule to examine the condition of the urethra by passing a bougie, so as to satisfy himself that such structural changes have not occurred; and, should they even not be present, the occasional passage of a bougie will be found the most certain means of preventing their formation and arresting the morbid secretion.

In spite, however, of all such treatment, a gleet discharge sometimes still continues—checked, no doubt, so long as injections are employed, but recurring again as soon as they are given up. In such cases the part affected seems to be the membranous portion of the urethra and prostate; and as no injection thrown along the canal can permeate farther than the bulb, if local applications are deemed requisite, some means must be adopted to secure the injection or astringent application acting beyond the barrier. This may easily be effected by means either of Lallemand's porte caustique, or by a catheter introduced as far as the prostate, and the injection practised through it as the instrument is withdrawn. In this way the discharge from the posterior part of the canal having been checked, the spongy part of the canal will be no longer contaminated from

behind, and the discharge from it will now be found to yield permanently to the use of ordinary injections.

In treating the gonorrhoeal swelled testis, there are three indications which it is important to attend to:—1st, To check the inflammatory symptoms. For this purpose, leeching or scarification of the scrotum, thus opening several veins, followed by hot opiate fomentations, will be found more agreeable to the sensations of the patient than resorting to the very doubtful measure of employing graduated compression of the inflamed organ, by means of adhesive strapping or collodion, from the very outset—a practice which, in even the skilful hands of Ricord, has resulted at times in sloughing of the testicle. When, however, the acute symptoms have been checked, then graduated compression will be found most satisfactorily to fulfil the 2d indication, viz., to support the congested and swollen part; while, 3dly, no time should be lost in employing appropriate remedies to arrest the gonorrhoeal discharge. This may at first sight appear a mistaken practice; for it is generally the case that, as the testicle becomes inflamed, the gonorrhoeal discharge is either checked or arrested, and, as the inflammation subsides, the discharge recurs, which might seem to indicate the propriety of using measures rather to encourage than repress the discharge. In fact, so strong a hold had this principle, of soliciting the reappearance of the discharge, taken of the minds of surgeons, that even to the present day some really do employ measures calculated to reproduce the discharge, such as introducing bougies coated with irritating substances. And it is no long period since a distinguished surgeon in a metropolitan hospital used to excite the risible faculties of his pupils, at the expense of any unfortunate suffering from swelled testis, by asking how the swelling came on; and when told by the patient that, as the swelling appeared, a "running" ceased, taking a sixpence from his pocket, he would say, "Well, my good fellow, here's sixpence to get another with." So much for the old pathology of a metastasis and its practical results. Now-a-days we believe that, as long as any discharge continues to come from the urethra, the patient is not free from the risk of the re-excitement of the epididymitis. Accordingly, the question is not, should the discharge be stopped, but, when this may be done with best success; and the answer to this must simply depend upon the period at which a patient suffering from acute swelled testis will bear the administration of cubebæ and copaiva. Whenever his stomach will bear them, he should begin to take them. The urine soon becomes impregnated with them, and the irritation of the posterior part of the urethra is in most cases very speedily allayed, and with it the tendency to maintenance of the inflammation of the testicle. In other cases, again, where there is a sort of chronic tendency to the re-excitement of irritability and swelling of the epididymis, or when the globus major and cord remain thickened and tender, giving rise to most distressing neuralgic

uneasiness, then the use of bougies, or even of the *porte caustique*, or injections of the deep part of the urethra, and the external application to the scrotum of solution of nitrate of silver, with attention to the condition of the general health, will usually effect a marked change for the better.

Although the existence of gonorrhoeal rheumatism is pretty generally admitted in this country, from the notice taken of it by Sir Benjamin Brodie in his work upon the Joints, some doubt appears to exist in the mind of several eminent writers upon the Continent as to the connection between gonorrhoea and certain forms of rheumatic ophthalmia and articular affections. The most important and recent memoir, in which it is attempted to prove that there is no such thing as gonorrhoeal rheumatism, is written by Professor Thiry, of Brussels; but as M. Rollet's more recent researches upon this subject constitute a most thorough refutation of the Professor's views, it is quite unnecessary to do more than, in a few words, to indicate the prominent facts adduced by M. Rollet with reference to this disease.

Several cases are narrated by him, in which repeated attacks of gonorrhoea are followed by corresponding rheumatic seizures; others, in which the same gonorrhoea, incompletely cured, is reproduced, and with each recrudescence of the gonorrhoeal discharge a corresponding attack of recurrent rheumatism. In all such cases it is the rule that, so far from the discharge ceasing or becoming diminished with the development of the rheumatic seizure, it is rendered more abundant during its existence; thus completely upsetting the idea of anything like a true metastasis. He further adduces proofs of the existence of a gonorrhoeal rheumatic iritis, which sometimes is substituted, at other times alternates with the articular disease, and the peculiarity of which appears to consist in the membrane of the aqueous humour being the texture principally implicated; thus making it in every respect the analogue of the affection of the articulations in which the synovial membrane is the part principally affected, and distinguishing it from the more common forms of simple or specific iritis, in which the substance of the iris is always primarily involved. In the gonorrhoeal rheumatic affection, furthermore, the exudation is characteristically copious, as was long ago pointed out by Mackenzie; but, however copious, the prognosis may always be favourable, as, under ordinary sorbefacient treatment, the flocculent lymph is rapidly removed, and vision becomes restored.

Although the knee-joint is the articulation most frequently attacked, any joint in the body may be affected; and even the pericardium, the meninges of the brain, and other fibrous tissues, have been observed to suffer. Curiously enough, this disease has never been met with in the female sex.

This immunity of the female sex from gonorrhoeal rheumatism certainly constitutes a well-marked difference between the common idiopathic rheumatism and the gonorrhoeal rheumatic affections; and, in fact, so unconnected are they, that the existence of a well-

marked rheumatic diathesis, or even previous attacks of a rheumatic kind, in an individual, appears to have no influence in determining the occurrence of rheumatic affections during the existence of a gonorrhoea. Exposure to cold or damp, the season of the year, particular occupations, constitution, temperament, age, habits,—none of these common causes of predisposition appear to exercise any influence in determining the development of this anomalous disease.

The only constant circumstance in these cases is the existence of a urethral discharge; and to this, apparently, must be attributed the excitation of the rheumatic affections. To explain the connection between this cause and its effects, two hypotheses have been proposed. The first presumes that absorption of some material from the purulent secretion takes place, and evolves itself elsewhere in the form of rheumatism. Those who hold this theory have generally described the gonorrhoea as becoming more or less checked when the rheumatism is set up—a statement which is, however, known not to hold good in almost any case; and the theory to which it would serve as a very efficient proof, has really no foundation whatever on facts or analogies. The second hypothesis would attribute to the inflammatory affection of some part of the urethra from which this copious discharge comes, a power so to influence the sympathetic system as, by reflexion, to produce the local affection of the joints; and with this hypothesis we find certain analogies coupled, such as the intermittent form of febrile excitement produced in some by the passage of a bougie, or the actual effusions into the joints, accompanied by rheumatic pains, which sometimes arise in the progress of a case of stricture of the urethra when too frequent or indiscriminate instrumentation has been had recourse to. What part of the urethra it is that resents irritation in this way, has not been particularized. Some have referred it to the bulb, some to the membranous portion, others to the prostatic part of the canal. Whatever part or parts of the urethra may possess this peripheral influence upon the sympathetic in the case of a gonorrhoea, certain it is that an instrument passed into the bladder, and retained there, in a case of stricture, is more liable to excite rigors followed by febrile reaction when fairly conveyed into the bladder, than when merely lodged with the extremity in the membranous part; and those practical surgeons who are in the habit of retaining the instrument for a time in the treatment of stricture of the urethra, usually recommend that the bougie should merely be passed through the stricture, and not lodged in the bladder.

The rheumatic affection, then, being dependent upon the gonorrhoeal inflammation for its commencement and its maintenance, so far from desiring to increase this discharge, as was the practice among the older surgeons, our object must be to arrest it as speedily as possible; for, cure the rheumatism as we may, so long as the urethritis continues, it is almost certain to relapse, and an exacerbation of the urethritis is certain to excite a fresh attack of the syno-

vial inflammation. Repose, leeching if required, fomentations, the vapour bath, and blistering, followed by pressure applied to the joint, are the local measures usually resorted to in such cases, and generally they are found to be attended with the best results. The acetate of potash, with colchicum and hydriodate of potash, have been recommended by some writers; but experience proves them to be of comparatively little benefit when compared with their excellent effect in cases of idiopathic rheumatism. Should the thickening of the synovial membrane threaten to become persistent, then, instead of repeated blistering, the *Emp. Gummos. c. Hydrarg.*, or *Emplastro de Vigo* of the Parisian Codex, will be found, when combined with pressure, to be very beneficial.

It is seldom necessary to resort to the internal administration of mercurial remedies for the articular affections. When iritis, however, exists, then no other remedy produces such speedy and well-marked effects in promoting absorption of the exudation and restoration of vision. In such cases, paracentesis of the aqueous humour, the use of belladonna, and the repeated application of blisters, will be found especially useful where the tension of the globe is considerable, and pain is a well-marked symptom.

In the treatment of purulent gonorrhoeal ophthalmia, depletory measures are found to be not only useless, but absolutely injurious. The days are past when, in gonorrhoeal ophthalmia, a surgeon would recommend that "as much blood should be taken from the arm as will flow from the vein, and the evacuation should be repeated as soon as the state of the circulation will enable us to get more." And, assuredly, we have better results now-a-days than those related by a distinguished surgeon, who says that "the only case he had seen in which the eye was saved, was that of a young woman in whom venesection was repeated as often as blood could be got from the arm. She lost 170 ounces in a few days, and looked as if every drop of blood had been drained from her body, the skin being nearly the hue of a wax candle." While the experience of modern ophthalmic surgery has certainly no equal to that which induced an Irish surgeon to say, "These are cases which defy all the usual etiquette of regular and ceremonious visits. If we wish to save our patient from the destruction of his vision, we must scarcely depart from his bedside until the inflammatory symptoms are controlled. The lancet must be hardly ever out of our reach; for if ever there was a disease in which blood must be taken away without limitation, it is this." This inflammatory affection, like that of the urethra, is a purely local one, and is in great measure maintained and increased by the presence of the purulent discharge confined within the lids acting as an irritant to the whole conjunctival and corneal surface. The old notion, that such purulent inflammations might be other than the result of the direct application of the gonorrhoeal secretion, either of the same or of another individual, to the surface of the conjunctiva, is now completely exploded; at all events, in the minds

and works of those practitioners who, with large opportunities, rely upon their own experience for facts, instead of taking for truths the observations of the older surgeons, whose minds were biased by theoretical speculations which no one is now-a-days inclined to accept. Accordingly, the indications to be attended to are,—1st, to maintain cleanliness; 2d, to apply astringents to the inflaming and inflamed conjunctiva; 3d, to soothe the pain; and, 4th, to relieve tension. These indications are carried out in practice by pencilling the solid nitrate of silver over the tarsal conjunctiva, or by applying either a solution of the salt, or Mr Guthrie's ointment, within the lids till the surface is whitened, and repeating it as frequently as the renewed increase of the discharge, and the reappearance of the red velvety surface of the conjunctiva, indicate the necessity of its re-application. Cleanliness is maintained by frequent bathing of the eye, and by syringing beneath the lids with a slightly astringent lotion, which should contain either belladonna or opium, to soothe the pain; and when the chemosis is great, and the overlapping membrane hides a circularly ulcerating cornea, then not only scarifications in the conjunctival membrane, but puncturing of the cornea and the evacuation of the aqueous humour, will be found attended by a marked relief to tension, and will for the time allay the injurious friction of the tarsal conjunctiva against the cornea, which threatened to slough had matters continued much longer unrelieved.

Gonorrhoea in the female, in its early stage, may be checked, when the vagina and vulva are alone affected, by the free application of the solid nitrate of silver to the surfaces; and if there is any pain in micturition and redness of the urethral orifice, a similar application to that canal, by means of a short porte caustique, will be found to arrest the further progress of the attack. When, however, acute symptoms have fairly set in, and such manipulations would give rise to intolerable pain, then rest in bed, warm bathing, the application of a solution of acetate of lead and opium between the folds of the labia, and similar injections up the vagina as soon as they can be borne, will pave the way for our resorting to more effectual measures; of which, astringent injections, such as alum and oak bark, the introduction of strips of lint up the vagina, and injection of the urethra by means of weak solutions of nitrate of silver, will be found attended by better success and less discomfort to the patient than any other method of treatment.

PART II.

THE specific venereal diseases which we have now to consider have very commonly been included under the name of Syphilis. This name has been derived by Fracastor, in his very elegant poem upon this somewhat inelegant subject, from a fictitious hero, Syphilus, who, in an evil hour, having insulted Apollo, brought upon the human race this malady as a fearful penalty for his temerity.¹ A more rational derivation of the word, from either *συφ-φιλία*, mutual love, or *συφ-φιλία*, piggish or impure love, naturally suggests itself, and obviously indicates that the term must originally have been designed to include all diseases which we now style venereal, that is to say, resulting from impure sexual intercourse.

Those of them, however, to a consideration of which we devoted the first part of this review, had, as we then saw, no specific definite origin, and no specific results. Although they were communicable, they were so simply because they afforded irritating secretions. But those which remain to be considered have undoubtedly a specific origin and a specific transmission. The term syphilitic has, therefore, in the language of modern pathology, been reserved for those venereal diseases which follow this undoubted specific course. But a still more rigid inquiry into the specifically communicable and the consecutive affections has separated them into primary affections or sores, which are commonly called chancres, and a constitutional infection to which the term syphilis is usually restricted.

This constitutional disease called syphilis, as we now-a-days meet with it, is in every case dependent upon the action upon the tissues of the body of a specific morbid poison, which Ricord first designated with any definite significance, "*The Syphilitic Virus*."

There was a time, however, not far distant, when many esteemed pathologists would not have patiently listened to the employment of the word virus to describe the evolution of syphilis. To such days belongs the tragic indignation of the learned and eloquent Jourdan, who, in repelling the arguments of Ricord in support of this doctrine, insisted, in the Academy of Surgery, that, call it what he would, he should not degrade the term virus by applying it to such a disease.

¹ "*Syphilitidenque, ab eo, labem dixere coloni.*"

But, while the onward wave of pathological knowledge has, to our mind, left the statement of Ricord established upon a basis more firm and sure than ever, and swept away all arguments and facts which seemed insuperably to oppose it, still, if our readers will bear with us for a moment while we compare the rigid signification of the term, "*virus*," with the condition of the pathology of syphilis at the period to which we have just alluded, we think it will become apparent that Ricord asked too much when he insisted upon the recognition of a syphilitic virus as a logical deduction from the facts as then observed.

A specific virus, in strict pathological language, is a something which of its own virtue, when introduced into the tissues of the body, infects the whole organism, and is reproduced at the part into which it was introduced in the form of purulent matter—the product of the specific inflammation, which is capable of reproducing itself under similar circumstances *ad infinitum*.

Those who regarded gonorrhoea, warts, etc., as evolutions of a protean disease, which they called syphilis, and which they believed originated in the great common venereal virus, could not be expected, of course, to see in them anything so constant as to enable them rationally to include them in the limits of such a rigid formula as we have just enunciated.

But, rejecting all the simple results of local irritation from the category of specific affections, for reasons for which we think we have already shown sufficient cause in the former part of this article, we would now attempt to face the question, Are all the inoculable affections of the genital organs really syphilitic? In other words, and more plainly, Is every sore upon the genital organs, which furnishes an inoculable pus, a source of the syphilitic virus? For, observe, such was the doctrine of Ricord, as enunciated 30 years ago; such was the pathological truth which he thought he had led captive to the point of his lancet; such was what he believed he had proved, but of which Jourdan so indignantly repudiated the demonstration.

To arrive at any conclusion upon this subject, we must consider the data from which he made this large generalization; and, without entering minutely into the very experiments and observations upon which the conclusions were based, we will consider the subject in the following order:—1st. The Source of the Virus, and its Condition. 2d. The Part and Person into whom it is introduced. 3d. The Effects it produces in the part. 4th. The Effects which follow in the system. And, to avoid confusion, and preserve an historical sequence, we shall examine these particulars only by the light afforded by the clinical observations of Ricord up to the year 1834.

(1st.) *The Source of the Virus.*

We have already had occasion to see how the purulent matter derived from gonorrhoea cannot produce chancres when applied to

a solution of continuity of the surface; and, conversely, that whenever the matter from an unexplored mucous surface, such as the urethra or vagina, produces a chancre by inoculation, we may rest confident that a chancre exists somewhere upon that surface. While, then, a chancre is the only possible source of a purulent secretion capable of giving rise to a chancre upon inoculation, if we take inoculation as an absolute test of specificity, and find that the pus of a chancre will not under all circumstances produce positive results, it follows that there are circumstances which prevent a chancre which was inoculable one day from furnishing an inoculable secretion the next. What, then, are these circumstances? Can we, for example, from the appearance of the purulent secretion, decide as to what the result will be? In reply to this, some surgeons have attempted to indicate certain characters which they believe distinguish the specific pus. Such characters, however, belong to the pus, and not to that which constitutes the essential potency of the pus, and which apparently eludes our best efforts to characterize its presence. We know, however, that it is absent when putrefaction has commenced, or when cicatrization of the sore is in progress. But the chancre poison, when potent, can be preserved in an active condition for any length of time, just as we preserve vaccine lymph, and therefore needs no physiological act upon the part of the organism which furnishes the secretion to make it effectual. The constant source, then, of the chancrous poison is a chancre yielding pus—the sore not cicatrizing, the pus not putrescent.

(2d.) *The Part and Person into whom the Chancrous Poison is introduced.*—Have they any effect upon the action of the poison? Ricord, in reply, showed that, if the poison from a chancre fulfilled the indications we have already stated, its introduction into any part or any individual, provided only there be a slight solution of continuity of the shielding cuticle, specific effects will ensue.

(3d.) *These effects in the part are.*—1st, A pustule, which forms a sore; or, 2d, An open sore. In either case, the characteristic of the sore being, its tendency to extend its limits, or to be tardy in cicatrizing. But this sore, so produced, has it the characters of the parent sore? Now, in 1834, and even at a very much later period, the only reply which could be given to this was, that the sore might present various aspects. These differences, it was presumed, depended, not upon the poison, but upon the state of the constitution of the individual who had been inoculated with the chancrous matter; and it was further remarked, that these different appearances seemed to bear some unknown relation to certain after effects.

(4th.) *These effects which follow in the system* the experience of all ages has shown to be more various in appearance than even the sores themselves. In some cases, for instance, the sore is the whole affair; in others, a swelling in a neighbouring lymphatic gland makes its appearance, resists all treatment, and inevitably terminates in sup-

uration; in others, a glandular enlargement occurs in the neighbouring lymphatic chain, giving rise to no uneasy symptom, but remaining very persistently. In some cases no constitutional symptoms occur; in others, a mild series of cutaneous affections follow; while in others the constitutional symptoms are both severe, protracted, and intractable. Now, if all these affections are really one and the same, they certainly constitute a most incongruous medley—a confusion of results, as originating from a single cause, enough to confound any ordinary mind, and to bring order out of which were a task worthy of Hercules himself. Such was the unsatisfactory condition of the results of M. Ricord's observations at the time alluded to, when he first attempted to prove the existence of a syphilitic virus.

One seed (to employ his own simile)—the syphilitic virus; various plants—the different forms of sore; and still more various fruits—the uncertain consecutive results. Such was all he could adduce in proof of its existence. If this were consistent with his idea of a specific virus at that period, sure we are that it does not fulfil the requirements of the formulæ we commenced by enunciating; nor, indeed, would it tally with what would be demanded by Ricord himself at the present day. The doctrine of a single virus, which produced such various, nay, dissimilar results, quite inexplicable by any known pathological laws, was only calculated to engender a sense of uncertainty in prognosis, and a want of confidence in the employment of treatment. We need not wonder, then, that practitioners, who daily studied facts as well as doctrines, should come to the conclusion, as such a doctrine failed to explain a majority of the facts which came under their observation, that it was far better to reject it altogether, and fall back upon the glorious doctrine of uncertainties on which medicine has been built from the earliest times.

What, then, had Ricord really proved when he thought that he had demonstrated the existence of a real veritable virus? Simply that, apart from gonorrhœa and non-specific affections yielding a purulent secretion, there were sores, usually called *chancres*, which afford a secretion capable of reproducing similar sores upon inoculation; and that, while some of these are followed by constitutional symptoms indicating an empoisonment of the system, others—and these are the majority—are followed by no result whatever. It is true that by many this immunity from constitutional infection was attributed to the employment of timely treatment; while, again, by others the existence of all such symptoms was held to prove that a poisonous use of mercurials had been had recourse to, and to which, accordingly, the so-called constitutional manifestations of syphilis were referable. Ample experience, however, in the expectant plan of treatment, once in vogue both in Edinburgh and upon the Continent, has sufficed to prove to the satisfaction of the most sceptical that constitutional syphilis will and does occur in a certain

number of cases where no mercury or anything else has been given; while, again, the employment of the most active treatment, whether of the sore or directed to the condition of the constitution, has not been found to diminish the proportion of cases in which constitutional syphilis follows the occurrence of chancres. It became obvious, then, to all attentive observers, that though every chancre might reproduce a chancre, every chancre was not necessarily followed by constitutional syphilis. It was clear that, while some chancres existed only as such, and produced no more than local effects, and while some irradiated their influences no further than the first lymphatic gland in the neighbouring chain, there were others which were followed, after the lapse of some weeks or months, by a series of constitutional symptoms, which invaded in turn the different systems of the body, commencing with the skin and mucous membranes, and terminating with the cellular tissue, bones, and viscera.

It was clear, then, if all chancres were to be held as alike capable of infecting the system, and if treatment could neither be accused of inducing nor depended upon for preventing the constitutional affection, that these dissimilar results, to be rationally explained, could alone be attributed to some difference in the constitution, temperament, sex, or idiosyncrasy of the individual in whom they occurred. And the lymphatic temperament, the scrofulous diathesis, and irregular habits were presumed by some to explain the constitutional evolution of the disease, much in the same way that a debilitated state of the constitution obviously favoured the occurrence of phagedenic ulceration in the chancres themselves. According to this view, the chancre poison resembled a seed which produced different plants and various fruits, according to the soil in which it was planted. In practice, such a generalization was not found to add much to the certainty of our prognosis, for while it implied that every chancre might induce syphilis, the manner how, the time when, and the reason why, such an infection should occur in one case as compared with another, was left absolutely indefinite. One thing, however, remained certain, that in the great majority of cases no constitutional symptoms were to be apprehended. We believe, then, that while M. Ricord, with any or all of these ingenious speculations, failed in his proof of the existence of a *syphilitic virus*—possessed of a specific commencement, a specific transmission, and a specific evolution in the form of an inevitable diathesis—he had proved most completely a minor proposition, viz., that in the chancre there was a specific virus capable of reproducing itself; that in the chancre, and its transmission from individual to individual, there was a distinct revolution of cause and effect alternately; while he indicated the existence of another circle beyond this, consisting of certain consecutive or constitutional effects, which, although obviously revolving around the same centre, he failed definitely to

connect with those revolving within. He certainly seemed to show that there was no syphilitic infection of the system without the pre-existence of a chancre; but at the period of which we speak he certainly had failed to discover how or why some chancres were followed by syphilis while others were not.

In our own days there has, we think, been no greater advance in pathology than that which has enabled us to explain definitely this apparently insuperable anomaly; for, by means of it treatment has become more certain and less empirical, and prognosis has been rendered something approaching to absolute. With special reference to this very important subject of prognosis, we would now pass on to consider whether we possess any definite symptom or symptoms in connection with the chancre, by means of which we can say in what cases the affection will remain a mere local one, and in what cases the constitution will become involved.

In the work of Jean de Vigo we find him directing particular attention to the induration of the chancre; and Marcellus Cumanus actually compares the induration of a chancre to a wart, and speaks of the sore itself as livid in tint and implanted on a hard base. Ambrose Paré obviously attached great importance to this same symptom of induration when he says, "In an ulcer of the penis, should the part be indurated, it will be an infallible sign that the patient is affected with syphilis." Petit has remarked, that those chancres which became indurated were the most constant cause of syphilis; and, in our own country, Benjamin Bell, John Hunter, and Mr Pearson have almost made the induration of a chancre an essential character by which the chancre may be distinguished from those other ulcerative affections of the genitals which had been recognised apparently in all ages, and to which they gave the name of diseases resembling syphilis and pseudo-syphilis. We say almost; for it is obvious, from even a very superficial glance at their writings, that they did admit within the category of true chancres, other sores than those which are followed by constitutional syphilis. It is certain, however, that they had formed no distinct idea of the doctrine of a plurality of specific causes. With them all chancres were liable to be followed by syphilis, or lues venerea, as they called the constitutional affection; and it was to the preventive powers of mercury that any immunity from its dread invasion was to be attributed.

Mr Carmichael, of Dublin, in 1815, first directed attention to certain different appearances in those chancres, and to certain forms of constitutional symptoms, between which he believed there was an intimate connection; so intimate, indeed, that he considered them to be related to each other as cause and effect. He proposed, in fact, to admit of a plurality of poisons, specifying no less than four distinct and different forms of sore resulting from their action upon the tissues of the body, and each accompanied by a corresponding type of constitutional affection.

The following was his classification in accordance with this view of the subject:—

Form of Sore.	Eruption on Skin.	Affection of Throat.	Other Affections.
1. Simple Ulcer.	Papular.	Increased Vascularity.	Rheumatic Pains. Iritis.
2. Ulcus Elevatum.	Pustular.	Dry and granular.	Distension of Joints. Nodes.
3. Phagogenic Ulcer.	Rupia.	Slothing Ulcer.	Severe Pain in Joints. Nodes.
4. Indurated Chancre.	Scaly.	Excavated Ulcer.	Cephalic pains, glandular enlargements. Nodes.

But this somewhat clumsy classification and fanciful arrangement of symptoms, although it is even still adhered to in a more or less modified form by some surgeons of the Irish school, was admitted by practitioners generally not to be capable of anything like a rigid application, and was, accordingly, soon abandoned. In fact, this hypothetical multiplication of the chancre poison had been pretty well forgotten, when Ricord, in 1835, wrote as follows: "We most frequently meet with induration of the base of the chancre in those cases where secondary symptoms afterwards occur." Again, with greater precision, in 1858, we find him saying: "Indurated chancres are usually followed by secondary symptoms; and the fact that this induration has occurred seems to indicate that the infecting principle has already affected the economy,"—a statement which, in 1840, he completes by asserting, as the result of his experience, that "when a chancre becomes indurated, it is infallibly accompanied by an indurated and non-suppurating engorgement of the neighbouring lymphatics." In 1850-51 these views had received such constant confirmation in practice, that he does not hesitate, in his Letters upon Syphilis, communicated to the *Union Medicale*, to affirm that "when a chancre becomes indurated, there is of necessity constitutional empoisonment; this specific induration is a certain and absolute proof that the constitutional infection has already occurred." And, in another part of the same correspondence, we find him saying that "the variety of the diseased conditions following chancres depends not only upon the condition of the individual, but upon a certain variety in the cause, and therefore in the virus."

What, then, is the nature of the difference between the virus of the indurated chancre which is the source of syphilitic infection, and the chancre which is unattended by syphilis?

Some, among whom we presume those who deal in "Syphilization" may be supposed to range themselves, have ingeniously attempted to prop up their practice by hazarding a theory, viz., that the non-indurated or simple non-infecting chancre is to the indurated infecting chancre what cow-pox is to small-pox. But

this charming analogy should, if true, imply that inoculation with the virus of the non-indurated chancre should protect the system against the indurated chancre and its constitutional sequelae. Unfortunately, however, we do not find it so. The non-indurated chancre may apparently be reinoculated *ad infinitum*, but it proves no protection to the inoculation with the virus of the indurated chancre and its disastrous consequences.

Another view of the relation which these two forms of chancre bear to each other has been advanced by Dr Clerc. The simple non-infecting chancre, according to this gentleman, is merely a modification of the indurated or infecting chancre, resulting from the inoculation of the virus of the indurated chancre in an individual who has already suffered from an indurated chancre and constitutional syphilis. The more recent investigations of Ricord tend to overthrow this theory, and apparently indicate rather that the results of the inoculation in a virgin subject¹ of virus obtained from a chancre existing in a patient who has already suffered from syphilis, will depend entirely upon the nature of the chancre from which he derived his infection. From such, and various other analogous facts, Dr Bassereau, a pupil of Ricord's, has advanced a step further. He regards the virus of these two forms of chancre as perfectly distinct the one from the other, and each capable of transmission after its own kind. According to this view, there is no longer one chancre poison, with various inexplicable results, but a duality of virus and a duality of effect.

There is, I., The Simple, Soft, Non-infecting Chancre—The *Chaneroid*, as Dr Clerc calls it—the chancre without syphilis, as it really is; and there is, II., The Indurated, The Infecting, The Hunterian Chancre, The *Chancre* proper, with its inevitable syphilitic infection, in which we recognise what at the commencement of this review we set out in search of—the alone source of the syphilitic virus, because always constant, and tallying in every item with our formulæ of a true virus.

To the description and diagnostic recognition of these two forms of virus—the syphilitic and the chaneroid—we now turn; for upon a right comprehension of their distinctive manifestations must depend our prognosis, and the treatment to be adopted in the early stage of these similar but essentially distinct diseases.

I. THE SOFT OR SIMPLE CHANCRE.—Its essential characters may be summed up in a few words.

The margins of the sore have a sharp, definite outline, giving it the aspect of having been cut out of the tissues with a punch. The surface is irregular, as if worm-eaten, and is of an ashy hue. The base is free from any specific induration, or, at most, it is accompanied by simple inflammatory thickening. The discharge is usu-

¹ By *virgin*, in such a collocation, the Continental syphilographers intend to designate those who have never been affected with syphilis.

ally copious, thin, and sanious, very irritating, containing the specific virus, and long maintaining its specific qualities. Therefore the soft chancre is rarely single, generally multiple, or, at least, rapidly multiplying itself by a series of spontaneous inoculations of contiguous parts; and, besides tending to extend its limits by the superficial invasion and destruction of surrounding parts, it is particularly liable to become affected with phagedena; and, under all circumstances, it is an excessively sensitive and painful sore.

The soft chancre produces either no effect upon the lymphatics, or, when it does affect them, the bubo may be, 1st, a simple sympathetic inflammatory engorgement, such as may result in the course of any inflamed wound or sore; or, 2d, it may be an acute monoglandular virulent affection, the result of specific absorption, which infallibly suppurates and furnishes an inoculable pus. Chancres with such characters are purely local affections; they are never followed by any constitutional infection; they irradiate their influence no further than the first gland in the neighbouring lymphatic chain.

Such being the case, we have practically, in the soft chancre, only to deal with a nasty, painful form of ulceration, which tends to extend its limits, 1st, by invading surrounding parts; 2d, by multiplying itself; 3d, by producing buboes; 4th, by becoming phagedenic; and the cause of all this local mischief is contained in the specific virus which reproduces itself in the discharge from the ulcerating surface. The whole secret, therefore, of the successful treatment of the soft chancre lies in the complete destruction of the specific ulcer, and its conversion into a common granulating sore. This we can effect most certainly and speedily by means of such cauterization as shall destroy not only the whole surface and margins of the sore, but the tissues around and underneath to a slight extent. For this purpose, the actual cautery, caustic potash, or soda, Vienna paste, chloride of zinc, nitric acid, the fluid pernitrate of mercury, the saffro-sulphuric caustic of M. Velpeau, or the carbosulphuric caustic of M. Ricord, will succeed equally well, if only they are thoroughly applied; while nitrate of silver, sulphate of copper, sulphate of zinc, and other favourite applications, can only act in a very modified degree as caustics, and are therefore not to be depended upon as means for summarily destroying the virulence of the sore. Where, however, the patient objects to the employment of powerful caustics, then solutions of these salts, suited in strength to the irritability of the part and person in which they are to be employed, will be found well adapted to act as alteratives in checking the copious irritating secretion from the sores, in limiting their extension, and in hastening cicatrization when it once commences. In acceding, however, to a patient's wishes in employing these modified measures, it must never be forgotten that, so long as the specific character of the sore remains, the virulent bubo may occur; and hence the propriety of early and complete destruction of its specificity before any virulent absorption has taken place. When,

however, a virulent bubo has commenced, no measures, whether derivative, soothing, stimulating, or revellent, can check its certain termination in suppuration; but in sluggish cases, where we may remain in doubt for some time as to its true character, such treatment may often be advisable. Even after suppuration has taken place, incision should be delayed until the purulent collection has made its way through the capsule of the gland, by which time the fluctuation will be distinct and the skin discoloured; then a free cracial incision should be made, so as to avoid the after-formation of sinuous tracks beneath the undermined skin; and at the end of a day or two, should the characters of the chancre appear in the incision which has been made, either caustic should be applied, so as to transform the specific ulcer into a simple sore, or nitrate of silver may be occasionally applied, and the whole surface of the ulcer should, from day to day, be carefully dressed with lint soaked in some astringent lotion, while pressure, by means of a pad and bandage, should be applied if there is any tendency to the continuance of chronic inflammatory swelling.

When phagedena attacks these sores, if they are limited in extent, cauterization, efficiently employed, will generally arrest its further progress, especially if ferruginous tonics are administered internally at the same time. Where, again, the ulcerating surfaces are very extensive, then certainly nothing acts so much like a charm in checking ulceration and promoting the progress of cicatrization as the oft-renewed application to the surface of a strong solution of tartarized iron, and the concomitant employment of large doses of the same salt internally, with the administration of stimulants and nutritious articles of food, of such kind and in such quantities as the patient can take most readily, and as the state of his pulse and system generally appears to indicate that he requires. Constitutional remedies to purify the blood, or to prevent the occurrence of constitutional infection, are quite uncalled for; mercurials can do no good, and, as experience shows, when carelessly administered they are a very common cause of the invasion of phagedena.

II. THE INDURATED INFECTING CHANCRE—The Hunterian Chancre—Primary Syphilis.

When a well-marked example of the indurated chancre has been once seen, and its characters recognised, there is no difficulty in knowing it at once when it again presents itself. These characters, however, present different degrees of intensity, and may be obscured by various local and constitutional conditions to such an extent as sometimes to prevent, or at all events to delay, our arriving at an absolute diagnosis. To avoid such confusion in description, we will first describe the characters of a pattern or standard example of an indurated chancre, and then point out what are the modifying influences which come into operation, and what effects they produce upon the characters of the chancre.

The surface of the sore is smoother, of a less worm-eaten and

irregular appearance, than the soft chancre; it has a glossy appearance, as if it had been varnished; its colour is usually of a dark grey, varied with a russet or purplish tint.

The margins, of a uniformly rounded or oval form, are elevated above the centre of the sore; and their whitish hue, as contrasted with the comparatively dark colour of the surface, makes them appear to stand out in bold relief. There is no edge proper to the margins, for they descend with a gentle slope towards the surface of the ulcer, giving to it generally the aspect of having been gouged out of the tissues of the part.

The discharge is usually small in quantity, of a thick and gummy consistence, of a sero-sanguinolent character, but possessing no naked eye or microscopic specialism by means of which it could without fail be recognised. It speedily loses all specificity so far as inoculation in the individual who suffers from it is concerned, and hence indurated chancres are usually *solitary*; but, so long as the sore exists, the discharge rendered from it is apparently capable of inoculation, with specific effects, in virgin subjects.

Pain is by no means a characteristic of the indurated chancre; in fact, in many cases so little pain is experienced in any period of the existence of the sore, that its very existence is constantly overlooked by patients.

While the indurated condition of the subjacent and surrounding parts constitutes the specific characteristic of the infecting chancre, this is not usually or necessarily accompanied by any inflammatory blush such as would direct attention to its existence. Still, it is something quite *sui generis*, and more nearly resembles a thin and elastic bit of cartilage enclosed within the tissues of the part in which the sore is situated than any other normal tissue with which we are acquainted. This induration is confined to the immediate surface and margins of the sore, being, as John Hunter said, "circumscribed, not diffusing itself gradually and imperceptibly into surrounding parts, but terminating rather abruptly." Its size and extent, therefore, varies with the size of the sore; sometimes no larger than a barley pickle, it is at other times as large as a garden bean, but always distinct from the parts in which it is, as it were, implanted.

The infecting chancre usually becomes very speedily arrested in its extension. Where it is small in size, cicatrization rapidly ensues; where of large extent, cicatrization may sometimes be long delayed. The cicatrix which forms usually retains the pathognomonic induration of the sore, and is frequently characterized by a macular discoloration.

In the earlier stages of an indurated chancre, although the constitution may apparently be unaffected, before six months have elapsed some remote manifestation of the evolution of the syphilitic diathesis will infallibly point to the infection of the system.

Such are the characteristics of a model indurated infecting chancre—a Hunterian chancre, as in this country it is usually

called; but every infecting chancre has not these characters so well marked, and to the varieties which occur we would now wish to direct attention.

1st. *Varieties with reference to the Characters of the Sore.*—The indurated chancre is usually speedily limited; but at times, like the soft chancre, it may be attacked by phagedena. This is, however, a rare occurrence; but its occasional appearance, as a complication of the indurated chancre, serves to explain the importance which Mr Carmichael attached to the phagedenic chancre as prognostic of the very worst form of tertiary syphilis, but which must, of course, remain quite inexplicable to those who consider phagedena as the prerogative of the soft chancre, or, in their language of experience, regard the occurrence of phagedena as affording a certain immunity against any constitutional infection.

This fact of the occurrence of phagedena as a complication of the indurated chancre has a further important practical bearing. The older surgeons remarked, that, while the administration of mercurials in most cases of phagedenic chancre was productive of the most disastrous results, there were cases, on the other hand, in which the careful employment of mercury tended to arrest the unhealthy action and improve the characters of the sore. These exceptional, and to them inexplicable cases, we now recognise as examples of the phagedenic indurated chancre, and believe that the remedial agency was due to the effect produced upon the induration, not the phagedenism, of the sore.

2d. *Varieties with reference to the Induration of the Sore.*—Well-marked examples of the indurated chancre are very rare; so much so, that we have known a surgeon of very extensive hospital practice speak of having seen, in the course of his experience, only two or three real Hunterian chancres. Now, if this is the case, and if constitutional syphilis is very common, and if the indurated chancre is the inevitable preliminary of syphilis, it is perfectly obvious that there must be some variety in this symptom of induration which renders its recognition less simple than appeared at first sight. We find, accordingly, that it varies with the tissues in which the sore is implanted; and so very marked is this, in some instances, that some surgeons (such as Mr Holmes Coote) have attributed the induration of the chancre, not to its specific character, but simply to the laxness of the tissue in which it is situated. While, however, experience cannot support such a doctrine, there can be no doubt that wherever the tissues are loose, and possess a large number of lymphatic vessels, then the induration of a chancre is always most developed. This is well seen in chancres situated in the sulcus, behind the glans penis, on the prepuce, on the lips, etc., where the ulcer may be sometimes seen so raised upon its indurated base as to constitute a positive *ulcus elevatum*. Again, in some other situations, such as the *caruncula myrtiformis* on the mucous membrane of the vagina, and within the anus, the induration is so slight, that

except to the *tactus eruditus* of an experienced practitioner, if this character is alone referred to, the essential nature of the sore may easily enough be overlooked.

But the induration also varies with the period at which we examine the sore to test its presence. Induration is always an early symptom of an infecting chancre; if a chancre is to be a source of infection, the induration will appear about the third, and rarely later than the seventh day after the commencement of the sore; but having once appeared, unless developed in a very characteristic degree, it may be evanescent, often, as Ricord says, "disappearing before the work of reparation is finished, and before cicatrization is complete."

When the induration of an infecting chancre is but slightly developed, it has received from Ricord the title of "*Induration en surface*," or "*parchiminde*." Here we have no longer the characteristic cup-like mass of induration; but the sensation, when the base of the sore is gently manipulated by skilful and experienced fingers, is that of a bit of parchment implanted beneath the sore.

The diagnosis of the specific induration of the infecting chancre, therefore, is beset with difficulties; and as further difficulties may arise from the simulation of the indurated chancre by the artificial "*hardening*" of the textures around a soft chancre, it is incumbent on us to look for some other symptom which may assist us in arriving at something like precision in our diagnosis and prognosis.

We have seen how the simple gonorrhœa frequently was accompanied by the sympathetic inflammatory bubo, which rarely suppurates; how the soft chancre had its virulent bubo, which always suppurates; and we have now to study the bubo symptomatic of the indurated chancre. "*Nihil in inguine quod non prius fuit in pene!*" says M. Diday, and certainly here we find in the bubo of the indurated chancre a counterpart of the induration of the sore itself.

This bubo symptomatic of the indurated chancre is a multiple indurated adenopathy of the neighbouring chain of lymphatics interposed between the part affected and the general lymphatic system. Between the enlarged glands and the sore, we can usually trace the lymphatic vessels enlarged, knotted, but painless. The gland, into which these vessels open, is usually the most enlarged; the others vary in size in different cases, but their special characteristic is their induration. This induration, which communicates to the fingers the same sensation of cartilaginous hardness which we saw existed in the base of the chancre, is unaccompanied by any inflammatory tension, fusion of surrounding parts, or pain; and although the indurated enlargement may continue for an indefinitely long period, it has no tendency *as such* to undergo suppuration. No doubt suppuration may occur in these specifically enlarged glands, as in any other lymphatic chain, from the existence of any common cause of simple irritation, or from a soft chancre occurring as a complication, a virulent bubo may be produced; but this con-

stitutes no true exception to the constant indolent character of the bubo appertaining to the indurated chancre; for where suppuration does occur, it is not the result of the specific character of the sore, but produced by either a simple inflammatory or a virulent complication. A further peculiar feature of the indurated bubo is, that it is bi-lateral—that is to say, when the indurated sore exists in a central situation, such as the penis, the (inguinal) glands on both sides are characteristically enlarged.

The indurated bubo, furthermore, is very persistent; dating its commencement from the period at which the induration of the sore is first observed, it remains well defined for months, nay, frequently for years after the sore has healed. Such a constant, well-marked, persistent accompaniment of the indurated chancre is of the very greatest importance in the diagnosis of venereal diseases. It serves infallibly to indicate the true character of a sore; it serves with unfailing certainty to indicate the source of a syphilitic eruption when all trace of the sore has disappeared; and by means of it you may detect the existence of a chancre occupying an unusual locality; in fact, the "indurated multiple glandular pleiad," with its "*index*" gland, may be invoked as a witness with the greatest certainty, and depended on far more implicitly than any statements made by a patient; and although the exact site of the chancre which produced it may remain a mystery, which you either do not choose or fail in the circumstances to explicate, you may safely act upon the indication which its existence affords in forming a prognosis of the likely progress of the case, and employ a course of treatment appropriate to the indurated chancre and its consequences.

To the prognosis and treatment of the indurated chancre we would now direct the reader's attention. The soft chancre, we saw, was a local affection, bounded in its influence by the first lymphatic gland in the neighbouring chain. In the indurated chancre the ulcer is comparatively a trifle; the real disease is the infection of the constitution, the syphilitic diathesis, which it has served to introduce. We saw that Ambrose Paré regarded the induration of the chancre as an indication of the inevitable syphilitic infection; but modern investigation tends to prove that the induration of the sore, as well as the induration of the bubo, is not merely the first step towards the infection of the system, but is in reality the reaction upon the part of the effect which has already been produced in the system. The indurated chancre is, therefore, rightly enough called primary syphilis, for it is the first outward manifestation of that constitutional infection which is fully developed in the induration, but when manifested in cutaneous eruptions constitutes the confirmed pox, as our forefathers would have called it—the constitutional syphilis of our own days.

This constitutional disease, so commencing, is most regular in its further development. At its outset, a very obvious condition of

chloro-anaemia manifests itself, accompanied by a sense of lassitude, with neuralgic or rheumatic pains, cervical glandular enlargement, falling out of the hair, and certain eruptive manifestations, observable both upon the cutaneous and upon accessible mucous surface, and in the involvement of certain fibrous tissues.

These are the symptoms popularly called *secondaries*; and although only affecting the surface of the body, manifestly indicate the empoisonment of the whole system. Such symptoms are *certain* to make their appearance within the first six months after the occurrence of an infecting chancre; and no treatment can prevent this evolution, though it may delay or confuse their regularity, and modify their severity. At a somewhat later period, symptoms commonly called *tertiary* make their appearance. They occur in the deeper seated tissues of the body, such as the cellular tissue, the bones, joints, and in the textures of organs. These symptoms rarely occur within the first six months; but, on the other hand, they continue to evolve and repeat themselves for an almost unlimited period. They are of a very much more serious nature, both as regards the part and system at large, than those we have just specified as secondary, and are so completely distinct as almost to constitute, as Hunter says, a different disease.

The primary disease, the indurated chancre, is the only stage of syphilis which has been proved to be certainly contagious. Some have asseverated and adduced reputed facts in proof of the communicability of some of the forms of secondary eruption; and some have even gone so far as to assert that the blood of syphilitic patients, when brought into intimate contact with the textures of the body, through the medium of a wound, abrasion, or ulcerated surface, is capable of inducing secondary constitutional affections. To avoid the risk of fallacy in investigations connected with this subject is almost impossible; for as syphilitic inoculations are devoid of results in persons already suffering from syphilis, the majority of facts which have been collected are derived from so-called physiological inoculations with the secretions or blood of individuals supposed to be suffering from secondary symptoms alone. Results, however, deduced from such facts cannot be regarded as unexceptionable; for, very possibly, the existence of an indurated sore, or some source of contamination other than the presumed one, but which has been overlooked, may have interfered to vitiate their certainty. It may be observed in those cases, again, where absolutely positive results have been believed to be attained after certain very *quis quis* attempts to induce inoculation with the secretions of supposed secondary affections introduced into the tissues of "virgin subjects," that there is a very great vagueness in the descriptions given of the different stages of the process by which the material for inoculation had been obtained, of the mode in which it had been employed, and of its immediate effects produced upon the part where it had been introduced; and as we find, besides, that these

asserted facts are flatly contradicted by other similar experimental researches made upon their own persons by medical men of known integrity.¹ We are compelled, at the present stage of the question, to recur to the doctrine of Ricord, that we have as yet no evidence that secondary or tertiary syphilis has ever proved inoculable, or given rise to the development of secondary or tertiary symptoms.

The secondary form of the disease is, however, communicable from parent to child, and from the male parent to the female, through the medium of the fetus. Such hereditary transmission is by no means, however, constant or inevitable, and becomes less and less likely as the diathesis becomes older. The tertiary symptoms, again, are not apparently communicable as such, even by hereditary transmission. It seems, however, very probable that, in some cases, children of a very scrofulous habit of body, owe this in no small degree to the fact, that one or other parent, or both, have been subjects of the syphilitic diathesis.

While the diathesis becomes, as it were, exhausted in its external manifestations, there is no well-authenticated example of its complete extinction. This permanence of the diathesis is evinced by the non-inoculability of the indurated chancre in persons who have once suffered from syphilis. In them the virus usually produces no effect whatever, or, at most, produces a chancre in which the characteristic induration is wholly wanting.

From the occasional production of sores, with all the characters of apparently simple soft chancres, by the fresh inoculation in a syphilitic patient of the virus of the indurated chancre, some have supposed that the syphilitic virus, by this mode of transmission, gradually loses its specific qualities, becoming exhausted as it were, and thus, after repeated transmission, no longer capable of infecting the economy, but producing merely a local disease. Some have accordingly attributed the soft chancre to this source, considering it as a mere variety of the infecting chancre; and, from analogy, attempted to explain the very modified symptoms of the syphilis of the present day, as compared with the disease as described by authors of the fifteenth century. Indeed, this supposed exhaustion of the potency of the syphilitic virus has been employed as an argument in support of the practice of artificial syphilitic inoculation, as a means of exterminating the syphilitic virus generally; and it has actually been proposed that, as we vaccinate children to save them from variola, we should also *syphilize* every infant that comes into the world, in order to modify the type of syphilis—in other words, that the whole world should be poked, that the pox may be arrested. Even admitting, for the sake of argument, that the practical development of this proposal could afford any advantage (to the immediately succeeding generation, it most certainly could only do an incalculable amount of mischief), the whole theo-

¹ e.g., Cullerier, Fournier, Sarribos, Rattier, and Lindmann.

retical superstructure is founded upon two false assumptions:—1st, that the soft chancre is essentially the same with the indurated, being merely a modification of it; and, 2d, that the indurated chancre is absolutely incapable of effecting an inoculation in (a) a patient who has already been "saturated" with the virus of the soft chancre, or, according to others, (b) who has already been the subject of a true syphilitic infection.

The first statement, and the first part of the second, our readers must already recognise as untenable; and as to the second part of the second statement, although so far true, it is not definitively so. For while it is indubitable that the indurated chancre cannot appear as such in an individual who has once suffered from syphilis, and that if any result whatever is obtained, in him it is only a chancre with a soft base, it is equally certain, that the pus from such a chancre inoculated in an individual who has never previously suffered from syphilis, again reproduces the chancre with the indurated base, with its characteristic bubo, and with its constitutional symptoms. The chancre, then, with a soft base, which occurs in a syphilitic patient, may be either essentially a soft non-infecting chancre, derived from a similar source, and transmissible as such, or it may be the temporary nidus of the virus of the infecting chancre, derived from such, and transmitted as such,—only remarkable in this, that it wants its specific characteristics; and these characteristics, viz., induration of the base, and the indurated multiple bubo, are only absent, because, as we have seen, they constitute a part of the syphilitic diathesis, and, unless a diathesis becomes extinguished, its symptoms cannot be reproduced in the same individual.

In treating the indurated chancre, then, it is a diathesis, not a mere local disease, with which we have to deal. The local disease is comparatively a trivial, painless, limited affair, and will get well almost of its own accord, if only we attend to the infected state of the constitution. In the soft chancre, we said that the whole disease might be destroyed by the efficient cauterization of the sore, and some have supposed that by a sufficiently early destruction of an indurated chancre, the irradiation of the poison throughout the economy and the establishment of the diathesis may be prevented. When the specific induration and the pathognomonic bubo have appeared, as they are symptomatic of the constitutional intoxication, it is, of course, too late to employ ectrotic measures—the period is past when we can "punch out the primary," when we can "nip the syphilis in the bud," as Ricord has expressed it. But before this infection has occurred, in that uncertain period which intervenes between the appearance of the sore and the first evidence of its having produced constitutional effects, it may reasonably be asked, Is there no period in which the employment of cauterization will destroy the focus from which it is about to irradiate its baneful influence? Ricord has replied in the affirmative; and, from his extended experience, has taught for many years, that infection has

never been known to follow upon chancres which have been effectually cauterized within the first four days from their appearance. Professor Sigmund of Vienna, although he similarly limits the period of certainty in the destruction of the chancre, and with it all further effects, to the fourth day, believes that the fifth day is not too late to prevent absorption, and even practises ectrosis much later. It must of course be remarked, that during this period, as every pathognomonic symptom is absent, the sore, to all appearance, is a mere soft chancre; and this fact merely renders the general rule, already laid down, of efficiently destroying every soft chancre, only more obligatory than it seemed before. At the same time, more recent experience tends to throw doubt upon the absolute certainty of the results obtained from protective cauterization, even when practised at the earliest possible period. Dr A. Dron,¹—pointing to the analogies of the virus of vaccinia of glanders and farcy, and comparing them with the experiences of M. Diday and M. Langlebert in the ineffective destruction of infecting chancres, before either induration of the sore or specific adenopathy had appeared, although practised within hours, instead of days, from the appearance of the sores,—has concluded, that as soon as the chancre has made its appearance, abortive measures are too late; and that the constitutional infection will inevitably occur. Still, for other reasons, he thinks the rule imperative, and recommends the use of caustic at this stage:—1st. Because we are as yet uncertain whether the chancre will prove indurated (i.e., infecting), or soft and non-infecting; and, therefore, lest it should prove to be the latter, cauterization is to be employed. 2d. Although it cannot prevent the patient from suffering from syphilis, by its employment we can prevent the transmission of the disease to another individual.

Should the patient, however, object to the use of caustics (as he very naturally may, when we can promise him by their use no certain immunity from the constitutional disease which he dreads above everything), then any simple dressing of a slightly astringent and stimulating kind will suffice in most cases to provide for the speedy cicatrization of the sore. Should it again prove tedious from the amount of induration deposit, either blistering or the occasional application of the nitrate of silver will usually effect its healing. At times, however, such sores, when of large size, resist all local treatment; but as soon as the system is brought under the influence of constitutional remedies, the tawny varnished surface becomes covered with healthy granulations, the thick white ring of induration smooths down to the same level with the surface of the sore, and contraction of the cicatricial pellicle rapidly ensues.

But our attention must not be limited to the sore alone. We have a diathesis to treat. Its evolution is impending. Our object

¹ In his paper upon the "Destruction of Chancres," in the *Annuaire de la Syphilis*, etc.

should be to ward it off—to mitigate, if we cannot altogether prevent, its development. Are there any means, then, at our disposal by which we can fulfil such indications? The older writers upon venereal diseases had no difficulty in replying at once affirmatively to this all-important question. They believed in a universal venereal virus, and mercury was its constant antidote. Had a patient a sore? Mercury was the agent by which it could be healed! Were constitutional symptoms apprehended? Mercury was a sure preventive! Did they, nevertheless, appear? Mercury sufficient had not been given! more mercury still must be administered! Had a patient the venereal? Well, run him up with mercury from morning to night, till his face blanched, and his tongue was swollen, and his teeth were loose, and the saliva ran in pints from his slavering lips. Such was the reign of mercury! Mercury triumphant! Mercury and the mercurialists run mad! Those were the days when there were lodging-houses kept for the use of young gentlemen who required to go through a course of mercury, as it was called; for it was seldom that a young man could remain with his friends, and undergo the severe discipline to which the surgeons of those days thought it necessary to subject him. But while mercury was deemed essential in all cases of so-called syphilis in this and other countries in Europe, sudorific decoctions and diet drinks were found in warmer and more genial climates to obtain quite as great a success as the mercurial treatment in the supposed prevention and cure of the constitutional symptoms. Such success very naturally led to the adoption of a similar plan of treatment by professional men in Europe; and, so far as the supposed prevention of the constitutional symptoms was concerned, it was found that pretty nearly the same results attended the use of "the decoction of the woods" as was obtained by the employment of mercury; while, under the non-mercurial treatment, phagedenic ulceration, caries, and necrosis were very much less common accompaniments of the advanced stages of the disease. Since that period, however, various waves of fashion in the treatment of venereal diseases have passed over the face of the world; and while one remedy and then another has gained a great reputation, it is a remarkable fact that there are few men of practical experience, whatever their theoretical leanings, who will not admit that there are many cases of syphilis which resist all non-mercurial treatment.

In considering the advantages of a mercurial or non-mercurial treatment, one great source of fallacy will be removed, if the doctrines of the essentially local character of some sores, and the inevitable constitutional irradiation of the poison producing others, is admitted. It will then be obvious that all comparative estimates of the number of cases of chancres in which constitutional symptoms made their appearance, with and without the employment of mercury, are simply coincidences, and must have been due, not to the treatment, but to the original essential characters of the sores. The

dogmatic statement of the non-mercurialists, that "all kinds of sores, or primary symptoms of syphilis, may be cured without mercury," although readily assented to, so far as the sore itself is concerned, in the case of most indurated chancres, and admitted as perfectly correct in those sores which are soft chancres, must be carefully understood to have no reference to the constitutional disease, which is the inevitable accompaniment of the indurated form of sore. But when they advance a step further, and tell us, "there are good grounds for believing that, in the majority of cases, where secondary symptoms have occurred, when the primary symptoms have been treated with mercury, that the secondary symptoms have been more severe and more intractable than where mercury had not been used for the primary sore," we demur to the accuracy of this deduction, and, admitting their facts to be correct, attribute these results to one of two things: 1st, the poisonous extent to which the remedy must have been given; and 2d, to their having, in their own practice, restricted the employment of mercurials to the very worst cases of indurated sore, which, as they were obstinate in their commencement, might be expected to prove equally serious in their further manifestation.

While, then, we readily admit that the indiscriminate administration of mercury in every case of chancre which comes under our notice, and more especially if carried to the well-nigh poisonous extent of profuse and continued salivation, can only be injurious, and give to any comparative estimate a great preponderance in favour of the non-mercurial treatment, we do claim for the judicious and careful administration of mercurials in the treatment of the syphilitic diathesis results which, in cold climates at all events, cannot be attained by any other mode of treatment. We do not claim for mercury any specific influence by means of which it follows out the syphilitic virus, and neutralizes it; nor do we maintain that, in order completely to extinguish the diathesis, it only requires that a certain indefinite quantity of mercury must be given. We merely claim for mercury an eliminative power, by means of which a rapid metamorphosis of tissue is effected, and the symptoms of syphilis are hurried through their regular evolution by the elimination of those modifications of tissue which the introduction of the syphilitic virus has produced. So long, then, as any modified tissue, constituting a nucleus or centre of infection, exists unmodified or uneliminated by the restoration of the tissue to its original typical condition, a fresh outbreak of the constitutional manifestation may occur. So long, therefore, as we are unable to judge of the extent or degree of modification of tissue produced by the syphilitic virus, it must of course remain problematical how much of the eliminating material should be administered. In estimating practically the period during which mercury should be given, Ricord recommends that mercurials in daily doses should be taken for six months. Dupuytren, again, gave mercury so long as any secondary constitutional symptoms appeared,

and then continued its use for as long a period thereafter. Some practitioners recommend its continuance for a few weeks, some for a few days only, after every symptom of the disease has disappeared. This, however, is a very doubtful period; for it depends entirely upon what is meant by every symptom:—some intending by that term merely to indicate the cutaneous manifestations and the induration of the cicatrix of the original sore; others, again, more reasonably including the indurated adenopathy as constituting a part of the disease.

However much doubt may exist as to the length of time mercurials should be given, there is at the present day but one opinion as to the effect which the drug should be permitted to produce when given. Whenever the gentlest possible physiological effect of the mercurial has occurred, then the full therapeutic effect has been attained, and anything further must prove injurious. Whenever the gums become tender, our eliminative ultimatum has been reached; and all we can hope to attain by the employment of the remedy will be gained by keeping up this condition for such a period of time as it seems to act, by improving the general health of the patient. Should the mercurial treatment tend to affect the mouth too readily, or actually to induce salivation before we can check its administration, the chlorate of potash, given internally, will be found admirably suited to check its poisonous and irritative effects. And this fact is now so generally admitted, that, by many surgeons, mercurials are never administered with the view of affecting the system at large, without at the same time giving the chlorate of potash to act as a corrigent, and so to prevent salivation, which it is generally recognised as well suited to cure.

It is with some persons a disputed point, at what period in the progress of the syphilitic infection the use of mercury should be commenced. Some, such as Ricord and most English practitioners, give it at the very outset,—so soon, in fact, as the characters of the indurated infecting chancre have appeared; while others reserve its employment against the first manifestation of a cutaneous eruption, or even restrict its use to the period of the squamous efflorescence of lepra and psoriasis. If any doubt exists in the diagnosis of the true character of the sore, by all means defer all specific treatment. If the disease turn out to be a soft chancre, the use of mercury might have been quite injurious,—at all events it is unnecessary; and by giving it, you prevent anything like absolute certainty as to the true nature of the sore and its consequences; for the undoubted effect of the remedy is to disturb, and even to prevent the natural evolution of the external manifestation of the diathesis. But where the case is an indubitable one of an indurated chancre, then the mercurial treatment should be commenced without any delay, with the view of preventing the outward manifestations of the diathesis. Some have feared that all such treatment, calculated as we see it is to arrest the external evolution of the diathesis, may, like

the wolf shut up in the sheepfold, do untold mischief, while there is a semblance of outward security. Such speculations, however, have no foundation in anything but the superstition of a vague and antiquated humoral pathology.

Some practitioners and patients, however, have a dread of the use of mercury in the treatment of syphilis which might be said almost to amount to a monomania. In some cases, this is traceable to the prejudices of early education and limited practical experience; in others, to popular prejudice, or a melancholy personal experience of mercurial poisoning on some previous occasion. In such instances, although we believe that mercury, properly administered, is the most safe and certain method of arresting the manifestation of syphilis and preventing its hereditary transmission, we have no hesitation, where prejudice exists, in complying with the wishes of the patient, and giving what we believe to be not so good, but still undoubtedly useful, in effecting the expulsion of the disease from the economy,—such as the hydriodate of potash or soda, guaiacum, mezercon, sarsaparilla, diuretics and sudorifics, accompanied with warm bathing, the vapour bath, a regulated diet, moderate exercise, and the avoidance of exposure, or of any cause likely to determine a fresh accession of constitutional symptoms. There are cases, too, where in any circumstances a tonic treatment is quite essential; as, for example, in those rare cases where the indurated sore is phagedenic, when tartarized iron will be found invaluable; or, again, when the symptoms of chloro-anæmia are accompanied with great lassitude and debility, then, besides the iron, quinine and stimulants must be employed. In very scrofulous cases, too, where mercurials will generally be found to be badly borne; then iodide of iron and arsenic, zinc, and cod-liver oil should be rather confided in. We must remember, too, as the disease gets older in the system, mercury becomes less useful than at first, and that the therapeutic effects of mercury are most markedly apparent in the early secondary symptoms; when these merge into the tertiary stage of the disease, then mercury either produces no effect whatever, or, if it is pushed, becomes an undoubted source of incalculable injury, hurrying on the destruction of the structurally altered textures by inducing suppuration, ulceration, and sloughing. It is in this, the tertiary stage of syphilis, that iodine in the form of hydriodate of potash comes to our help, and acts like magic both in improving the general health and in restoring the diseased tissues to their normal condition. Various vegetable tonics may render this more agreeable in its administration, and less irritating in large doses (which should always be employed); but there is nothing so specifically advantageous in the selection of sarsaparilla as to make it stand so high, as it undoubtedly does, in popular esteem. In its combination with iron, iodine will be found better borne in children, and more rapid in its good effects in anæmic adults. At one time fears were prevalent that the continued employment of iodine would give

rise to serious results, such as poisonous iodism and atrophy of the testicles. Iodism certainly is readily induced in many cases where there is not tertiary syphilitic taint; but in tertiary syphilis, iodine is well borne both by the stomach and the system in very large doses without producing discomfort or doing any injury. The supposed effect of iodine in producing atrophy of the testicles, is founded upon the fact, that in cases of syphilitic sarcocele of long standing, when the diseased condition is removed under the use of iodine, the organ is frequently found to become completely atrophied, and, on dissection, little of the tubular structure remains. But this atrophic state is due not to the iodine, but to the pressure of the tertiary syphilitic tubercular deposit. Of course, therefore, when the deposit is absorbed, the condition of atrophy, which had been previously disguised, is revealed.

The local treatment of tertiary syphilis consists, generally, in the use of blisters; in the application of stimulating lotions and applications to open surfaces, and occasionally, where sloughing cellular-tissue sores resist these other means of stimulation, in the application of potassa fusa, to destroy the enfeebled textures involved in the syphilitic tubercular deposit. Such, then, is a very meagre and brief sketch of the most approved principles upon which the treatment of syphilis should be conducted. One word further remains to be said with reference to a novel method, which has been much spoken of as a means of effecting the elimination of the syphilitic diathesis. We allude to curative syphilization. This method of treatment has, so far as we can see, no theoretical basis upon which it can stand; it has only the results of alleged success in its favour. This so-called remedy consists in the inoculation of chancres every third day upon the sides of the patient's trunk, until no further inoculation can be effected. Fresh virus is then obtained, and the inoculations proceeded with. When the sides become proof against any further inoculation, then the skin of the thighs is subjected to the same process, until they too, in turn, become proof against the influences of the virus. The patient is then supposed to be completely syphilized. (?) And it is said that the induration of the original chancre disappears during this process, buboes are beneficially affected, secondary eruptions and iritis are cured, and that even tertiary affections, such as periostitis and necrosis, get well under its magic influence. This so-called cure has been obtained by a period of continuous inoculation, extending, in Dr Sperino's published experience, over a period varying in different cases from one to seventeen months; and the majority of cases so cured were under treatment for the longest period. Under any circumstances, such a nasty, filthy mode of alleged cure is not likely to find much favour in this country. But, looking at it speculatively, it becomes at once obvious that this term of syphilization is a palpable misnomer, as it is no syphilization at all. That, from what we have seen, the patient acquired when he contracted

the indurated chancre; and having once become the subject of the syphilitic diathesis, he has acquired an immunity against all further repetition of the diathesis. If the matter of an indurated chancre is inoculated upon him, it usually produces no effect whatever; or, if it does, the sore is a mere soft-based sore, which produces no effects whatever, but cicatrizes rapidly. If, then, Dr Sperino, M. Auzias Turenne, and Professor Boeck are correct in their statements, that this inoculation is so easily practised, it must be with the matter of soft, non-infecting chancres that they have inoculated their patients: they have *chancerized* their patients, if they please, but not *syphilized* them! And such, in fact, seems to be the case; for the examples of inoculation given by Professor Boeck of Christiania are obviously produced by the virus of the simple, soft chancre, and not by the indurated, which, as we have seen, is the only possible source of syphilis. These so-called cures, then, of this all-prevalent diathesis are, after all, effected in reality by a mere local irritation, attended by a long-continued suppuration spread over some extent of surface; and an interesting fact, which bears out the truth of this explanation, is, that Professor Faye, also of Christiania, finds that repeated inoculations with tartarized antimony, or the introduction of a seton,—and others, that repeated blisters, produce equally good results, and in as short a space of time, as the so-called process of syphilization.

Such being the case, we must resort again to what we have already said, that there is no specific treatment which is calculated to *cure* syphilis. Various methods may serve to effect its elimination; and in our choice of these, we must be regulated by the constitution and circumstances of the patient, the stage of the disease, and the generally admitted fact, that ever since its commencement, mercurials have been found, when properly employed, to effect this elimination more speedily and more persistently than any other plan of treatment which for a time has obtained a great reputation.

ON

THE RELATIVE INFLUENCE

OF

NATURE AND ART

IN THE CURE OF

SYPHILIS.

BY

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PREFACE.

THE opinions which prevail among experts respecting syphilis, are at this present moment in a state of chaos. A great school had arisen, a great doctrine was announced, many ardent pupils had disseminated the teachings of the master; but before the lessons had time to filter into the deep strata of general practice, the master himself had recognised and acknowledged flaws in the beautifully contrived, but artificially constructed scheme; and nobody can now tell what part of his theories M. Ricord holds to, and what he gives up.

In this interval, whilst the artist is re-constructing his dismantled superstructure, I would endeavour to enlist the labours and sympathies of my fellow brain-workers in behalf of Nature herself, and ask them to give this our "kind mother" one more chance of showing whether in this disease, as in others, she is a Destructive or a Conservative Power. We have been taught that, although other diseases may be modified and subdued by the benign effects of the *vis medicatrix naturæ*, Syphilis is beyond the pale of this kindly influence. I will simply say here, that I have put this assertion to the test, and have found it, happily, not true. Distrustful of my own examination of the

question, I have sought amongst the writings of the men of most experience for enlightenment; and in the following pages have epitomized their various opinions.

Having during the last seventeen years been largely engaged in the treatment of this disease at the Royal Free Hospital, where many thousand cases are seen during the year, it will readily be supposed that every kind of treatment has been adopted to facilitate the cure. Beginning, as I had been taught, with the mercurial treatment, I was enabled to test its remedial power upon a very extensive scale. Driven by failures and frequent relapses from this scholastic resource, I passed to other less injurious methods of treatment, and had the satisfaction of finding, that, under these circumstances, the disease never assumed those frightful forms which were seen when it was treated by mercury.

I have not attempted to write an elaborate treatise upon Syphilis. If the active duties of a laborious professional life did not preclude me from undertaking such a task, I should nevertheless be disinclined to go systematically through all the varying outward appearances which result from this poison. I have taken the disease as a whole, investigated the theories to which it has given birth, observed it in its natural progress, and formed my conclusions from so large a basis, that I feel myself not only justified, but called upon to put them into circulation, and submit them to the judgment of my professional compeers.

There is one statement found in books, which I take the liberty of refuting here. It is asserted that there is so much difference between hospital and private patients, that the treatment which

is good in one case is bad in the other. I assert that there is no foundation for such a statement. Syphilis is no respecter of persons. No class is exempt from its constitutional effects. The hygienic and dietetic means of cure are certainly more within the grasp of the one class than they are of the other; but, independently of this, the *methodus medendi* is the same, and the therapeutic measures for carrying it out apply equally to all ranks; constitutional peculiarities being the only guide for varying our remedial agents.

T. W. C.

76, UPPER BERKELEY STREET,
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June, 1861.

THE RELATIVE INFLUENCE OF NATURE AND ART

IN

THE CURE OF SYPHILIS.

CHAPTER I.

THE Natural History of Disease has no literature in this or any other country. Custom, since the time of Hippocrates, and further back, for aught we know, has so compelled the interference of Art, that he who should propose to stand by and watch, without attempting to aid or thwart Nature in her reparative or destructive proceedings, would be considered inhuman, and render himself liable to the penalties of legal enactments. It is true that Pathology teaches what has happened to various organs which have been fatally injured by disease. It is likewise true that a small band of thoughtful men, seeing the imperfections and failures of the medical art in many of its most important requirements, have, by a system called Expectant Medicine, sought to study disease in its natural progress. But *stare vias antiquas* is so much the rule and habit of our nature, that the difficulty of going back to first principles, and finding out what Nature would do in all diseases if left to her unaided forces, is almost insurmountable. And yet without this fundamental knowledge medicine must remain, as it has been called, a conjectural art.

Two causes tend to obstruct the prosecution of the study of

the natural history of disease. The first of these is the remarkable ignorance of the general public in all matters pertaining to medicine as a science; the second is the blind observance of routine, and the want of boldness in the teachers of our students in the various schools and colleges.

Although every gentleman can discuss with you, political and legal rights which affect the disposition of person and property, and although few in this country delegate to another the selection of their form of belief in a future state, because most men consider themselves competent judges in such important matters; it is nevertheless a fact that, as regards the structure and functions of their own bodies—theirself and all those about them—they know nothing. The *γνώσις αὐτοῦ* has been applied to the mind, but never to the magnificent machine which was made "after His own image." Because of this strange disregard, even amongst the most highly educated, of a knowledge which should be applied to check, and criticise, the operations of the professed expert, when called to remedy some temporary defect in the working of the machinery; the blundering ignoramus is confounded with the intelligent and instructed seeker after truth, and he who loudly promises, is ignorantly preferred to him, who quietly performs. But if the so-called educated public is to blame for the encouragement it gives to blatant empiricism, and the consequent death-blows it deals to the advancement of scientific medicine; how much more to be condemned are those enlightened professors who teach doctrines they do not carry out in their practice, and leave young men to wade through the same exhaustive process they themselves have traversed? Do not all men of large experience know, how much foundation there is for the sayings of those eminent physicians, Dr. Baillie and Dr. Williams of St. Thomas's, "That in early life we have many

remedies for each disease, but that in advanced life we have one remedy for many diseases?" If experience acquires this knowledge in one generation, why is it not applied in the next? and why are our young men continually drilled and manoeuvred after an effete fashion, which will influence for a lifetime all those who have not subsequent opportunities, and habits of independent inquiry given them, to enable them to throw off the uniform of the schools, and discard many useless weapons in favour of that sterling few whose temper cannot be impeached?

Even now, the Pharmacopœia, that official olla podrida, is undergoing the process of revision, and doubtless, amplification; and whilst there are only some half dozen effects to be produced in the human body, for the relief of its disordered functions, there will be doubtless as many hundred remedies authoritatively proclaimed, to the mystification of both patient and student, and the exaltation of the details, at the cost of the guiding principles of art.

Man, impatient of the physical evils to which he is liable, has sought relief from so many artificial sources, that drugs have multiplied like Acts of Parliament. As a codification of the latter is being attempted, so should we endeavour to eliminate from the long list of the former those less efficient duplicates, which cumber the thoughts of the student. Thus may we bring out into bolder relief, the active virtues of our really useful drugs, and with the aid of a good classification, in accordance with the respective actions of these remedial agents upon the animal economy, we shall be prepared at once to apply the force which produces the physiological effect we desire to obtain, and so rationally and really help Nature to combat the disease, which is interfering with the due and healthy processes of life.

With so intricate a machine as the living human body, capable

of being affected by so many extrinsic as well as intrinsic influences, each individual differing from his neighbour, it should be perhaps no cause for wonder that those who have devoted themselves to medical studies, have in times past theorized on insufficient data, and been led away by the metaphysical fashions of an age to cover in a mist of logic and false ratiocination, the partial truths revealed by the observation of a few cases. The medical followers of the illustrious Bacon were few and far between, until, less than half a century since, an enlightened French physician applied those glorious teachings of the philosopher to the study of disease, and the bread which our own Solon had cast upon the waters, returned to his native land after years of forgetfulness and neglect.

Although the true inductive method of study is of comparatively modern date amongst us, it has already obtained triumphs of no ordinary character; and whilst it has confirmed some, it has, on the other hand, disturbed and overthrown many of the previously accepted theories, and modes of practice, enjoined by the more Aristotelian school of the previous century. Perhaps in no disease, with the single exception of phthisis, has this *bouleversement* of opinion and practice been more manifest than in the case of syphilis.

CHAPTER II.

It is now nearly four hundred years ago that Syphilis spread over Europe like an epidemic, and no class was exempt from its horrible effects. Looked upon in the light of any other infectious disorder, the medical authors of the time did not scruple to publish the cases of princes, abbots, bishops, cardinals, and even popes. Treatises on the venereal disease were dedicated to princes and dignitaries of the church, and one ecclesiastic published even his own case. At that time, the Church held the keys of all knowledge, and her curates exercised the medical art in aid of her spiritual as well as temporal aggrandizement. With the imperfect knowledge such an education necessarily gave, it follows that all treatment of this disease was not only empirical, but ridiculous. Gradually, as the incubus of ecclesiastical supremacy was removed, and laymen were induced to devote themselves to the study of medicine as a science, various remedies for syphilis were suggested, and employed; but still this disease continued to be a scourge to society, baffling and setting at naught the science and industry of the most learned men of the time. Mercury, a drug much used by the Arabian physicians, was one of the remedies that was tried in the earliest recorded cases; but it soon fell into disuse, owing to the ravages its indiscriminate employment effected. Then came guaiac, mezereon, sarsaparilla, sassafras, the mineral acids, sulphur, antimony, and a host of

other less known drugs, each having their especial advocates and their brief reign of popularity, and all in their turn subsiding into a not unmerited obscurity.

Among the host of writers upon syphilis, perhaps Grunbeck, and Petrus Pinetor, physician to the licentious Pope Alexander VI., whose works appeared a few years only after the great outbreak of the disease, on the return of Columbus from St. Domingo, were the only authors up to the beginning of the present century, who conceived and enunciated the true principles of treatment. And although these physicians did not themselves carry out their own views, in the rational manner which is now adopted, by those who agree with the fundamental principles they had the credit of propounding; there is no question that the conclusions they arrived at, from the contemplation of a disease new to them, and in the treatment of which they were unbiassed by any established, or routine line of practice, were those which Nature herself taught to observant men; and every deviation from those conclusions has created confusion, and error, from which the community at large has suffered to a most terrible extent. Petrus Pinetor, in the treatment of syphilis, urged the application of the precept laid down by Rhases and Galen:—"Debet medicus *juvare naturam* ad expellendam materiam ad superficiem cutis;" whilst Grunbeck, who had himself suffered from the disease, adds to the eliminative theory the observance of a due care for the supply of healthy nourishment:—"Et est rectificatio corporis, et hoc contingit bifarie, uno modo per debitum vite regimen, alio modo per debitam evacuationem."

These rules of practice were too simple to prevail in those days of mystery and occult art. Theories very soon superseded actual experience; and specifics, acting as opponents to the venereal virus, were sought for in all the agents which were

employed to remedy this disease. Mercury was supposed to have an occult power over the disease. When once faith is exalted over reason in medical matters, we have evidence in our days of the extent of folly to which even educated men will commit themselves. We must not wonder, then, that, in days gone by, the "occult" power of mercury being granted, its use became an abuse of the most frightful character; and the more the disease would not yield to its employment, the more was the unhappy sufferer plied with the "occult" mineral. The universal belief in the fables of astrology showed that men's minds were governed by fanciful theories incapable of demonstration, so that the corruption of the medical mind was in accordance with the fashion of the period—a fashion which pursued the *ignis fatuus* of a spurious ratiocination, in preference to a calm observation of the natural laws which govern the universe, the study of which is the highest and noblest pursuit of man.

It has been remarked that the first observers of the new disease which spread over Europe at the termination of the fifteenth century, were, in their ignorance, necessarily students of Nature. To them was accorded the advantage which is rarely obtained in the present day, of noting how syphilis will behave itself in the human frame, when left wholly to its own devices; and we have seen that these observations led two of the most prominent men of the time to the conclusion that elimination of the poison, principally by the skin, but impliedly by the other natural outlets of the body, was the most efficient method of curing the disease. There is likewise a somewhat extraordinary confirmation of these early opinions given in a book published in Brussels in 1662, by one Sieur Emanuel d'Aranda, who had been in captivity at Algiers. He says, "My master, Alli Pegelin, among his slaves, had one named Juan Motoza, who

was so miserably afflicted with the venereal that he became unable to work. When the spring came, and the galleys went to sea, Juan Motoza was ordered to embark in one of them. This was anything but agreeable to him, thinking that hot-air baths, and the like, would be more proper for his cure than rowing in the galleys; he therefore went to his master, and addressing him, said, 'Your Highness has ordered me on board a galley, for which I am wholly unable; and I have hitherto been excused from working, being sick and disabled both in my legs and arms.' Pegelin said to him, 'What is the matter with you?' Motoza told him the nature of his complaint. Then Pegelin, laughing, said to him, 'Go on board the galleys, and that will make thee sooner well than all the stoving in Spain.' So Juan Motoza embarked, was chained by the leg like the other slaves, and, by the help of the cow-skin, they made him row like the others. His daily food consisted of an old and dry biscuit, his drink clear water. At the end of forty days Juan Motoza was entirely cured. The reason is," says d'Aranda, "that, by the hardness of the labour, he had sweated excessively, and had, besides, eaten dry food."

Although the absence of a reliable diagnosis in the case of Juan Motoza, and the uncertainty of the permanence of the cure, are weak points in the narrative; we have the testimony of Fallopius and Van Swieten in support of the statement, that men condemned to the galleys in the Mediterranean, were cured of the venereal disease, by the hard labour they endured. Notwithstanding that Van Swieten, like his distinguished master Boerhaave, used mercury very largely in his treatment of syphilis, he was too honest not to perceive that in many instances, this mineral, not only entirely failed in effecting a cure, but that its continuance had the effect of aggravating all the symptoms. In his *Commentaries* he relates

the case of a young gentleman who was reduced to the most deplorable condition. He had undergone four salivations, after each of which, the disease still broke out afresh. He had nodes on the sternum, clavicles, and forehead; his skin was covered with blotches, and he had nocturnal pains in his bones. "As he was poor and destitute," continues Van Swieten, "I placed him with a husbandman, in the station of a servant, without any other wages than his victuals, which were homely and scanty. His drink was thin sour-whey and buttermilk. He began this kind of life in the beginning of April, and resolutely continued it until the beginning of October, when he returned perfectly recovered. I saw him some years afterwards, married, and blessed with a healthy progeny." A stronger proof of the remedial powers, inherent in the human frame itself, it would be impossible to relate. Here do we see Nature triumphing over Art, and rebuking the artist in the most emphatic tones, for his persistence in a plan of treatment, which his senses should have told him was in violent opposition to the reparative process Nature herself was prepared to employ. Similar cases have passed under my own observation, but I reserve any further reference to them until we have seen what efforts have been made during the present century to study the natural history of syphilis, when uninfluenced by what has been called specific treatment.

CHAPTER III.

THE treatment of the venereal disease in all its forms, up to and far into the present century, was founded upon the theory that there was a sort of foul fiend to be fought with, and mercury was the exorcising power to be used for his discomfiture and banishment. Our continental wars about this time gave the surgeons of our armies large opportunities of witnessing, on the one hand, the ravages and mutilations attendant upon the mercurial courses almost universally employed in the English army; and, on the other hand, not only the immunity from these miseries amongst the people and armies of other nations, but the far less severe character of the disease; and, moreover, the rapid cure of it without one particle of mercury. As is the case in the present day, in those schools where mercury is still looked upon as the *summum bonum* of all treatment, the surgeons of that time were horrified at the idea of treating syphilis without mercury. The English surgeon of those times did not differ from his fellow-countrymen, and treated with scorn and derision the opinions and practices of "ignorant" foreigners. Happily there are always a few cosmopolitan minds amongst the mass, who have the wit to see and acknowledge their own errors, and adopt the better customs of even their enemies. The names of Hennen, Rose, Guthrie, and Samuel Cooper, of William Fergusson, Inspector-General of Hospitals to the Portuguese army, Green of

Bristol, and Carmichael of Dublin, deserve always to be mentioned with honour, as having broken through the trammels of a deep-rooted practice, made the more difficult to upset on account of its having been recently strengthened, and apparently finally established, by the great authority of no less a person than John Hunter.

It needs not to show how that, owing to the natural and praiseworthy influence of a man so distinguished as John Hunter, the mercurialists flourished at the close of the last and the dawn of the present century. Having adopted the theory that syphilis, when once established, was ever progressive, and never let go its victim, unless arrested by mercury, Hunter was led into the error of denying to Nature that reparative power in this particular disease, which he had shown to have such paramount influence in all inflammatory affections, and more particularly in lesions of the muscular and the bony structures. Towering as he did over all his contemporaries as a physiologist, and by his indomitable perseverance and energy revolutionizing and re-creating the science of natural history, the members of his own profession were prepared to receive whatever dogmas he chose to establish, as Nature's laws, not to be controverted.

Following the usual bent of all enthusiastic students, the opinions and practice of the master were not only exaggerated, but misapplied; and for many years, in the London and provincial hospitals, in the army and the navy, as well as in civil life, the use of mercury was rife and rampant. Mr. John Pearson, Senior Surgeon to the Lock Hospital, writing in the year 1800, says: "My opportunities of administering mercury have not extended to less than twenty thousand cases; and I feel myself fully authorized to assert, that it is a remedy always to be confided in, under every form of lues venerea; and where we have only

that one disease to contend with, that it is a certain antidote, and as safe in its operation as any other active medicine drawn from the vegetable or the mineral kingdom."

With thoughtless, illogical, and grim significance, the same author thus unconsciously comments, in a different page of the same work, upon his own opinions and practice: "In the course of two or three years after my appointment to the care of the Lock Hospital, I observed that in almost every year, one, and sometimes two instances of sudden death, occurred among the patients admitted into that institution; that these accidents could not be traced to any evident cause, and that the subjects were commonly men who had nearly, and sometimes entirely, completed their mercurial course.

"The morbid condition of the system which supervenes on these occasions during a mercurial course, and which tends to a fatal issue, is a state which, in a former work, I have denominated *Erethismus*; and is characterized by great depression of strength, a sense of anxiety about the *præcordia*, frequent sighing, trembling, partial or universal, a small, quick pulse, sometimes vomiting, a pale, contracted countenance, a sense of coldness; but the tongue is seldom furred, nor are the vital or natural functions much disordered. When these symptoms are present, a sudden and violent exertion of the animal power will sometimes prove fatal; for instance, walking hastily across the ward, rising up suddenly in the bed to take food or drink, or slightly struggling with some of their fellow-patients, are among the circumstances which have commonly preceded the sudden death of those afflicted with the mercurial *erethismus*." In such a case the Senior Surgeon of the Lock Hospital gravely advises a discontinuance of mercury, and even thinks that "it may not be superfluous to add, that a perseverance in the mercurial course, under

these circumstances, will seldom restrain the progress of the disease, or be productive of any advantage."

Mr. Geoghegan of Dublin, writing at about the same time, in a work dedicated to Mr. John Pearson, says:—"A case was communicated to me, in the year 1799, of a young man who was using mercury for chancres, and when they were nearly healed, a dressing of the ung. *æruginis* was applied to a small sore that proved obstinate; inflammation succeeded, the dose of mercury was increased, mortification took place; two surgeons of great experience were employed; they advised calcined mercury to be given instead of the ointment. The mischief increased, all the neighbouring parts were destroyed, and it proved fatal." Although a warm advocate of the use of mercury, the same surgeon relates the case of "a gentleman who applied for advice immediately on discovering a small chancre. He was directed to rub in a drachm of mercurial ointment every night, and to take a mercurial pill twice a day; after the third friction, his mouth showed that the mercury had taken effect, yet the sore increased in size; phymosis took place, the mercury was persevered in, and the complaint was aggravated. I saw him on the fourteenth day, when one half the glans and prepuce were mortified. He expressed great surprise at his condition, after having applied the remedy at the moment the disease appeared." This author mentions other cases in which mercury, although aggravating the symptoms, had been re-employed three or four times in the same patient, and because the poor creatures ultimately escaped with their lives, it was considered that the power of the mineral over the disease was fully established.

In the present day, it seems extraordinary that such an evidently vicious practice should have been so persevered in, and that men having large opportunities of studying the effects of

remedies, should have so blinded themselves to the evil produced. The influence of authority is always most tyrannical, and he who shall dare dispute the dictum of a great man must be content to be considered a very small one, until, by great good fortune, the better practice be engrafted by the great one himself, or be brought into prominence by a successful rival.

This specific and artificial mode of treating syphilis had the effect of altogether preventing any observations as to how Nature would behave if the disease were left to her tender care. Until called into foreign lands by the exigencies of war, our army surgeons, at the commencement of the present century, had no opportunity of observing how syphilis affected other communities, and what means were employed to combat its effects.

Mr. Wm. Fergusson, Inspector-General of Hospitals to the Portuguese army, was among the first to observe and report upon the treatment of syphilis without mercury. In an admirable paper read before the Medico-Chirurgical Society, in 1812, Mr. Fergusson shows that the Portuguese suffered very much less than the English when attacked by syphilis, and that secondary symptoms were very rare amongst them, notwithstanding that their medical men used no mercury in the treatment of the disease, for which they were much ridiculed by the more learned and orthodox English. He says:—"I have now been upwards of two years at the head of their hospital department, and I can declare that it never occurred to me, amongst all the venereal patients whom in that time I have seen pass through the hospitals, to meet a single one under the influence of mercury, excepting those cases wherein I myself have personally superintended its administration. They go out cured by topical remedies alone, and I have lived long enough amongst them to ascertain that their return to hospital under such circumstances, for secondary symptoms, is far from an

universal, or even a frequent occurrence." The non-mercurial treatment became so popular in the German Legion at this time in the service of England, that the surgeons pertinaciously and even officially refused to prescribe mercury in syphilis, although ordered to do so by their superior officers.

It may be supposed that climate had much to do with the mitigation of the disease, and so no doubt it has; but in order to prove that it had but a small influence, and that the abandonment of the mercurial courses was equally efficient in our own country, it is only necessary to refer to the papers of Mr. Rose, of the Coldstream Guards, and Mr. Guthrie, both published in 1817, when peace brought leisure and opportunities for pursuing this inquiry in a systematic manner, to show that mercury is not the specific it had been represented to be, and that perfect cures may be obtained without a particle of this mineral.

Mr. Rose says:—"I ventured to lay aside mercury entirely, with a view of observing for a time the progress of the virus when not interfered with by that specific. This we have seldom an opportunity of doing, as, from the confidence so unanimously entertained in it as an antidote to syphilis, few cases of the advanced stages of the disease are met with in which mercury has not been administered in some form or other. All ideas of specific remedies were entirely laid aside. The patients were usually confined to their beds, and such local applications were employed as the appearances of the sores seemed to indicate. Aperient medicines, antimony, bark, vitriolic acid, and occasionally sarsaparilla, were administered, if from any circumstances they were judged necessary." The local applications employed were principally solutions of hemlock and opium. No question can be raised about the reality of the syphilis of which Mr. Rose speaks, because he takes especial pains in

the record of his cases to mark the indurated condition of the primary sore.

Here, then, we have an exposition of how our alma mater Nature will act, when assisted only in her own plans, and when she is not thwarted by abortive attempts to supplant her in her own domain. "Without including," says Mr. Rose, "many slighter ulcerations, and those of which I lost sight immediately after their cure, I have, during the last two years, treated on the same system more than one hundred and twenty cases where I have been able to ascertain that my patients were in perfect health for many months afterwards." When the constitutional affection did follow this treatment, it was extremely mild, "and sometimes so slight that it would have escaped notice if it had not been carefully sought for." The more severe forms of ulcerated throat, and caries of the bones, were unknown in Mr. Rose's practice.

Mr. Guthrie, pursuing the same inquiry, says, in his "Observations on the Treatment of the Venereal Disease without Mercury," in the eighth volume of the *Medico-Chirurgical Transactions*:—"During the last eighteen months, in the York Hospital, Chelsea, Mr. Dease, Dr. Arthur, Dr. Gordon, and myself, have been in the habit of treating all cases of ulcers on the penis, whatever form or appearance they might have, by simple mild means, that is, by dry lint, or ointments or lotions for the most part not containing mercury, in order to obviate the objection that might be made to the application of it in any form; and of near one hundred cases which have been treated in this manner, all the ulcers healed without the use of mercury; and among them there were of course many of every description, from the common ulcer without excavation or induration, to the solitary ulcer possessing the true characteristics of chancre. Since Mr.

Rose, of the Guards, began to treat his people without mercury, and the practice was adopted at the York Hospital, it has been followed at several of the hospital stations: at Dover, at Chatham, and Edinburgh; and in different regiments at home and abroad, especially the 57th, and the Staff Corps of Cavalry in France. From these hospitals I have seen the reports of near four hundred cases more, which have been treated with the same results, as far as regards the cure of primary ulcers; each ulcer appears to have run a certain course, which, as to extent, was much the same as in one of the same appearance where mercury was supposed to be necessary; and at an indefinite period of time to have taken on a healing action, and in the greater number of instances skinned over rapidly, leaving a mark or depression showing a loss of substance. Of the hundred cases referred to as treated at the York Hospital, Chelsea, Mr. Guthrie says that six only were known to have secondary symptoms, and five of these were cured without mercury. In none were the bones affected. It will be observed that the treatment employed in these hundred cases was entirely local, and in reference to that circumstance, Mr. Guthrie says: "I have reason to think, from the treatment of other cases, that the duration of many of these cases might have been shortened by the regular exhibition of cathartic medicines combined with sudorifics."

Two hundred cases were treated without mercury in Edinburgh, fifty in the Dover Hospital, and large numbers by the surgeons of the 57th Regiment, and the Staff Cavalry Corps, with the same favourable results. The constitutional symptoms when they did appear were always much mitigated, and it was doubtless a great boon to the service, that the horrible effects of salivation were now divorced from the sufficiently miserable results of illicit intercourse.

Mr. Guthrie concludes his observations with the assertion that every kind of ulcer of the genitals, of whatever form or appearance, is curable without mercury. "This I consider to be established as a fact from the observation of more than five hundred cases."

Notwithstanding the large amount of evidence brought forward by these "Travelled Thanes," the English civil surgeons who "stayed at home at ease" were too much wedded to the practice propounded by Hunter, and supported by Abernethy, to give heed to the new-fangled notions of the military surgeons; but in Dublin and in Edinburgh the anti-mercurialists began to have some influence and authority, and from these schools emanated men who commenced the study of syphilis *de novo*, and brought to bear upon the subject philosophic minds unembued with the prejudice and superstition, as it may be almost called, respecting mercury, which prevailed in England. Wallace of Dublin treated syphilis by topical applications, and the internal use of nitrous acid; and found "cases treated in this way very seldom followed by secondary symptoms." Carmichael also treated many of the forms of secondary eruption without mercury; whilst Thompson and Syme and Liston in Edinburgh, were teaching anti-mercurial doctrines in the modern Athens. But undoubtedly the most elaborate and most valuable contribution to the literature of this subject was made by Drs. Fricke and Günther of the Hamburg General Hospital. The profession is under a deep debt of gratitude to that learned physician, Dr. Graves of Dublin, for giving in his remarkable practical work on "Clinical Medicine," a digest of the labours of these German surgeons during the years 1824, 25, 26, and 27; and in so doing, he pledges himself to the fidelity of the details and results.

The treatment of syphilis in the Hamburg Hospital during the above years was divided into two periods. During the first, mercury was employed as the chief remedy; during the second, the disease was treated after the non-mercurial plan. The former comprised, for males, a space of eighteen months and a half (from January, 1824, to July, 1825); females, twenty-two months (January, 1824, to October, 1825). The latter included, for males, a period of two years and five and a half months; for females, two years and two months.

A concluding paragraph sums up the results of the mercurial treatment during the first period in the following words:—"With regard to the certainty of cure, so far as the mercurial treatment is concerned, we must say, with many of our unprejudiced colleagues, that we are convinced by bitter experience that syphilis very often returned, in the secondary form, after the most cautious use of mercury, the most careful selection of the preparation, the strictest attention to diet, and a proper observation of precautionary measures. Of five hundred and seventy-three patients treated during the first period, one hundred and sixty-five (*i. e.*, nearly one-third) were attacked with secondary symptoms. All these were treated with mercury for the primary symptoms. Many patients came back (particularly after the use of mercurial frictions) with caries of the bones of the face; some of these were afterwards cured without mercury, others are still under treatment." These authors remark further that "iritis and alopecia were observed only in a few cases, and invariably in patients who had been treated with mercury." Of the second period, *i. e.*, the treatment of syphilis without mercury, the report says—"After a trial of two years and a half, and the successful treatment of more than a thousand patients, the results of this treatment have proved so

favourable, that there appears no reason for lightly abandoning it, or returning to the former plan of treatment. As already stated, patients are cured in a much shorter time than before, and leave the hospital with much healthier looks. All the unpleasant phenomena attendant on salivation no longer harass them."

The treatment employed was great attention to cleanliness, rest in bed, a farinaceous and vegetable diet, and antiphlogistic medicines. When secondary symptoms arose, nitric acid and a decoction of the anti-syphilitic woods were administered.

Dr. Struntz, in a paper published in the *Berlin Medical Gazette*, says, that of seven hundred and forty-one patients, he had not met with a single case in which the non-mercurial plan had not succeeded. The celebrated Russian surgeon Pirogoff employed the non-mercurial plan of treatment, and found that relapses were less frequent and less violent than when mercury was used.

Whilst the Dublin school was conspicuous for a great diversity of opinion respecting the pathology as well as treatment of syphilis—Colles, and Carmichael, and Wallace, each in their published treatises propounding different theories, and pursuing a separate treatment—there can be but one opinion that their investigations did very much to improve and ventilate this obscure and difficult subject, and in some measure to anticipate much that has since been done in the Paris schools under the able leadership of the distinguished Ricord. Indeed, if we go back to the great outbreak of the disease in the fifteenth century, we shall find that the physicians of that time carefully noted and recorded the difference between the hard and soft chancre, although they did not arrive at the conclusions which Carmichael and Ricord have done respecting the all-important difference between these two pathological conditions. As time

passes on, and we now review the labours of M. Ricord in this department of pathology, we involuntarily accord him a high place in the Alhambra of Fame, for the great industry, perseverance, and freedom from prejudice, he has displayed, added to a logical intelligence, emphasized by an unwavering regard for the whole truth, whichever way it might affect his doctrines or his practice. The anti-mercurialists had never made much way with the Parisians; but when Ricord commenced his labours, M. Cullerier, his senior colleague in the Paris Venereal Hospital, was pursuing that plan with much satisfaction to himself, and benefit to his patients.

Before entering upon a consideration of the precise views of Ricord, it may be well to place before the reader the results of M. Cullerier's investigations, because they form the latest testimony in favour of the non-mercurial treatment previous to M. Ricord's appearance before the world as a syphilographer. M. Championnière, summing up the experiences of M. Cullerier, says:—"First, that the relapses after the employment of the simple treatment, regularly administered, are extremely rare, but that they occur at a very early period after the primitive infection; second, that those after primitive symptoms, abandoned to themselves, or of which the cure has been accelerated by cauterization, are not rare, but that in general they are not very serious; third, that the relapses of the incomplete mercurial treatment are very common, and that consecutive symptoms of all kinds, and of all degrees of severity, manifest themselves at every period; lastly, that the relapses among individuals who, at every appearance of primitive symptoms, have undergone a mercurial treatment in a manner the most complete, amount to a fourth part in the sum total of those he has observed; that they are excessively severe, and almost always consist of affections of

the fibrous and osseous systems, chronic tubercular affections of the skin, or extensive ulcerations of the mucous cavities."

The inoculations and clinical observations instituted by Ricord enabled him to show, as he conceived, which chancre was capable of infecting the whole system, and which was only local in its effects. Believing that he had established the fact that a soft chancre, which reproduced itself by inoculation, would not be followed by secondary symptoms, he treated this form of ulcer simply and successfully. The hard chancre he found incapable of transference by inoculation, and this was invariably succeeded by secondary symptoms, unless they could be arrested and prevented by the administration of mercury. Now, if this simple arrangement could be relied upon, the discovery would be the most practical and beneficial pathological improvement of modern times, excelling even in its importance the grand results obtained by Dr. Bright's investigations into the pathology of the kidney. But alas for human happiness, and alas for man's science, this beautiful theory, although having some considerable foundation, is but "a thing of threads and patches"—a royal ghost, it is true, but still a ghost, which must, and does, fade before the daylight of truth and experience. The explanation which this charming simplification of a theoretical chaos offered, of the success of the non-mercurial treatment, was balm to the hurt minds of those who followed the doctrines of Hunter, and Abernethy, and Colles with obsequious idleness. It was now plain that the venereal disease which had been cured without mercury, was not syphilis at all, and that the lively mineral was not only to be reinstated, but to be more than ever deified, if not by the master, at any rate by his pupils, as the only true specific for the veritable lues. Bow your heads, ye believers in the reparative powers of Nature, and let no man call himself surgeon

who dares to cure syphilis without the intervention of a six months' course of that peculiarly mild and always harmless specific. The young surgeons who came back from Paris were triumphant in the journals, in our societies, and in their published works, respecting the diagnosis of chancres. There was no longer any doubt about what kind of ulcer would infect the system; and when that ulcer was found, then, and then only, was mercury to be employed. Tables of the diagnostic characters of the hard and soft chancre were nicely drawn up, and from these papers it appeared that no one could fail to discriminate between the two. No hint was given that weeks may elapse in some instances before induration shall attack an apparently innocent ulcer, and the possibility of the virus of a soft "non-infecting" chancre producing a hard "infecting" sore was kept studiously in the background. These were little nodosities which somewhat obscured the brilliancy of the great discovery, and they were put on one side for after consideration at some convenient opportunity. Whilst the old experienced surgeons of this country maintained a significant silence, one, who may be supposed to speak their thoughts, although himself a young and teachable man, did not forbear to protest against many of the ideas put forward as proved facts by the Ricordites; and in his "Report on the Treatment of Syphilis," showed, from cases recorded in the public case-books of the hospital, that the grand division of "infecting" and "non-infecting" chancres did not hold good; that the suppurating bubo was not a protection to the constitution; and that the recurrence of secondary symptoms was in a great measure due to the habits of the patient. There is some inconsistency, however, in the paper of Mr. Holmes Coote, for whilst he acknowledges the production of constitutional symptoms after soft chancres, he deprecates the employ-

ment of mercury in these cases, and at the same time urges it in the event of an indurated chancre. The old fear of daring to act in opposition to an established routine, warps the minds of many of our best men. There is another peculiar statement of Mr. Holmes Coote which calls for observation, seeing that it is contrary to all experience, as far as I have been able to ascertain, and is positively contradicted by my own inquiries. He states that "the natural structure of the part determines the character of the sore," and that "the dense structure of the glans renders the occurrence of an indurated chancre impossible." If the first of these assertions were true, mercury must be as necessary, in Mr. Coote's opinion, for the cure of soft chancre as of the hard; and if the second statement could be relied upon, we ought to have no hard chancres at the orifice of the urethra, occluding as they sometimes do the passage, and necessitating operative measures to permit the due emission of the urine. In fact, there is no end to the irreconcilable inconsistencies which pervade the writings of all authors upon this subject during the last thirty years.

Take, for instance, the great distinguishing feature of Ricord's opinions, so fully adopted by his very able exponent in this country, my friend and colleague, Mr. de Méric, and no less approved by Mr. Acton. If there be one point that is insisted on more than another, it is that the hard chancre infects the system unless prevented by mercury, and that the soft chancre does not infect the system. It is then shown as positively that the hard chancre is incapable of reproduction by inoculation. How, then, we may be permitted to ask, shall the hard chancre be communicated to a second person? It has been somewhat coyly conceded by those who value truth more than theory, that a soft chancre in one person may produce a hard chancre in

another; and, indeed, if it were not so, the disease must necessarily die out from the very obstinately unsocial character of the hard chancre. And if the soft chancre is, and must be, from the non-communicability of the hard chancre, the means of conveying syphilis from one person to another, how is it possible to maintain the specificity of the one form of ulcer over the other? The theory is beautiful, but untenable; and practice forbids its reception. The only rational explanation of the different symptoms which attend these two forms of ulcer, must be sought for in the different constitutions upon which each has been engrafted.

In the case of other animal poisons, we are accustomed to see some persons resist their influence altogether, whilst others are killed by a puncture. To these cases we at once apply our knowledge of the resisting or the non-resisting powers of the individual; whilst in syphilis, since the reign of the French pathologists in this department of surgery, we have abjured altogether the whole man, and given ourselves up to the study of the varying aspects of a local symptom. Those surgeons who adhere to the Ricord theories respecting chancre, will think it of the highest importance to distinguish the "infecting" from the "non-infecting" sore, and I have been told in a public society by a surgeon of repute, who has warmly espoused these opinions, that it is an easy matter to say what is and what is not a hard chancre. Respecting this important point I find much difference of opinion amongst authors, and will take the liberty of quoting here Mr. Henry Lee's opinions, as given in the recently published *System of Surgery*, edited by Mr. Holmes. He says, "We have at present no generally recognised and well-defined mark of distinction, independent of inoculation, between those diseases which are syphilitic and those which are not." Again,

"Infecting chancres do not generally show their specific characters for some time—even a month has elapsed before the induration has appeared." And again, "It must be borne in mind that the character of a sore at one time is no certain indication of what it may previously have been, or of what it may ultimately become."

When a gentleman of so much experience and logical acumen as Mr. Henry Lee, finds such obstacles to the ready recognition of an infecting as distinguished from a non-infecting chancre, we can afford to leave the dogmatists to their own unsupported assertions. Mr. Acton, feeling the difficulty of admitting the subsidence of a hard chancre without subsequent constitutional symptoms, has described a "bastard chancre," which, having a hard base, wants some of the peculiarities of the so-called true syphilitic sore. He and others speak also of induration as the result of common inflammation. All these refined definitions show the difficulty of arriving at a description of that form of chancre, which alone shall be followed by constitutional syphilis. Even the master, Ricord himself, says, with his usual honesty, "I am not afraid to declare, were I even taxed with ignorance, that there have been cases where I found it impossible to give a decisive opinion with regard to a suspicious ulceration; and I am unfortunately not the only one thus puzzled."—Ricord's *Lectures*, translated by Victor de Méric.

Mr. Henry Lee endeavours to account for the hard, and the soft chancre, by attributing the former to an adhesive inflammation, lymph being the product; whilst the latter is due to suppurative inflammation. Although this opinion goes far to rob the hard chancre of its peculiar specific properties, and throw the disposing power back upon the individual constitution, yet Mr. Lee maintains the specificity of the hard chancre, and the non-

infecting nature of the soft chancre. How he reconciles these opinions with his experience as given in the following paragraph it is difficult to understand—

"It is not very uncommon in practice to see a suppurating sore continue for three or four weeks, when the suppuration will cease, and the part will become specifically indurated, and the patient will have secondary symptoms."

This exposition of an every-day experience, taken together with the admission of M. Ricord himself, the necessity for establishing "bastard chancres," and common hypertrophic chancres; and the undoubted fact of the occurrence of secondary symptoms consequent upon soft chancres, as recognised by Guthrie and Wallace, and many of the writers upon this subject at the early part of the century, when these distinctions were recognised as fully as they now are; ought surely to lead to a modification of the opinions which now dominate, and of a practice which is every day declaring itself to be more permanently injurious even than temporarily beneficial, which hides the wound for a season, but in truth acts only as the veil did to the Prophet of Khorassan.

It is a satisfaction to find from the Lettsomian Lectures delivered before the Medical Society of London by Mr. de Méric, that M. Ricord, not many years ago, entertained the opinion, that difference of constitution was the cause of the appearance or non-appearance of secondary symptoms after a chancre; "that the seed was ever the same, but that the ground wherein it developed presented differences." He has since abandoned this theory in a great measure, because he was unable to fix upon the kind of constitution which favoured or rejected the secondary demonstrations; but as his later theories, beautifully simple, and only wanting the confirmation of truth, come to be catechized by

those who are largely engaged in the treatment of these diseases, it seems not at all improbable that the primary opinion may be preferred to the more recent, and it may turn out that syphilis behaves exactly like other diseases, by affecting different persons in a totally opposite manner.

This is the opinion which, after many years of long and anxious observation, in both hospital and private practice, I have been compelled to adopt; and I look upon this as the grand fundamental doctrine, upon which we should ground all our treatment of the disease. The individual, and not the virus, governs the character of the chancre, and at the same time determines the acceptance of, or the resistance to, constitutional symptoms. Upon no other hypothesis is it possible to explain the relapses which every honest surgeon must acknowledge do occur, after the most careful treatment by mercury, and by iodide of potassium, the two supposed specifics for syphilis in its different stages.

This opinion is not taken up lightly, and certainly not in a spirit of opposition to established theories, for no man can respect more highly than I do the labours of the French and the Irish surgeons especially, in the investigation of the pathology of this disease; but called upon as I have been at the Royal Free Hospital, during the last seventeen years, to observe and to treat many thousand cases of syphilis in all its varieties, I have lost no opportunity of comparing the different methods of treatment, both in my own practice and in that of my colleagues; and I find it impossible to resist the conclusion to which I have referred, or to base the treatment of this disease upon any system but that of adapting the remedy to the peculiarities which mark every individual affected. It will strengthen the position I am anxious to establish if, by a negative process of reasoning, it can be shown that the theories put forth by the French school, and largely

accepted in this country, are not supported by nature; and that as a consequence, the practice founded thereon is not followed by that ultimate cure of the disease which ought to be brought about.

In the first place, perhaps there is no axiom so strongly asserted by the dogmatists in this country as that an indurated "Hunterian" chancre must be followed by secondary symptoms, is, in fact, the first of a series of constitutional symptoms which will necessarily be developed, unless the patient undergoes a mercurial treatment, varying in its duration from six weeks to six months. To this statement I will reply by showing that the Hunterian indurated chancre may be treated without mercury, and that in many instances no constitutional effects will result. This may perhaps be the most favourable opportunity for demonstrating also that, when secondary symptoms do follow this chancre, they are less severe when mercury has not been administered, and do not recur time after time, as is certainly the case in those patients who are treated with mercury.

It is a most singular fact, that Ricord himself is the best witness to bring against his own followers, for we find in his Lectures the following remarkable statement:—"I must distinctly state that every one is not likely to contract this secondary affection; some people are refractory to it, whilst it may be said that no one is inaccessible to chancre. There are people who have had chancres repeatedly, and who never suffered from secondary symptoms, whilst there are others with whom a single chancre will suffice to give rise to them. From these facts, I think it may be inferred that, for the manifestation of constitutional syphilis, *certain peculiarities lying within the individual*, which have as yet escaped detection, are indispensable, and that syphilis is, in this respect, on a par with other contagious diseases." This is one of the many practical expositions

of Nature's own laws which are to be found in the works of this excellent surgeon, and they go far to correct the scholastic theories which have been accepted, without these corrections, by a large portion of the surgical world. Fortified by this statement, I will venture to oppose my own experience to that of the mercurialists, and say, that it is not true, that a person who has contracted a Hunterian chancre must necessarily have secondary symptoms, unless the constitution be placed under the influence of mercury. I know now, and have watched for years, several persons who have had unmistakeable Hunterian chancre, who have taken no mercury, and who have enjoyed a perfect immunity from any syphilitic constitutional symptom. Eight years ago, I saw a gentleman who had a hard chancre on the prepuce, the size of a horse-bean. He was a strong, healthy young man, living much in the open air, taking plenty of exercise, and of a cheerful, sanguine temperament. All the treatment employed was smearing the chancre with mercurial ointment every night for about a fortnight. The chancre healed quickly, but the induration remained for some months. Of course no effect upon the constitution was produced by this local application. Nevertheless, from that time to this no secondary symptom of any kind has made its appearance. As a "per contra," I may state that I have recently seen a lady who, some years ago, contracted syphilis from her husband. She has been under the care of three surgeons in this metropolis who have written upon this subject, by whose advice she has used mercury in various forms, internally and externally, assiduously and repeatedly for several months. She has also employed, under the most eminent advice, Iodine in its different compounds, and still the syphilis repeatedly crops out in the form of eruptions, and even exfoliation of the bones. If, imitating a voluminous writer upon this disease, I were to take

these individual instances as representative cases, what a satire upon art would they present, and with what boomerang-like recoil would they mangle, if they did not destroy, the theories of the same author, who, repudiating altogether the *vis medicatrix nature*, says "we no longer imagine Nature capable of throwing off the peccant humours, although some still treat syphilis as if this were possible;" and again, "I presume there are few in the present day who dare to treat indurated chancre with local treatment only."

It is, however, out of the sphere of my aim, which is to arrive at the best treatment for the great multitude who are the victims of this disease, to argue from outside cases, even though they be sufficiently frequent to make them beacons to warn, if they may not be compasses to guide. It is from a class of cases which hits neither of these extremes that I would derive the practical and useful lessons of experience, because it is a class so numerous that it should of necessity govern our general treatment. If a large number of cases of indurated chancre be treated upon the principle of elimination by the skin, by the kidneys, and by the liver, accompanied with the application of a stimulant to the chancre itself, it will be found that in not a few instances there will be no secondary constitutional symptoms at all. That this is a fact which may be relied upon, is happily not dependent upon my assertion or experience only, but is vouched for by M. Ricord himself in the following sentence, taken from the Lectures already referred to:—"When the lymphatic glands have escaped, notwithstanding the existence of indurated chancre, it may confidently be foretold that there will be no secondary symptoms." Now, this admission, taken in conjunction with another equally pregnant sentence, which I will take the liberty of quoting from the same authority, would seem to

give confirmation strong to all I would advance in this matter, were it not for that theory—I had almost said that hobby—of M. Ricord, respecting the specificity and the non-specificity of hard and soft chancres, which has been mistaken for a real horse by the Professor's followers in this country. It is quite evident from the opinion I am about to quote, that M. Ricord himself did in his heart adhere to his early opinion—viz., that the ground upon which the seed was sown disposed the ultimate results of the infection. He says:—"It may be said that the infection is of itself sufficient for the production of the secondary symptoms, but it cannot be denied that there are certain adjuvant causes, the study of which has hitherto been too much neglected. These causes are far from being all known, but among them we may reckon the hygienic condition of the patient, errors of diet, alcoholic excesses, climate, sudden changes of temperature, particular seasons, dissipation, unwholesome food, anxiety of mind, &c." There can be no doubt that it depends upon these "adjuvant causes," together with others derived from hereditary predisposition, whether the cure of an indurated chancre is possible without mercury, and without a sequence of constitutional symptoms. I have amongst my notes of cases very numerous instances of cures effected without mercurialization, and, as far as I could trace the patients, without any secondary manifestations. Of course it is impossible to be quite sure that no further symptom has appeared in some cases, and that the patient has not taken other advice, but in many instances I have been able to verify the fact of the continuance of the cure by the attention of the patients to my wishes, to show themselves again and again, until there was no doubt about the immunity. The time of this immunity is fixed by M. Ricord thus:—"There is not much fear, with reference to secondaries, when a whole year

has elapsed since the contagion without any sign of them, and that no mercurial treatment has been used." I believe it is in accordance with the opinion of other authors, as it is with my own experience, that secondary symptoms, if they are to follow the primary sore, do so within four months at the latest, unless they are kept back by mercurial treatment. In addition to the case I have already referred to, I would mention that of H. N., aged twenty-two, a healthy young man, of sanguineous temperament, who contracted a hard chancre on the prepuce, with a chain of indurated glands in both groins, in January of this year, 1861. Black-wash healed the ulcer, but left a hard lump with a dry scab on the surface. I ordered him a mixture of chlorate of potash and hydrochloric acid, and directed him to smear the hard lump with mercurial ointment night and morning. Thinking himself well after the second week, he discontinued his treatment; but from inattention, or possibly renewed irritation, at the end of the third week he returned with the ulcer reopened, the induration remaining as before. I ordered him to continue his chlorate of potash and acid medicine, and to apply a weak solution of sulphate of copper. A week afterwards, the chancre was healing kindly. On the following week it was quite healed, the hardness at the base of the sore was diminished, and the enlarged glands were getting less. Two weeks after that the induration was nearly gone, the glands had returned to their natural size, and there was no eruption on the skin, or any secondary symptom whatever. He returned to the hospital every week for six weeks after this—that is, fifteen weeks from the time of infection, and no secondary symptom of any kind had made its appearance. I select this case at random from a vast number, and do not point it out especially as a representative one, but it is sufficiently so to show that the non-mercurial treat-

ment may be adopted, at any rate, with impunity, if not with at least an equal amount of security, to the patient.

Another class of cases to which I would now refer is that of those in whom secondary or constitutional symptoms are developed, in consequence of having contracted an indurated chancre. It is taught by M. Ricord, Mr. Henry Lee, Mr. de Méric, Mr. Acton, and others, who follow the French school, as well as by most of the men of the Dublin school, that when an indurated chancre appears, the patient must be at once placed under the influence of mercury, in order that he may have the best chance of escaping secondary symptoms. Few, if any, of these surgeons will affirm that such treatment will certainly prevent the evolution of these symptoms; nevertheless, all are ready to adopt a plan which, it is acknowledged, impoverishes the blood; which must be continued for six months in order to be effectual, and which even then may not prevent, in fact, may probably aggravate, the disease it is given to destroy. The principle upon which this mineral is administered is not clearly defined by any of these writers. It must be either as a specific agent, which is supposed to destroy the toxæmic influence of the syphilitic virus in the various tissues of the body, or as an eliminative power by whose means that virus is expelled from the whole system. But we do not find that either of these principles is positively asserted. There is certainly a strong leaning in all these authors towards a belief in the antidotal power of mercury, rather than in the more philosophical eliminative theory, which has the support of no less an authority than Dr. Cullen. In his remarkable work on the *Materia Medica*, this distinguished physician observes that "the chief reason for supposing that mercury cured by being an antidote, was, that no other good explanation was given how it otherwise cured the disease.

But it is incumbent on us to obviate a conclusion we do not admit of; and therefore, that we should attempt a difficult problem, which is, to explain here in what manner mercury does cure the venereal disease. We are well persuaded that it does it by increasing the excretions by which the poison is thrown out of the body. In support of this opinion, we observe, that we have not known any instance of the disease being cured without an excretion taking place. It seems commonly to be especially by the mouth; but we always observe that this excretion is attended with some degree of inflammation of the mouth; and commonly it is so much as to affect the whole system, so as to induce in it a phlogistic diathesis. This mark of mercury's stimulating the whole system, with what was said above of its affecting the whole excretories, will sufficiently show that in its ordinary operation, by its promoting all the excretions, it may thereby evacuate every poison that shall happen to be present in the mass of blood, and may thereby cure the venereal disease. We have said that its chief and most evident operation seems to be in the mouth; but I hold this to be necessary only to show that mercury, in an active state, has been introduced into the body; and it does not necessarily imply that the venereal poison passes out of the body more readily by the excretories of the saliva than by any other course, for when a salivation is excited, there is at the same time marks of the other excretions being excited; and practitioners now know very well, that by a long continuance of the other excretions the disease may be cured without salivation; and if there are instances of salivation being more effectual than any other measure, it may imply no more than that, in certain cases, a larger quantity of evacuation is necessary than in certain others." This opinion, emanating from so matured and cultivated a mind, carries with it the suffrages

of our reason; whilst practical experience of the effects of mercury in this and other diseases, gives substantial support to the explanation Dr. Cullen has afforded of the method of action of this drug in the cure of syphilis. If the advocates of the antidotal theory could show that mercury would certainly by some inexplicable power neutralize and overcome the venereal virus in the system, then would my reason bend to an accomplished fact, and I would accept as a boon, without further question, the valuable specific. But when experience shows that mercury does not prevent the evolution of secondary symptoms, when we see daily that in spite of, if not in consequence of its administration, these symptoms are prolonged and aggravated, that the general stamina of the patient is undermined by its influence, that not only do the skin and soft parts generally continue to be affected, but that the bones themselves die and exfoliate in those who have taken this vaunted specific, then it does seem to me time to look about us for better theories, and better practice; and I am much mistaken if these will not be found in the process of elimination, not by mercury only, and certainly not by it in the manner in which it is recommended by M. Ricord and his followers, but by other means, which excite the secretions without diminishing the vital powers, and by giving such support to those powers, that they shall themselves be enabled to throw off by increased excretions, the animal poison, which is destroying their natural healthful reproductive influence.

It is acknowledged by Mr. Henry Lee that mercury carried to salivation, and then left off, does not prevent secondary symptoms, but, in fact, aggravates them. Mercury, in order to be effectual, he says, should be employed for eight weeks; but I do not find in any part of his recent article in *Holmes's System of Surgery*, that he promises an immunity from constitutional

symptoms by this perseverance; and further, I remark, that he places but slight confidence in iodide of potassium, declaring that it relieves only, and does not cure the secondary manifestation. "The length of time for which the mercurial treatment is to be continued," says M. Ricord, "is about six months; perseverance in the remedy for this period has seemed to me to retard the manifestations the most effectually. So, then, I would advise you to persist for about half a year; but I am sorry I cannot promise you that this will certainly and truly prevent the tertiary, or other forms of secondary symptoms from appearing. *I am every day more convinced of this melancholy fact.*" Although by education a mercurialist, and also a supporter of this plan of treatment in his published writings, I think I am breaking no confidence in saying that I have heard my friend, Mr. de Méric, bemoan the insufficiency of mercury in syphilis, remarking how frequently both in public and in private practice, notwithstanding the most careful perseverance in mercurial treatment, patients would return with secondary symptoms.

How is it possible with such evidence as this from the friends and supporters of the antidotal practice, to maintain any confidence in a treatment which is entirely empirical, which is certainly opposed to reason, and which has not the merit of being successful.

The influence of custom has been so strong in governing the practice of M. Ricord especially, and by his example that of numerous others, that the apophthegm of Lord Bacon, "*Cogitamus secundum naturam; loquimur secundum præcepta; sed agimus secundum consuetudinem,*" seems fairly applicable to the men of this school.

The arguments used in favour of mercury are, that it sometimes succeeds in preventing the constitutional affection, and

that if it fails in so doing, no harm is done, since mercury is given in other diseases without producing injurious consequences. It has already been demonstrated that secondary symptoms do not necessarily follow an indurated chancre. The constitution may resist the virus, as it will resist at times the poison of a dissection wound; and this it may do, perhaps, even under the debilitating effects of a mercurial course. Those who have seen caries of the bones of the face, exfoliation of portions of the skull, the body covered with rupial sores and crusts, and destruction of the palate and fauces, as I have, subsequent to the mercurial treatment of syphilis; will be slow to admit the second proposition, that no harm is done. In no one case of bone disease in a syphilitic patient, and I have seen a great many, did I ever find that mercury had been omitted in the early treatment. It was only a month ago I had occasion to remove a large portion of the upper jaw, which had become necrosed, in a patient who had twice been salivated. M. Ricord himself admits that mercury has an impoverishing influence on the blood, and mentions apoplexy even as one of its effects. The patient he refers to sank under the symptoms, and by the chemical analysis of the substance of the brain, metallic mercury was discovered.

But what is the history of the use of mercury in syphilis in modern times, *i. e.*, since the pathology and diagnosis of the disease were put upon a tolerably clear footing by Hunter and Abernethy, and Colles and Pearson? Was it not an essential part of the treatment in the estimation of these celebrated surgeons, that salivation was necessary to show that the mercury was acting on the system, and that as long as it was considered requisite to continue the mercury, so long should the salivation be kept up?

And now what does M. Ricord say upon the same subject?—

“The curative action of mercury is generally suspended from the moment the morbid symptoms, which properly belong to this mineral, begin to show themselves.” Can we believe it possible that any serious alteration has taken place in the human economy, between the times of Hunter and Ricord; or that there is so much difference between the climate and habits of the people of France and England as to make what is true in one country, false in the other? That this is not the impression, may be shown by the abandonment of salivation in this (Hunter's) country; and the adoption of Ricord's recommendations by that section of English surgeons who follow the French professor. The failure of one mode of administration has been followed by the trial of a different method, and the want of success which attends the later system will lead, it is to be hoped, to the abandonment of mercurial treatment entirely, and the adoption of the natural method of cure by elimination. We have already seen with what lukewarm satisfaction even this milder form of mercurial treatment is propounded by its author; and well may it be so, for even this very day have I witnessed a signal instance of its worthlessness. A young man of sanguineous temperament, and always in excellent health until affected, contracted three months since a chancre, with glandular enlargements in both groins. He placed himself under a surgeon who gave him mercurial pills twice a day for the whole of the three months. He was never positively salivated. Twice during this treatment did iritis make its appearance. The chancre healed and the glands were reduced to their normal condition, but twelve days since the penis and scrotum became covered with a scaly eruption, accompanied with much itching. A papular eruption is beginning to show itself on his forehead; and his general health is much disturbed. He is no longer the strong man he used to be.

The occurrence of this case on the day that I am writing has induced me to mention it, but I have amongst my notes a host of similar cases, of which this may be taken as an example.

In this short review of the modern history of the use of mercury in syphilis may be recognised the results of Art as applied to the cure of this disease, by men eminent in their profession, but, as it may be humbly suggested, too much given to follow reason in a vicious circle, and not sufficiently bold to enable them to shut the book of Art altogether for a time, to be re-opened only after Nature herself has been again well studied and proved.

Accidental circumstances led me to the observation, some years ago, that an indurated chancre was not necessarily followed by constitutional syphilis. I have already quoted instances. I thought that these cases, taken together with the unfavourable results obtained from mercurial treatment, would be ample justification for "daring" to abstain from mercury entirely. By this proceeding I observed, that although some persons were exempt from any constitutional affection, others had cutaneous eruptions, sore throat, and falling of the hair, but in a remarkably modified form. I remarked also, that this process having been gone through, and no mercury having been administered, the patient recovered, and no relapse occurred, except in those whose habit of spirit-drinking prevented the restoration of the tissues to their normal condition. A long-continued observation of the results, produced in Nature's own workshop, could not fail to convince any one, whose mind was not biassed by a foregone conclusion, that the cutaneous eruption was the natural means of relieving the blood of the venereal virus with which it had been inoculated, and that by suppressing this purifying process, the virus was retained in the system, to spend

its venom upon deeper seated and more important tissues. Here we see the great fundamental error of the mercurial treatment, which not only checks the natural cure of the disease, by cutaneous elimination, but adds to the tissues already poisoned, a metal, whose influence tends most unquestionably to increase the dyscrasia already existing. As long as this counter-poison is in use, the cutaneous eruption is kept in abeyance, but as soon as its influence is removed, Nature asserts her own supremacy, and the disease is thrown upon the surface, unless indeed the depressing influence of the mercury has been so great that poor Nature is cowed, and she has not any longer the power of carrying out her own good intentions.

The old term "Pocks," which has become so vulgarized by an alteration of the spelling, that it is never mentioned to ears polite, sufficiently indicates the natural course of the disease, as it was observed nearly four hundred years ago, when it was considered to be, as cholera and diphtheria have even recently been considered, a new disease. The system having become impregnated with an animal poison, derived from another person similarly affected, as in the case of variola and vaccinia, an eruption, either pustular or vesicular, made its appearance on the surface of the body, and provided due care was taken to promote the free action of the cutaneous surface, it gradually subsided, leaving the system relieved of the poison with which it had been impregnated.

I have already shown that the earliest observers and writers upon this disease noted this natural resolution of the malady, and acting upon their observations, did everything to promote the secretion from the skin, by medicines, by violent exercises, and by warm bathing. Recently we have had the testimony of the great African traveller, Dr. Livingstone, whose early medical

studies have qualified him to speak *ex cathedra* upon such a subject: that syphilis, amongst the natives of the interior of Africa, is of the mildest and most transitory nature; but that when these people go into the large European settlements, and dissipate by spirituous drink and other debauchery the native healthiness of their constitutions, then the secondary symptoms are of a most virulent character. The same observation was made also by Captain Cook, whilst visiting, in his Voyage of Discovery, the native tribes of the Sandwich Islands. These experiences, added to the carefully conducted experiments of the army surgeons in this country, in Portugal, and in France, already referred to; and those of Dr. Fricke, in Germany, assist us much in our inquiry, and enable us to put that confidence in the conservative and reparative powers of Nature, which is denied to her by Mr. Acton, and, inferentially, by all those who consider that mercury is necessary as a specific agent, for the destruction of the venereal virus.

Assuming, then, that Nature has a power within herself of throwing off "peccant humours," but that civilization inculcates habits, and enforces duties, which militate against the exercise of those powers, in force sufficient to overcome the toxæmic influence of the syphilitic virus; our evident duty is to pioneer the path for her, by checking injurious habits, whether they apply to the external, or the internal, parts of the body; and so to support the living organism, that Nature, or, in other words, the inherent powers of the constitution, shall be enabled to carry on the work of restoration, unimpeded by the stops, which have grown like moss around the old world we live in.

If the principle I am contending for be admitted, and frankly adopted, every experienced surgeon will know how to set about the pioneering work I suggest. There are various modes of

arriving at the same result, and if, as we know, each person differs as much in his bodily idiosyncrasies, as he does in his mental calibre—*tot homines quot sententia*—of course no one plan will be effective in all. My own experience—and I must have seen several thousand cases of hard chance and its consequences—inclines me very strongly to the use of chlorate of potash and hydrochloric acid, as the principal means of assisting Nature to eliminate the poison from the system. That it has this action I am fully convinced, but the *modus operandi* is not quite so easy of explanation as one could desire. Mr. Bastick, an excellent practical chemist, who studied under Liebig, has examined for me specimens of the urine of patients who were taking this combination, and he tells me that he found chlorates in abundance. From this it would be assumed that the chloric acid does not break up during the assimilation, and yield its large equivalent of oxygen to the tissues. But when we remember that there are chlorates in the natural constituents of all urine, and that we are daily taking common salt—the chloride of sodium—in large quantities as an article of diet, it will be seen that it is almost an impossibility to solve the question by any chemical analysis. In children, the action of chlorate of potash, in combination with hydrochloric acid, is perfectly marvellous; proving that it is utterly impossible that it can pass through the body without undergoing change. In syphilis, no less than in many other diseases, its influence for good is so marked, that I am resolved to believe, until it can be proved to the contrary, that it carries a large quantity of oxygen, as well as chlorine, into the blood, and that these gases combining with the constituents of that fluid, depurate it; and so we get, as it were, at the back of the disease, and push it out of the body by gradually substituting a healthy for a vitiated vital fluid. If

the habits of the patient be good, and in accordance with the instructions of the surgeon, a syphilitic patient will always improve under this treatment. His general aspect will brighten, his appetite will return, the eruption on his skin will subside, the chancre will heal readily with the assistance of a little black-wash, or a mild solution of the sulphate of copper, the induration will diminish, and the glands in the groin will return to their natural size. Besides acting chemically on the blood, it is well known that chlorate of potash increases the secretion from the kidneys, and by this means also the system is aided to throw off the peccant humours. The skin, being Nature's own chosen emunctory, is assisted by these friends and fellow-labourers, in expelling the vicious intruder.

In some sluggish bilious temperaments it may be desirable to call the liver into increased action also, and for this purpose only, not as a specific, and certainly not with the object of salivating, benefit is obtained by the administration of a few grains of blue pill, or a grain of calomel in the form of Plummer's pill, at bed-time for three or four nights.

Much confidence has been placed in the curative effects of iodide of potassium in secondary symptoms, but I must confess that I have seen so many instances of its failure, and some of its injurious influence, that I have lost much of my regard for it, except in cases accompanied with severe periosteal pains, and especially if mercury has been previously employed. There is no question about the value of this drug in relieving these pains, but as soon as they are relieved, my experience teaches me that the iodide of potassium has done its work, and that it may be at once usefully supplanted by the chlorate of potash and acid. The dose I usually order of this medicine is fifteen grains of the salt and twenty minims of the dilute acid in an ounce of water, with

some syrup of orange-peel; or if a tonic be necessary, some vegetable infusion, such as gentian or calumba, may take the place of the water. If iron seem to be called for, owing to the presence of any anæmic symptoms, the muriated tincture goes admirably with the chlorate of potash.

It is not of any great importance what application is used to the chancre, provided it be kept scrupulously clean. The mild copper lotion generally heals it very rapidly, the black-wash less quickly, perhaps, but this is a very soothing application. If there be much inflammatory action, a lotion composed of oxide of zinc and water, or of liquor plumbi and water, one part to twenty, will be found the most comforting and healing. After the ulcer has healed, a little gentle friction with the blue ointment assists to disperse the remaining induration, and the enlarged glands in the groin may also be usefully stimulated in the same manner. The patient should be instructed to use only a very small quantity of this ointment in these frictions, lest the constitution should become affected; and if it has no effect after a week's use, I order it to be discontinued. This employment of mercurial ointment is frequently unnecessary, as the induration subsides concomitantly with the abatement of the other symptoms.

Falling of the hair, which sometimes attends the constitutional affection, may always be remedied by the use of the unguentum hydrargyri ammonio-chloridi, as a pomatum. Ulcers in the throat, on the tongue, and inside the cheeks, are best treated with a gargle exactly similar to the chlorate of potash mixture, with an occasional application of the solid sulphate of copper. When the cutaneous eruption lingers, as it sometimes will, about the wrists and palms of the hand and other parts, I have found that the unguentum hydrargyri nitrico-oxidi used every night scarcely ever fails to remove this source of annoyance.

There is no question about the value of these external applications of mercury as adjuvants to the appropriate constitutional treatment. The use of the mercurial vapour-bath, if adopted with that limited view, is very serviceable, but if it be employed to produce a specific effect upon the constitution, it will prove, as it has done in times past, a mischievous, if not a dangerous revival. I have seen several persons recently who have been submitted to this method of treatment, and I am sorry to say that the relief obtained has been most transitory, owing, I fear, to a too sanguine dependence upon this application exclusively.

The hot-air bath, now called the Turkish bath, has been used in all times with great advantage; and there is no doubt that the profuse perspiration obtained by this means assists in eliminating the syphilitic poison very considerably. I have recently directed several patients to take one of these baths twice a week, and have thought it facilitated the cure. It must, however, be borne in mind that this measure is a violent one, and should not be employed by persons who are naturally weakly, or who have any tendency to heart or lung disease. It is most especially useful in those who have lived luxuriously, or who have a natural tendency to congestion of the liver.

I would here say, also, that whatever the treatment which may be adopted for the elimination of the syphilitic poison, it is necessary to commence with a free evacuation of the bowels, which should be repeated if requisite until the tongue is quite clean.

A generous diet is called for in all cases, to supply healthy nutriment to the system, which has already been wasted by the disease, as well as to replace the excessive evacuations by skin, kidneys, and bowels, which have been called forth by the necessary treatment. The simpler and more nutritious the diet can

be, the better will it assimilate, without calling for great exertions on the part of the digestive organs. Milk and eggs, plain joints of mutton or beef, salmon and oysters, with well-cooked vegetables and bread, should form the staple food. A little generous wine, or good unadulterated beer, may generally be allowed; but smoking should be prohibited, since there is no doubt that it contributes to relax the muscular fibres, by diminishing the nerve power which rules them.

Warm clothing, warm rooms, and a genial temperature, are very necessary to the comfort, and also to the cure of these patients. East winds are especially provocative of periosteal pains, and aggravate generally all the symptoms. In our severe spring and autumn months, more than in the winter, it is very desirable for syphilitic patients to get away to the south and west of England, or to some of the warm Continental resorts.

CHAPTER IV.

WE have hitherto been considering that form of venereal ulcer which alone, according to many surgeons, gives rise to constitutional symptoms; and we have now to devote a short space to the pathology and treatment of another venereal ulcer, which, in the words of a Ricordian pupil, "is always a local affection, and does not affect the system, and no specific treatment is required."

The soft chancre, in its most characteristic form, is round, with the edges slightly elevated, secreting pus rather abundantly. It is seldom solitary, and frequently so multiple that a chain of them may be observed around the cervix penis, beneath the corona glandis. When this ulcer attacks other parts of the penis—and generally as seen in the female—it does not observe this regular form, but it always secretes purulent matter freely, which is, in fact, its chief distinguishing point from the hard chancre. There is, of course, no induration at its base, although the classic grain of salt must be thrown into this statement, as many ulcers of this character do obtain a certain amount of hardness. Indeed, so frequently is this the case, that writers upon this subject have to explain that there is an induration, the result of common inflammation, which has obtained the name of "bastard chancre." This subject has been already referred to. The soft chancre occasionally gives rise to active inflammation of

the inguinal glands, terminating in suppuration. It is said that this is a diagnostic mark, distinguishing the soft from the hard chancre; but my experience does not lead me to think that it can generally be relied upon, and I believe I am supported in this view by Mr. Holmes Coote. I have watched this matter narrowly for some time, and find that bubo attends the hard chancre only a trifle less frequently than it does the soft chancre, and that the constitutional symptoms may be present at the time that the bubo is discharging. It is by no means easy for a surgeon who is not largely engaged in the treatment of this disease, to recognise the distinctions made between the different forms of induration which accompany venereal ulcers. About twelve months since, a young gentleman came under my care, who had been treated for some time by a surgeon of large practice, and very good repute, for hard chancre; that is to say, he had been administering blue pill for several weeks. The effect produced was most alarming: the poor fellow was so reduced that his mind was quite thrown off its balance. He declared himself dying, and had even promptings to self-destruction; yet he objected to give up the mercury, because he understood that, if he did, he would be sure to have secondary symptoms. The ulcer itself was on the prepuce, and had a hard, but not a Hunterian hard base, and it was extending. I persuaded him to give up the blue pill, ordered him a tonic and a bottle of port wine daily, with a sulphate of copper lotion to the sore. In one fortnight he was well, and no secondary symptom has yet appeared. I quote this case especially, because the surgeon under whose care the patient took the blue pill, is intellectually above the average run of men, and has had considerable opportunities of studying the varying aspects of disease. He believed that he had before him a chancre, that would infect the system,

unless the virus was destroyed by mercury; and the belief in the power of mercury was so strong, that he was blinded to the dyscrasia he was producing in the system. Are not these very probable mistakes, a further argument for the abolition altogether, of the unsatisfactory treatment by mercury?

The soft chancre is defined as a non-infecting sore; and if it were so, this part of my subject might be closed with the direction to apply a sulphate of copper lotion three or four times a day, and the patient would be well in a fortnight. It unfortunately happens, however, that this very pretty and classical distinction between the hard and soft chancre will not "hold water." Carnichael, and Wallace, and Rose, and Hennen, and Samuel Cooper, years ago proclaimed this fact—that secondary symptoms would occasionally appear after the healing of a soft chancre. Mr. Langston Parker is of the same opinion; and I would venture to add my experience to the same effect. I have now under my care a gentleman, himself a surgeon, who is confident that he never had an indurated chancre, although he has had a soft one; and yet he has syphilitic psoriasis of a most marked character. I have seen, over and over again, a soft chancre followed by a papular eruption, with falling of the hair, and sore throat, but certainly never by affections of the deeper-seated parts. It may be that this latter circumstance is due to abstinence from mercurial treatment. As a strong man will resist the toxic effects of a hard chancre, so a man of weakly constitution, especially if he has inherited a strumous diathesis, or has acquired a tendency to disease by any irregular habits, will be constitutionally affected by the imbibition of the secretion resulting from a soft chancre.

It becomes necessary then to keep this possibility in view, and so to build up by generous diet, and appropriate tonic treatment

all these cases, that the occasional decadence into a constitutional dyscrasia shall not be permitted to happen. I have already referred to the sulphate of copper, as being an appropriate stimulant to the ulcer, but in very irritable persons the black-wash is less stimulating, and in the event of there being much inflammation around the sore, a lead lotion is still more soothing.

The suppurating bubo, which at times accompanies the soft chancre, is troublesome enough, although not so sluggish in its progress, as is the bubo which attends a hard chancre. The inflammation is generally very acute, and it runs its course so quickly, that time is saved by at once promoting suppuration, instead of adopting any of the many very abortive means suggested for staying its progress. If matter be induced to form quickly by warmth and poultices, the abscess may be evacuated, and it will soon heal; but if blisters, iodine, discutient lotions, &c., be employed; in the greater number of instances, they will have proved useless for the purpose for which they were prescribed, and the promotion of suppuration will have to be carried out at last. It is impossible to shut one's eyes to the fact, that a suppuration of this kind must tend to eliminate from the system any *materies morbi* that may have been implanted therein.

The *phagedenic chancre*, although not always, is frequently followed by secondary symptoms; but I think there are very few, if any, surgeons in the present day who would put such a patient under a prolonged course of mercury. This was not the case fifty years ago; for we find Pearson advocating a mercurial course in such cases, and repeating it until the poor patients were nearly moribund. Supporting treatment, with opium to allay irritability, is generally called for, and the local application most appropriate is a lotion composed of the per-

manganate of potash, two grains to the ounce, with a dash of spirit, and some laudanum. When the sloughing is progressive, the strong nitric acid must be applied freely to the part.

There are many other matters of detail, which are properly described in the systematic treatises, to be found in every library.

There is, however, one other matter, which yet divides in opinion many of the most learned in this branch of surgery; and that is, the possibility or otherwise of communicating secondary syphilis. It is a practical point of considerable importance to families, and should be, if possible, decided.

Hunter, as we all know, considered the inoculation of secondary syphilis impossible, and Ricord, until very recently, entertained the same view. It is said that he is willing now, in some degree, to modify that opinion. Colles, and Wallace, of Dublin; Hey, of Leeds; Waller, of Prague, and Mr. Henry Lee, have given proofs of the possibility of this communication. I have myself had under my care well-marked cases, confirming the views of these gentlemen, one of which was published in the *Lancet* last year. A fine boy, seven years of age, came under my care at the Royal Free Hospital, covered with an eruption, which could not be mistaken for anything but psoriasis syphilitica. He had also enlargement of the occipital glands, the throat was inflamed, and he had recently, from being a very healthy boy, become cachectic. His mother, who brought him, was herself affected with the same eruption. She had also ulcers on the inside of her lips and cheeks, and had suffered much from rheumatism. Her husband had given her primary syphilis one year before. After being "cured" of this, secondary symptoms appeared, and she was treated, and got well. She remained well, until about six weeks before applying at the Hospital, and had since that time been

affected as stated. The boy slept with her, and she was of course accustomed to kiss him occasionally. One month after the reappearance of the disease in the mother, the son became affected in the manner already described. A servant-girl, with syphilitic sore-throat, scaly eruption, falling of the hair, and condylomata, took a boy of twelve years of age, in her master's house, to bed to her. He was subsequently covered with a similar scaly eruption, and at the same time had a ragged, unhealthy ulcer on the penis. These cases are strong corroborations of the opinion, that under certain circumstances secondary manifestations may be conveyed from one person to another.

A further fact in illustration of the communicability of secondary syphilis comes before us in a manner which renders a doubt upon the matter impossible; and that is, that the foetus, diseased from its first vivification, although the father shall have no primary symptoms at the time of coition, may communicate constitutional syphilis to the previously healthy mother, in whose womb it has been created.

A strange illustration of the inherent power which belongs to the human body of throwing off this disease, has lately been given to the world by some curious enthusiasts in France and in Norway, whose wrong conclusions from right premises, evidence almost as great a divergence from the usual reasoning of mankind, as does that of the man who, reasoning rightly from wrong premises, is, by the consent of all men, shut up and taken care of by the State. Taking its rise in France, it is from Norway especially, that we are favoured with statistics intended to show, that by the inoculation of the syphilitic virus upon a person who has secondary syphilis, and who has not taken mercury, he will be cured. M. Boeck, of Christiania, refers to his experience in

300 cases, and says that, by following out this proceeding, 290 out of the 300 were cured. The wildest homœopath, fresh from the cobweb mysteries of German transcendentalism, would scarcely venture to accept this illustration of his favourite dogma as a *propter hoc* upon which a system of treatment may be founded. The true explanation of the happy results obtained in these cases is, the abstinence from mercurial treatment, the dependence upon the eliminative powers of Nature herself to expel the poison, in spite even of the attempted re-introduction of the virus.

Whilst placing full confidence in the reparative powers of Nature to cure syphilis, when circumstances favour the free exercise of this inherent quality, I am fully aware that there are many causes which tend to obstruct this function. Not one, but many circumstances combine, to give those special peculiarities to the venereal ulcer, which have led men to classify them as distinct diseases. It is quite certain that this division will not stand. There is no doubt that these ulcers are intercurrent, showing that the peculiarities of the individual upon whom the virus is implanted will determine the character of the ulcer which follows the infection. The same female has been known to communicate a hard chancre to one man, and a soft chancre to another. One man has a disposition to plastic inflammation, another to suppurative inflammation; and these dispositions are founded upon constitutional differences, which may be either hereditary or acquired.

The hereditary causes which determine the extent and nature of the mischief produced by the venereal poison are partly those which are generally recognised as pathogenetic, such as scrofula, gout, syphilis, and cancer; but principally, and in a most marked degree, these effects may be traced to the peculiarity of

temperament which appertains to every individual. The hard chancres are almost always developed in persons of a sanguineous temperament, whilst the soft chancre is seen in the phlegmatic. The sanguineous man throws out fibrine to put a girle round, and encase the poisonous virus which his system is sensible of having been introduced upon its sanctuary; whilst the slower circulation of the phlegmatic man, irritated by the same poison, goes deliberately through the process of suppuration, by which means it not unfrequently succeeds in throwing off the whole of the virus.

Whilst these fundamental differences determine the character of the sore, and account, in some measure, for the more frequent appearance of constitutional symptoms after the hard chancre, by reason of the retention of the virus in the part, instead of its expulsion by ulceration, as in the soft chancre; there are secondary acquired causes which facilitate the introduction of the poison into the whole system. These are to be found acting largely in all towns of magnitude, deteriorating the vital energies, and inviting disease. The excessive indulgences of the table, smoking for hours in a confined atmosphere, excess in venery, competition in trade or in study, over-wrought faculties in any department, residence in a relaxing climate,—these, and many other circumstances which might be added, have a large influence amongst our population in preventing the free action of the power which is our birthright, of throwing off any poison we may have accidentally imbibed.

The result of these inquiries into the relative influence of Nature and Art in the cure of syphilis may be usefully epitomized thus :—

- 1st. That there is but one syphilitic virus.
- 2nd. That the constitution of the individual upon whom it is

implanted determines the character of the ulcer, and also the amount of constitutional disturbance likely to result.

3rd. That elimination of the poison by the skin is the natural method of cure.

4th. That mercury retards this natural cure, and substitutes a not innocuous means of relieving the symptoms for an uncertain period.

5th. That the method of cure pointed out by the natural history of the disease, being elimination, this process may be much facilitated by hygienic, dietetic, and therapeutic means.

6th. That secondary syphilis may be communicated from one person to another.

And lastly, That the supposed curative effects of syphilization are due to the inherent reparative powers of the constitution.

THE END.

ON THE
SUCCESSFUL TREATMENT
OF
GONORRHOEA AND GLEET
WITHOUT COPAIBA.

BY
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PREFACE TO THE FIRST EDITION.

THE substance of the following paper was read before the Harveian Society of London in January, 1860, and a short abstract appeared in most of the medical journals. This attracted the attention of many medical men, from whom I have received communications; some confirming the advantages of the treatment suggested, and others requesting information as to the stages of the disease at which the particular remedies advised are applicable. Feeling that the abstract referred to was but an imperfect exposure of the views and practice set forth in the paper, and being desirous of enlisting as large a number of the profession as possible in the attempt to abolish a disgusting and unnecessary medicine from the Pharmacopœia, I have been induced to print, in a separate form, the result of my experience in an immense number of cases seen at the Royal Free Hospital and in private practice.

I have thought it quite unnecessary to attempt an elaborate essay on the nature and symptoms of gonorrhœa—there are hundreds in the market. But in order that the treatment I employ and suggest to others may be properly apportioned, and its principle be duly recognised, I have divided the disease into stages, added a word or two about differential diagnosis, and shortly defined the causes of the most prominent symptoms.

T. W. C.

76, UPPER BERKELEY STREET, PORTMAN SQUARE,
December, 1860.

PREFACE TO THE SECOND EDITION.

It is satisfactory to me to find that my views are generally approved by that large part of the profession who do not allow jealousy or the "Circumlocution Office" to interfere with their investigation and appreciation of improved practice. The continued sale of this little work assures me that in time the abolition of the filthy drug will be complete; and I here ask for the continued assistance of the Press to promote this object, not only in this country, but in all.

T. W. C.

76, UPPER BERKELEY STREET, PORTMAN SQUARE,
March, 1862.

ON THE
SUCCESSFUL TREATMENT OF GONORRHOEA
AND
GLEET WITHOUT COPAIBA.

It is now some forty years since Sir Astley Cooper, in a lecture delivered at St. Thomas's Hospital, said: "If I have not yet learnt the best mode of treating gonorrhoea, after an experience of thirty-four years, I have no hope that I can know anything more on the subject."

The treatment so finally decreed by the greatest surgeon of his time, consisted of saline purgatives, rest, and lead lotions during the inflammatory stage; then balsam of copaiba, or copaiba and cubeb pepper, in conjunction with injections of sulphate of zinc, or acetate of lead, or a combination of the two. It will be acknowledged that the utmost respect has been paid to the teaching thus laid down by Sir Astley; and for thirty years at least men did not allow themselves to wander out of the tramway thus made for them. Finality decrees in medicine, however, share the fate of those in political, in artistic, and in social science; and the men who make them, were they in the flesh again, and in the meridian of their intellectual existence, would be the first to recognise the propriety of their revision. Did not Sir Astley himself overturn many fallacies of his predecessors? Even in relation to the particular disease under consideration, what student forgets the energetic periods and

fiery epithets lavished by the learned baronet upon the devoted heads of those who, following the dictum of the great Hunter, confounded gonorrhœa with syphilis, and endeavoured to cure it by salivation with mercury? Nauseous and objectionable as the remedy was, the strongly expressed opinion of Sir Astley Cooper determined the treatment of gonorrhœa by copaiba for some thirty years. Gradually, however, men's minds slipped out of the groove, routine went out of fashion, and independent thought produced independent action. It was found that there were many evils attendant upon the use of copaiba. It was not only nauseous, but it was found not to cure the disease in many instances. It was suspected of producing stricture, and it was known in some cases to induce a most objectionable eruption over the whole of the body. These objections, and the study of the progress of the disease when left entirely to the reparative powers of nature, led many to the conclusion that the use of this very offensive medicine was an unnecessary aggravation of a sufficiently disagreeable malady, and that the benefits to be obtained from it might be not only supplied, but surpassed, by means perfectly inoffensive both to taste and smell.

It has been my duty during the last seventeen years to see, at the Royal Free Hospital, an extraordinary amount of this disease. Perhaps I am within the mark when I say that six thousand cases of gonorrhœa have there come under my treatment. Such large opportunities have their attendant obligations, and feeling that it was due not only to the patients themselves, but to all who should be similarly affected, and to the science of medicine itself, I have put into practice all the justifiable means which from time to time have been suggested for the cure of this malady, in order that I might arrive at a well-grounded conclusion as to what treatment yielded the best results; what, in fact, was the safest, quickest, most efficacious, and least disagreeable mode of curing the disease. Having arrived at such conclusion to my own satisfaction, my next duty is to bring it before the

profession for its consideration, and I trust, after inquiry and trial, for its adoption. I should be falling into the error I condemn, if I were to say that the treatment I most affect is that which admits of no improvement. I trust that in all diseases we shall go on advancing our knowledge, and that we shall none of us be satisfied until the science of medicine is established upon a foundation in some measure resembling mathematical certainty. I will only say that my conclusions are based upon a very extended practical inquiry, carried on without bias of any kind.

Without intending to describe the well-known symptoms of an attack of gonorrhœa, it nevertheless becomes necessary, before proceeding to discuss its treatment, that we should perfectly understand the stages of the complaint, as well as the distinction between a true and a spurious gonorrhœa. The cause of chordee, the reason for the scalding of the urine, and the time when infection may or may not be apprehended, are questions so intimately connected with treatment that it will be necessary to say a few words respecting each of these subjects also.

GONORRHOEA

may, for the convenience of treatment, be arbitrarily defined to have three stages of progress.

That which I recognise as the *first stage* of gonorrhœa is ushered in with swelling of the lips of the urethra, an itching at the orifice, and some pain extending down the urethra. At first there is also a slight mucous discharge, which causes the lips of the urethra to adhere to the shirt, and then generally in two days a greenish-yellow discharge, which becomes in another two days yellow and thick. The desire to pass urine is very frequent, and its emission extremely painful. Now it is that painful erections, and sometimes that peculiar arching of the penis which is called chordee, distress the patient. In some instances

much swelling or œdema of the prepuce attends this stage of the disease.

After a period which varies according to the constitution, habits, and treatment of the patient, these inflammatory symptoms subside; and we have the *second stage*, in which there is a free purulent discharge, with no pain in passing the water, no swelling, and no painful erections.

The *third stage* is that which consists of a mucous discharge only, and which, if it be prolonged, obtains the name of gleet.

As complications, or occasional results of this disease, we have Orchitis, or inflammation of the testicle, gonorrhœal rheumatism and ophthalmia, urethral hæmorrhage, stricture, and inflammation of the bladder itself. Of these I propose to speak shortly, after I have exposed my views respecting the treatment of the original malady.

Besides describing the stages of gonorrhœa itself, it becomes necessary to understand symptoms which simulate this complaint, and for the treatment of which very different measures may be necessary. It is at times a matter of the most serious social import to be able to decide positively whether a discharge from the urethra in man, or from the vagina in woman, be the result of connexion with a person who is infected with gonorrhœa; or if it be the effect of legitimate intercourse under certain circumstances. It has very often occurred to me to have wives and husbands wrongfully accusing each other of communicating venereal gonorrhœa, because they were not aware of the occasional communicability of discharges to which the most chaste are liable.

I think it may be laid down as a rule that inflammation, with all its classical features—redness, heat, pain, and swelling—is necessary to establish a true venereal infection. In females especially, all these symptoms, together with a purulent discharge more or less green and offensive, are sure signs of gonorrhœal contagion; whilst the absence of these inflammatory indications

in a woman of good character would be conclusive, that any discharge she may have, arises from causes unconnected with infection.

When a man comes with a urethral discharge, and declares that he has had no intercourse with any person but his wife, we shall, in the majority of instances, find that there is a pale milky discharge, unaccompanied with redness and swelling, and rarely with any pain or inconvenience in passing urine. The patient is generally a pale, weakly person, and has, in all probability, had intercourse with his wife too soon after her confinement, when the uterus and vagina are discharging an acrid fluid, or during the process of menstruation, or when she is suffering from leucorrhœa or cancer. These cases are constantly coming before me, and I will venture in illustration to mention the latest that I have seen.

Edward D., aged twenty-six, an out-patient at the Royal Free Hospital, has a thin muco-purulent discharge from the urethra, with no swelling of the lips of the urethra, no chordee, and very slight pain in passing water. His wife was confined three months since of a dead child after a very severe labour. He began to have connexion six weeks after her confinement, and felt at the time much heat in the vagina. Four days after connexion he discovered a discharge, which has continued now for five weeks. I ordered him an injection of chloride of zinc and an alkaline mixture, and he was well in a week. This man had been accusing his wife of improper conduct, and causing both much unhappiness. By my assurance that the affection arose from natural and innocent causes they became reconciled, and the man's mind, much upset by the circumstance, was restored to comfort and confidence. The same symptoms occurring in females are so common to the sex, that nothing but the most decided exhibition of those characteristics of true gonorrhœa already described, should ever induce the surgeon to pronounce such a case as one resulting from venereal infection.

The cause of Chordee has been settled and unsettled many times in surgical works during the last fifty years. John Hunter's theory of an inflammatory exudation of lymph into the corpus spongiosum urethrae was accepted by Sir Astley Cooper, and has scarcely been modified by Ricord; but notwithstanding these great names, many men have thought that, after all, it was but a theory, that post-mortem examinations in these cases had been wanting to verify and sustain the theory, and there were many reasons why this explanation was inadmissible. An effusion of lymph capable of contracting the tissues of the penis so much as to bend it forcibly into an arch could not possibly be formed and be reabsorbed in one night, and yet we know that this peculiar condition is most erratic in its proceedings, that it comes on very suddenly, and disappears as quickly. In fact, it has all the characteristics of spasm. We are much indebted to Mr. Milton, who has of late worked out this subject most laboriously; and I am quite disposed to agree with him in opinion that antispasmodics are the most efficacious remedies for its relief. He gives camphor very largely with the best results, but I must confess that I have found the cubeb pepper a much more certain and innocent remedy. Both opium and camphor relieve the symptom, but they disturb somewhat the brain and the stomach, and to persons who go about their daily avocations it is most desirable not to interfere with these important centres. Moreover, these narcotics appear only to lessen the sensibility of the organ, and to have no effect in diminishing the cause of the spasm; whereas the cubeb pepper is most efficacious in relieving the spasm, and at the same time assists by its mild counter-irritant action in overcoming the gonorrhoea. Except for this symptom I by no means advocate the employment of cubebs in gonorrhoea, because not only is it a disagreeable medicine to take, but it not unfrequently produces nausea. When I am induced to order it for the relief of chordee, I invariably stop it as soon as this particular symptom is thoroughly overcome. It is not a

little remarkable that cubeb pepper, although first prominently brought into notice in this country by Sir Astley Cooper, who got it as a remedy for gonorrhoea from a naval patient of his, was nevertheless an article of commerce in London 555 years since. Edward the First, in 1305, granted to the Corporation of London a power of levying a toll of a farthing in the pound on this article in its passage over London Bridge.

Ardor urinae, scalding of the urine, is so prominent a symptom in this malady, that from it is derived the name of the disease in the French language, and there is no doubt that it is the most characteristic, as it is the most disagreeable, of all the symptoms. This painful passage of the urine can be due to two causes only. Either the urine itself is so acrid that it severely irritates the delicate mucous membrane over which it passes, or the mucous membrane lining the urethra is in an abnormally excited state. *A priori*, we might assume that a fluid which had passed down the ureters from the kidneys into the bladder without producing suffering, and had remained in that viscus for a certain period without exciting constitutional disturbance, did not contain any ingredients which would be prejudicial to any other mucous surface; and as the urine does not undergo any further change within the bladder itself, it follows, that in continuing its progress out of the body over the mucous membrane of the urethra, it would not produce pain if that urethral membrane were in a healthy condition. We know also, in corroboration of this unassailable argument, that the urine of a gonorrhoeal patient is in every particular the same as that of a healthy person.

The cause of scalding, then, not being in the urine itself, it must be sought for in the urethral membrane over which the urine passes, and here we find plenty of evidence of inflammatory action which fully accounts for the pain produced. The pain induced upon pressure of the organ, and the swelling which frequently accompanies gonorrhoea, as well as the heat and redness of the orifice of the urethra, sufficiently indicate an

inflamed mucous membrane; but we have post-mortem evidence of the presence of an inflammatory condition of the urethra in these cases which puts the cause of scalding beyond all doubt.

In the days of John Hunter, our fellow-creatures were judiciously sent into the other world for causes which now only call for a forced emigration; as a consequence the opportunities of post-mortem examination were numerous, and the practical acumen of Hunter took advantage of them upon all possible occasions. He especially showed that in many cases of recent gonorrhoea known to exist during life, there was a red injected condition of the vessels of the urethra which was confined to the terminal inch or inch and a half of the penis. Sir Astley Cooper and others have also had opportunities of examining similar cases, and in this as in all other really pathological inquiries, John Hunter's facts have been entirely verified. So here we have not the urine, but the urethra in fault; and for this inflamed membrane it is we have to provide a remedy.

The inflammation is confined usually to a small surface not exceeding an inch or an inch and a half in length, surrounding a tube the eighth of an inch in diameter.

If we had this on the surface of the body, warm water dressing or Goulard lotion would settle the matter in a very few days; but owing to the peculiarities of position, the curing of this inflamed mucous membrane requires a little more management.

For want of a little common sense, as well as a proper recognition of the simplicity of the case, the sufferers from this disease have been made to submit for a great number of years to a specific treatment offensive to the last degree, and infinitely less efficacious than the treatment founded upon natural, and therefore true surgical principles.

It is really wonderful that Sir A. Cooper, after his repudiation of the Hunterian theories respecting gonorrhoea, did not go farther, and reduce this disease and its treatment to the common level of all other inflammatory affections, and so abolish for ever

all the misleading and mystifying nonsense of specifics. Copaiba, however, had held its sway for some 200 years, and even the great Sir Astley was not proof against its consequently respectable claims.

Although many surgeons of the present day find that gonorrhoea may be readily cured without this nauseous drug, it is very certain that it retains the popularity given to it by the advocacy of this celebrated surgeon. For the more refined sufferer we see advertisements telling of bonbons and condiments, containing indeed the veritable balsam, but so deliciously concealed that the patient is altogether unconscious of the nastiness he is taking, although his friends may possibly discover it by his breath, or as an exhalation from the skin.

The million, however, and it will be seen that this arithmetical appellation is not misplaced, take the crude drug in all its naked deformity. It is given in hospitals in this form, and very largely by prescribing druggists, as well as by some medical men, and the quantity expended in this manner will perhaps astonish those who are unaware of the demand for this article of commerce. I find, by inquiry at the London Custom-house, that 118,396 lbs. of balsam of copaiba were admitted into the Port of London only, during the first ten months of the year 1859. It is quite possible that Liverpool, Bristol, and the other ports, receive each an equal amount. If, however, we take that received into London only, and administer it at the rate of a half-drachm three times a day, and suppose each patient to take it for three weeks, we have here copaiba enough to treat 473,584 persons, or close upon half a million affected individuals; and that, be it remembered, in ten months only of the year, in one city of the empire.

These commercial statistics reveal strange facts in connexion with our moral and social relations, and few will fail to be astonished at the number of persons who are called upon to consume this drug.

The particular surprise I have to express, however, is, that with all these immense opportunities of studying disease, and the effects of remedies, no improvement has gained ground with the multitude during the last forty years. This disgusting medicine has continued to be employed on the true "circumlocution" principle, notwithstanding its frequent failures, its rejection by the stomachs of many patients, its interference with the digestion of all, and the cutaneous eruption which not unfrequently follows its employment. Its irritating influence upon the urethra I have noted in very many instances; increasing the ardor urinae, super-inducing swelled testicle, and laying the foundation for stricture. Rheumatism and ophthalmia in connexion with an attack of gonorrhoea have also undoubtedly been induced in delicate persons by the administration of this offensive article of the *materia medica*.

Whilst there are so many objections to copaiba, of course it is impossible that it could have obtained and continued to hold its ground as a remedy unless it possessed curative virtues. I am quite willing to acknowledge that it effects a cure of gonorrhoea, that is to say, of the second stage of the disease, in persons who have stomachs strong enough to take it without much inconvenience. In these instances, however, I venture to affirm that this copaiba may always be dispensed with, and that a more efficient plan of treatment may be adopted, which is not incompatible with the moderate enjoyments of society, and is alike inoffensive to the senses of taste and smell.

It has been suggested, even in the most prominent of our medical societies, that modifications and improvements in the treatment of venereal diseases are impolitic and undesirable, that the more the patient suffers, the greater warning does he become to himself and others; but this standard of morality is generally repudiated. As philanthropists, no less than as men of science, we are unquestionably bound to seek for the greatest amount of relief in all kinds of disease at the least possible inconvenience

to the patient. It is quite within the bounds of rational speculation to conclude that we owe the extensive distribution of this disease amongst all classes of society in some measure to the offensive nature of the remedy so often prescribed, whereby many are induced to abandon all treatment, and trusting to unassisted nature only, continue the indulgence of their appetites regardless of all consequences to their partners and victims.

Both at the commencement and at the conclusion of the disease surgeons are frequently called upon to pronounce an opinion respecting the *probabilities of infection*. There is a chariness in books upon this part of the subject which has communicated itself to practitioners, and few fail to put such "ifs" and "buts" into their ultimatum, that the patient has generally to act on his own authority. My experience leads me to the conclusion that there need be no hesitation about the matter. I take the case of a man who has imprudently exposed himself to infection, and a day or two afterwards returns to his marital bed not suspecting that he may have contracted gonorrhoea. He finds in two days more that he is so infected, and he comes in great alarm to know if his wife will be ill in the same way. Upon inquiry I learn that there was no appearance of inflammation or discharge on his return home, and I pronounce that the wife will not be infected. The sequel proves the position that the gonorrhoeal secretion is a necessary agent in communicating the disease. Then, again, at the termination of the treatment, patients require to know the probabilities of infection. Very careful observation upon this point in a large number of cases has led me to the conclusion that gleet—*i.e.*, a mucous discharge from the urethra consequent upon gonorrhoea—does not set up gonorrhoea in another person; just as leucorrhoea in the female does not infect the male, except in those few instances already referred to, in which case the discharge is simply leucorrhoea in the male, an affection of the slightest import and curable in a couple of days. The microscope is useful in deciding this point, for whilst any

pus globules can be observed in the discharge there will remain a probability of infection.

The object of my paper being a suggestion of an improved method of treating gonorrhœa, I forbear extending these remarks into many other branches of the subject which invite observation, and will at once proceed to the discussion of

THE TREATMENT.

Ricord, Acton, and others have employed what is called the abortive method in the earliest stage of the disease. They were accustomed to prescribe a very strong injection of nitrate of silver, with the object of cutting short at once the gonorrhœal attack. The fearful symptoms, however, which occasionally resulted from this heroic proceeding, were so alarming, that I think I am correct in saying that such practice is condemned and abandoned by its originators; although those who were educated at the time of its employment, and who have not kept pace with the literature and further experience of the day, still recommend and practise this proceeding, as some of my patients can too surely testify. It needs not to say more in condemnation of such treatment than the observation that an attack of inflammation of the bladder endangering life is a not unfrequent sequence.

The other methods of treatment most in vogue are by diluents or diuretics, by aperients and warm baths, by copaiba, by cubebs, and by various injections. Of the treatment by diluents and diuretics I have only to say that it is rational, but slow and tiresome, not easily employed by the majority of patients, and therefore, except in the very few instances of those who have time and inclination and opportunity for dallying with the complaint, altogether objectionable.

Saline aperients are very commonly given in the inflammatory stage, but, according to my experience, injuriously. I have so

often observed that the ardor urinae, and especially the chordee, are increased by these means, that I have for a long time abandoned the practice. If given in conjunction with the warm bath, the irritation produced is not so great, but besides the difficulty of patients having frequent recourse to the warm bath, there is the unpleasant consideration that some unconscious creature may get gonorrhœal ophthalmia from the towels or water or bath employed.

In a disease which does not necessarily confine the patient to his bed, and which has more or less to be concealed, it behoves the surgeon to find a plan which is practicable to those engaged in active pursuits, and capable of employment by all.

The treatment by copaiba and cubebs I have already entered my protest against, and I would only here add that the offensive smell of copaiba remains in drawers and boxes for months after the substance has been removed. Patients' breath and clothes are redolent of it in whatever form it is taken; and the urine of a patient now under my care proclaims its presence loudly, although it is three weeks since he ceased taking the balsam in capsules. In this particular case the digestive apparatus was put into the most miserable condition by taking this nauseous drug, and a severe attack of rheumatism, lasting many months, had been the penalty paid for using it on a former occasion.

The use of injections in gonorrhœa requires the nicest discrimination and no small practical experience. The sensibility of the urethra in different persons is so various that the peculiarities of each individual patient require to be carefully observed before any kind of local application in the shape of injection is prescribed. There are surgeons who order injections of various kinds from the commencement of the discharge, treating it indeed altogether topically, and using no internal remedies. It is satisfactory to know that there are not many practitioners of this way of thinking. The injection of five grains of the sulphate of zinc in an ounce of water three times a day before the

inflammatory stage of the gonorrhœa has subsided is sometimes prescribed, and the consequence is that a few hard, unimpressionable individuals take no harm from the application, but the great majority are made to suffer most intensely, and many have inflicted upon them the aggravating complication of a swelled testicle. The acetate of lead and the sulphate of copper in moderate quantities are milder in their effects, but these are not favourites with the generality of practitioners. I have already referred to the injection of a strong solution of nitrate of silver, and I do not know that in its milder form it is any more worthy of commendation. It certainly is much less efficacious than the salt I am about to recommend, and moreover has the disadvantage of producing indelible stains on the linen.

The plan of treatment I have to propose for adoption has been arrived at from observation of the failures of and objections to all the other methods of treatment I have now referred to, and is based upon pathological reason as well as practical experience.

The matter is so simple that very few words are necessary to explain both the theory and the practice.

It has been already shown that there is inflammation of the mucous membrane of the terminal portion of the urethra in the first stage of gonorrhœa. It will also be accepted as a fact that the urine under these circumstances is healthy—that is, acid.

It needs no demonstration to prove the consequences of the passage of an acid fluid over an inflamed mucous membrane. Pain of no ordinary character is one result, and an aggravation of the inflammation, with its attendant increase of secretion, is another.

It may be said that there are two methods of conquering this state of things. Relieve the inflammation by antiphlogistic treatment, or render innocuous the acid fluid which keeps up the inflammation. The reply is, that the first plan is, as has already been shown, difficult and tedious; the second is easy and rapidly efficacious. By the administration of the alkaline carbonates,

the urine may be made perfectly neutral, and all pain from its passage over the inflamed urethra subsides. The cause of irritation being removed, the inflammation has its natural termination in suppuration, and then we have the second stage of the disease, which requires still further management.

The inflammation being subdued—as evidenced by the subsidence of the ardor urinae, and the chordee, if it has been present—the next requirement is to check and get rid of the purulent discharge. This may be done effectually and very rapidly by the injection of a solution of the Chloride of Zinc to astringe the relaxed mucous membrane, the allowance of a moderately generous diet to give tone to the system, and a continuance of the alkaline carbonates in combination with a mild tonic. These are the indications of treatment which I have carried out at the Royal Free Hospital and in private practice in a very large number of cases for some years; and I have daily opportunities of demonstrating the rapidity of cure by these means, as well as the superiority in point of comfort over all other plans previously employed.

There are some matters of detail which require a few words of explanation—respecting, for instance, the preference for one or other of the alkaline carbonates, the doses, the strength of the chloride of zinc injection, and above all, the constitutional peculiarities of the patient.

Most patients will take the sesquicarbonate of soda better than the bicarbonate of potash. It is more soothing to the inflamed mucous membrane, and the dose requisite to obtain its neutralizing influence over the acid of the urine sufficiently rapidly is thirty grains three times a day. When the patient is not strong, I prescribe five grains of the sesquicarbonate of ammonia with twenty or five-and-twenty of the sesquicarbonate of soda, and should the bowels require gently acting upon, I add a scruple of the carbonate of magnesia to either of the other prescriptions. It is very necessary in all cases that the bowels

should be free, but never purged, and when the magnesia is not sufficient for this purpose, I add a five-grain colocynth pill every night until any tendency to constipation is overcome.

The injection of chloride of zinc, if employed at the proper time and in proper strength, is the most valuable agent that has been brought into surgical use since the memorable introduction of chloroform. I believe that Mr. Lloyd, of St. Bartholomew's Hospital, was the first surgeon in this country who ordered chloride of zinc as an injection in gonorrhoea, and the sufferers from this disease have much cause to be grateful to him for the benefits it confers. The lowest strength I ever employ is half a grain to the ounce of water, and the highest three grains to the ounce. As a rule, I begin with one grain to the ounce as soon as the scalding has subsided, and finding that easily borne, I go on to two grains to the ounce, which need scarcely ever be exceeded. So extraordinary are the curative effects of this injection in the second stage of gonorrhoea in both sexes, that out of many hundred cases treated by me with this agent, I have had only two instances in which it failed to effect a complete cessation of the muco-purulent gonorrhoeal discharge. It gives scarcely any pain, and effects its purpose in a much shorter time than any other injection. In the majority of cases, a week's use of this injection will effectually cure the patient.

Here is surely a great leap in the treatment of disease. We have at once the abolition of a most nauseous drug, the advantage of a decided acceleration in the curative process, and a remarkable decrease of the risk of those complications—orchitis, papular eruptions, rheumatism, ophthalmia, and stricture—which not infrequently incapacitate the patient from all employment, and, in delicate constitutions, originate maladies that will last the lifetime of individuals so afflicted.

The man who presumes to fix rules for the treatment of any disease without allowing a wide margin for the constitutional peculiarities of its victims, must be quite unworthy of the position

he has assumed. In gonorrhoea it is especially necessary to take careful note of the general health of the patient, lest the remedial agents employed for the disease be contraindicated by the state of the body generally.

It is really remarkable how much young men differ in the requirements for this particular disease.

Some are strong and plethoric, and given to high feeding and much indulgence; and then, besides all the common symptoms of gonorrhoea, we have considerable oedema of the prepuce, with possibly that contraction of its orifice which is called, according to the position of the contraction, phymosis or paraphymosis. In the latter instance, perhaps, it may be necessary to make a slight incision with the scalpel at the point of stricture in order to prevent injury—possibly gangrene of the glans. But generally the oedema is of the prepuce in its normal position, and for its remedy we have only to employ assiduously a lotion composed thus:—

Liq. Plumbi $\mathfrak{z}\text{ss}$.

Aquæ Oss.

Misce.

The penis should be kept constantly swathed with this lotion, and it should be sustained in an erect position against the abdomen, by means of a handkerchief tied round the loins. I have known copaiba given in such cases, and have wished that the prescriber were his own patient, in order that he might experience some of the torture he has inflicted so unnecessarily. In addition to the above lotion, the treatment I have already advised is all that is necessary to subdue the inflammation and cure the subsequent discharge.

The first gonorrhoea is almost invariably an inflammatory one, but subsequent attacks, especially in persons not over strong, are of a sub-acute character, and in some constitutions the urine will not be found to be acid. In such modified cases the alkaline

treatment becomes unnecessary, the chloride of zinc injection may be commenced at once, and even tonic treatment may be employed with advantage. I have notes of many cases in which I found it desirable to give the muriated tincture of iron from the very commencement of the treatment. In strumous persons, in those who are weakened by stimulants, and where the patient has been affected several times, this drug, or other tonics, such as the aromatic sulphuric acid, or tincture of cinchona and acid, may be generally employed at once with the best results. In all these cases, however, the chloride of zinc injection answers admirably, in conjunction with the means appropriate to the individual constitution under treatment.

Diet is a matter of considerable trouble to many patients. It is quite certain that an unnecessary amount of abstinence has been imposed upon these sufferers. After the first week of the attack, it is seldom necessary to make any difference in the patient's diet. The inflammation having in a measure subsided, beer or wine may be taken in moderate quantities, without at all interfering with the progressive treatment of the case. When the inflammation has entirely gone, and the muco-purulent discharge only remains, good wine is really a most useful agent in the cure of the malady. The upsetting of the old Sangrado principle in this department of surgery is especially necessary, because many young men have reduced themselves to such a low state in the expectation of the more effectually ridding themselves of a disagreeable complaint, that numerous instances may be quoted of irrecoverable debility and even Phthisis being induced thereby.

GLEET.

The continuance of a mucous discharge for months and months after a gonorrhoea worries many a man into trying a variety of remedies for its relief, and not infrequently he abandons all as useless. I have records of cases now before me, in which the

balsam of copaiba has been taken twice and three times a day for six months, and that without having any effect upon the annoyance. What a wonderful thing is faith! Bougies smeared with the nauseous balsam have been introduced into the urethra, with the vain expectation of curing the obstinate complaint; and recently a writer in a medical journal suggested that a solution of the balsam be injected, because an ingenious Frenchman passed, by means of a syringe, his own urine, containing copaiba, over a part of the urethra which had been separated from the rest, and the discharge ceased. The case which gave rise to this suggestion was that of a French mechanic, who was in hospital for gonorrhoea under the care of M. Ricord. During the treatment, which consisted of copaiba, some heavy instrument fell upon the penis, wounding it very severely. An abscess followed, which opened the urethra an inch or so from the end of the penis, and as it got well, the gonorrhoeal discharge was found not to proceed from the opening thus made, but from the orifice of the urethra only. The ingenious mechanic, supposing that the copaiba he had taken internally had cured the gonorrhoea down to the hypospadias opening through which his urine passed, determined that the remaining portion of the urethra should be subjected to the same proceeding, and so injected the copaibaic urine through this part also. He got well, and very naturally believed that he had thus cured himself. M. Ricord and others have pointed triumphantly to this case as demonstrative of the beneficial effect of the balsam of copaiba. When, however, we consider that an abscess thus produced would, in all human probability, forestall altogether the gonorrhoeal affection, and when we remember that the part affected in gonorrhoea is the terminal inch or inch and a half of the urethra, and that therefore in this case the cure, so called, of the disease up to the opening in the urethra must be altogether imaginary, it requires no very excessive amount of belief in the curative powers of nature, assisted by the counter-irritating effect of the neighbouring abscess, to

suppose that the gonorrhœal discharge from the terminal portion of the canal subsided in obedience to those powers, and independently of the peculiar injection made use of.

Cases of gleet that have baffled all other treatment for many months, yield in a remarkably short time to the chloride of zinc injection, combined with a tonic suitable to the particular individual. From ten days to a fortnight's treatment seldom fails to entirely subdue an annoyance which has lasted for six or nine months. Until I used this injection, I had been much troubled by cases that would give way to no manner of treatment except a visit to the sea, and even this failed in some instances; whilst in the large majority it was an inconvenient, if not an impossible prescription.

I have not ventured to recite cases in illustration of any of the facts and opinions I have been expressing, because, if I did so, that which I intend to be a short paper would become a large and tiresome volume. It will readily be believed that the immense number of cases which come under my notice at the Royal Free Hospital must supply most ample food for practical investigation and observation. To this large field I would invite any practitioner or student who may be desirous of seeing for himself the effects of the treatment I have been advocating.

The occasional sequences of gonorrhœa are orchitis, rheumatism, ophthalmia, urethral hæmorrhage, stricture of the urethra, cystitis, and very rarely bubo. A few words respecting the treatment of these complications is all that I propose to add to the foregoing observations upon the parent disease, and this I do because I believe that the treatment of these unhappy offsprings may be much simplified, and the period of their existence be much abbreviated by a moderate observance of the true surgery which nature teaches.

ORCHITIS.

This, the most frequent of the results of gonorrhœa, has been and is the great dread of all who incur that disease. The pain of the affection itself, although very considerable, is as nothing compared to the wasted strength and anxiety of mind attendant upon the treatment which in most cases is considered necessary. Relays of leeches, fomentations and poultices, with calomel purges and tartar emetic, are the routine remedies for swelled testicle. Necessity having no laws, and my hospital patients having no bread unless they worked for it, I was obliged to contrive a plan in this particular case of distress which did not call upon them to forego their daily labour. Knowing that Sir B. Brodie and others had given sedatives in these cases, I very early in my career began giving large doses of henbane, ordering at the same time fomentations when the opportunity offered, that is to say, every night and morning, and entire rest to the testes during the day, by means of a suspensory bandage. Finding that the henbane produced sickness, and did not effectually relieve the pain, I changed it to morphine; and now I can always control and subdue inflammation of the testis by these three means: rest by suspension, fomentations night and morning, and morphine in full doses, combined with small doses of sulphate of magnesia to keep the bowels gently acted on. By this simple treatment patients are enabled to go about their necessary occupations, and the general health is by no means impaired, as it is by that furious antiphlogistic treatment, which I have seen carried to such an extent as to reduce a strong man to the condition of "a sick girl." The effect of strapping the testes, as used by some surgeons, is to produce in no few instances such an amount of inflammation that suppuration ensues within the tunica albuginea, and, as a consequence, protrusion of the seminal ducts, and loss of the use of the gland for life. This I have observed in several instances as clearly having the relations of cause and effect.

Gonorrhœal rheumatism is a less frequent complication, but, when it does occur, is attended with much suffering and inconvenience. I am of opinion that it only happens in those who are predisposed by constitutional defects to rheumatism, who have, in fact, the rheumatic diathesis. Patients having this peculiar inclination are inevitably plunged into a severe attack of rheumatism by taking the common remedy for gonorrhœa—balsam of copaiba. It should rather be called "balsamic rheumatism," for assuredly when following the chemical or alkaline treatment for gonorrhœa, rheumatism is an unknown complication in my practice. When patients present themselves suffering from rheumatism with gonorrhœa, I generally order small doses of colchicum with the alkalies previously mentioned. This, with the substitution of pale sherry for beer, and no other wine or spirit, will, without any abstinence from business occupations, be sufficient to overcome both the maladies.

Gonorrhœal ophthalmia is a rare disease, and is the result of the direct application of the gonorrhœal matter to the delicate conjunctiva. It occasionally happens in the very careless poor, but scarcely ever in cleanly people. When it does occur, the inflammation runs high, but should always be under the subjection of the surgeon if he sees the cases sufficiently early to prevent extension of the inflammation to the cornea and tunica sclerotica. There is sometimes much ecchymosis of the conjunctiva. Leeches are immediately necessary, with purging and warm or cold lead lotions, according to the peculiarities of the patient; for with some warm and with others cold applications are most beneficial. When the inflammation is somewhat subdued, a lotion composed of five grains of the nitrate of silver to the ounce of distilled water rapidly restores the conjunctiva to its normal condition.

Urethral hæmorrhage is not often a matter of importance in gonorrhœa. It will sometimes occur during an erection, and much blood may be lost, with the effect of reducing the inflammation and cutting short the disease. The bleeding soon ceases

upon the application of cold water. It does rarely occur, however (and two instances have recently come under my care), that hæmorrhage from the urethra is so considerable as to endanger life. The treatment in such a case is to pass a full-sized silver catheter into the bladder, and carefully bandage the penis upon it with a small finger bandage. I know a case in which the surgeon injected tincture of iron into the urethra to check the hæmorrhage, which it did effectually; but such a firm, immovable plug was produced by the coagulation of the blood, that no urine could pass, and it became necessary to make an incision into the urethra behind the obstruction.

Stricture of the urethra is the result very generally of gonorrhœal inflammation, the deposit of lymph solidifying and narrowing the passage; or the contraction may be due to the cicatrization of an ulcer. In either case it is absolutely necessary that treatment be adopted, for unless the contraction be overcome, it will assuredly increase, and life will become a misery. Gradual dilatation by means of metal bougies is the safest, easiest, and most efficient plan of conquering the difficulty. There are other methods of procedure; for instance, Mr. Thomas Wakley's plan of forcible dilatation by means of tubes of gradually increasing calibre passed over one another—a proceeding he finds very successful. Mr. Holt's somewhat similar plan, which has the effect of splitting the strictured portion of the urethra, and so admitting a full-sized bougie. There is also division of the stricture within the urethra by means of a concealed knife passed down to the seat of the disease; there is division of the urethra and stricture from without; and lastly, the destruction of the contracted portion of the urethra by means of caustic—potassa fusa. In a few cases it may become necessary to select either one of these severe methods of treating stricture, but in the majority of instances gradual dilatation by the bougie is sufficient, together with the alkaline treatment, to render the urine less irritating to the sensitive mucous membrane of the urethra.

Cystitis.—I have seen cases of inflammation of the bladder resulting from the treatment of gonorrhœa, but never as the simple effect of gonorrhœa itself. The inflammation, driven from its selected spot by strong injections, has seized upon the bladder itself, and produced so much constitutional disturbance as to endanger life. It is a most painful affection, and requires to be very actively treated. A full bleeding and an emetic will generally cut short the disease. It may then be treated by sedatives and alkalis, together with warm baths and topical fomentations with entire rest.

CHRONIC CYSTITIS AND SPERMATORRHOEA.

There is, however, a chronic form of cystitis, which remains after the acute attack, and which is revived by any convivial excesses, or undue exposure to damp and cold, and gives much trouble to both patient and surgeon. The deposit of a considerable quantity of mucus in the urine, some slight mucous discharge from the urethra, with an uneasiness, scarcely amounting to pain, in the region of the bladder and rectum, indicate this complaint. Of course the same symptoms may be associated with stone in the bladder or kidney, or with stricture of the urethra; and a patient thus affected must be properly sounded and boughied to be sure that we have neither of these diseases before us. Having thus determined that the symptoms do not result from these two causes, we shall in general find that there is much stomach derangement, and that the habits of life require some modification. These being rectified, the muriated tincture of iron in combination with nitric acid, has afforded me the best results in subduing this chronic affection of the bladder. This is the disease which affords opportunities to the roguish pretenders to medical skill to carry out their villanous assaults upon the pockets and fears of conscience-stricken youth. The poor victim is easily persuaded that the mucus which is fished up from the

bottom of the utensil is the veritable seminal fluid; and he implicitly believes that his manliness is coozing from him, and that he is destined to become as worthless and unhonoured as an eunuch. The melancholy effects of this deception upon the minds of numerous young men of all classes must have been witnessed by all hospital surgeons; and it is impossible to be otherwise than shocked at the pertinacity with which the idea is entertained, in opposition to all reason or persuasion to the contrary. It has very fairly been questioned, and very recently, by Dr. King Chambers, whether spermatorrhœa is not altogether a myth. Too much prominence was unhappily given to this subject by the practice of Lallemand, who professed to stop seminal discharges by cauterizing the openings of the seminal ejaculatory ducts. This proceeding utterly failed in practice, and it had the unfortunate effect of inducing others to attempt by many local applications the stoppage of that which is only to be influenced by general treatment, but most especially by moral and educational measures. Doubtless, excessive seminal emissions in persons of an excitable temperament, or in those who have in boyhood unnaturally stimulated the parts of generation, will produce great weakness, and leave a most depressing effect upon the mind; but that the loss of all virile power, with exclusion from society, and a host of other prophetic evils will be the consequence, is a mendacious bugaboo, a *bête noire* raised to frighten and extort. Healthy exercises of body and mind, with moderation in diet, cold baths, and tonics, will seldom fail to reduce these discharges to a healthy standard. To stop them entirely without having recourse to sexual intercourse, would be indeed to produce a state of things which would qualify the unfortunate patient for a place in the Sultan's seraglio.

Bubo.—Persons of a strumous constitution, or very young men who take violent exercise, are occasionally liable to this complication. It is an unfortunate one, because it is very difficult to cure without rest. It is always an inflammatory attack, and

suppuration will sometimes ensue, do what we may. A strong lead lotion is the best means of causing the swelling to subside, and if that fails, warm fomentations and poultices should be perseveringly employed in order to hasten the suppuration as much as possible. As soon as matter is formed it should be evacuated, and then the patient gets rapidly well. Generally speaking, the gonorrhoea subsides at the same time.

THE END.

One interesting feature in the case, but of no uncommon occurrence, remains to be noticed. The absence of ruptured vessel, or abraded mucous surface, seems to warrant us to add this one to the class of cases of true hæmorrhage—extravasation of blood, with all its constituents, solid and fluid, without appreciable lesion of the capillary walls. Bichât says, "I have very often opened subjects who died during hæmorrhage. I have had occasion to examine, in this relation, the surfaces of the bronchi, stomach, intestines, and uterus: never has the least trace of erosion been perceptible, in spite of the precaution of washing carefully the surfaces, leaving them to macerate, and examining them even with the lens."¹ Dr Watson says further—"We employ the microscope to assist our powers of vision, yet we fail, after careful inspection, to discover the slightest breach of substance, or any appearance of erosion."²

It may appear to some that too much importance has been attributed to the state of the splenic vein as a principal cause, after general abdominal congestion, of the serious and fatal character of the hæmorrhages. It is to be borne in mind, however, that "most ordinarily the spleen is very small in subjects who have died of hæmorrhage,"³ unconnected with its own structure; and we have no history to show a hæmorrhagic diathesis. The precise influence of the "growth," which was probably great, must remain unknown. The case may serve to make us more careful in examination of all the structures implicated in any given case, overlooking none heedlessly, though they may, *primâ facie*, appear unimportant.

ARTICLE III.—*Remarks on the Pathology of Syphilis and Gonorrhœa.* By J. L. MILTON, M.R.C.S.

I. THE SEAT OF SYPHILIS AND GONORRHOEA.

EVER since Hunter created, out of the chaotic materials which lay before him, a sound, methodical, rational pathology of syphilis—a structure which must last so long as surgery is cultivated—his doctrines have been in great part, openly or tacitly, recognised by nearly all those who have studied this disease. Long before his time, indeed, some solitary writers had now and again very accurately described one or two varieties of chancre, especially the indurated and phagedenic. But these were solitary instances; and though so many works had been written, not one inch of ground had been gained; no advance towards a system of pathology had been made, and all that was taught about syphilis exhibits the

¹ Op. cit., tome ii., p. 563.

² Lectures, etc. 1848. Vol. i., p. 245.

³ Bichât—Anat. descriptive, tome cinquième, p. 63.

same deplorable ignorance and confusion as when it first attracted so much attention.

Not long before Mr Hunter's time, men talked about the oily parts of the blood fermenting and fretting the rest of the humours; of the disease causing an exaltation of the sulphurous and spirituous parts, which resulted in the formation of a mucilaginous slimy matter.¹ Even much later, it was supposed that the virus passed from the urethra to the lymphatic glands by the blood-vessels, or was "spewed out of the nervous tubes." The symptoms and sequela of gonorrhoea were not only considered part and parcel of one disease, but were lumped together in the descriptions given, as if it were a mere matter of accident which came first. As to the posteroserious nonsense which the early writers treated their readers to, and their sublime indifference to anything like argument; the coolness with which they ignored the necessity for proof, especially of the fundamental principle on which their crudities rested, I despair of giving my readers any idea of it. The dogmatism that opposed the theory of the circulation of the blood was still as vigorous as ever; assumption and a passion for expounding are common to every age, and will always attract more followers than patient labour.

Mr Hunter himself left much for others to do, but it was the wonderful order and system he introduced; the unequalled genius with which he strove to unravel the pathology of syphilis and to trace effects up to causes; the labour with which he sceptically tested by experiment what others had for centuries accepted on mere hearsay, which made his writings of more value than all those anterior to his time put together. The mind which thus created light out of this Cimmerian darkness, and so entirely directed the current of thought from its ancient channel, must indeed have been possessed of transcendent powers.

The object of the present paper is to examine how far the doctrines and nomenclature handed down by Hunter, and perpetuated by Bell, Abernethy, Carmichael, Ricord, Lee, and many others, are in strict accordance with nature, and whether the division of syphilis into local and constitutional will not admit of very great modification; whether, indeed, the term constitutional syphilis ought to be retained.

Before proceeding further, it may be as well to observe, that the doctrine taught by M. Ricord, which now bids fair for a time to supplant all others, is, so far as I have been able to understand it, as follows:—Except in the case of hereditary syphilis, and those doubtful forms of disease where it is transmitted from a child to its nurse and *vice versa*, it begins as a local affection of the genital organs or chancre, through the medium of which the constitution is in a certain number of instances also affected by syphilis. That

¹ Boulton, a *Treatise of the Lues Venerea*.

inoculation of the virus of the chancre is the sole medium of infection, and that the stage of chancre is the only inoculable period of the disease. That the virus, in its passage through the lymphatics and blood-vessels, becomes so altered, that it is no longer inoculable, and hence that syphilis, in its secondary stage, is not conveyed by contact, though it may be propagated from parent to child. That it then undergoes a further change, which induces the tertiary symptoms, when it is neither inoculable nor transmissible. Thus, however widely he may differ from them on other points, the greatest living authority on syphilis, without a shadow of dissent, accepts the theory that syphilis, in its secondary and tertiary forms, is a constitutional disorder, and that it is a blood poison.

It is the examination of these points which I propose in this paper; and as this cannot be properly done without previously defining the natural divisions into which the component parts of the human frame may be resolved, it will be necessary, first of all, to take a brief survey of these.

The first and most important class of organs comprises those of organic life, as Bichat called them, but which might perhaps be called more appropriately the vital organs, such as the heart, lungs, liver, ganglionic nerves, etc., the presence of which, in a certain stage of development, is essential to the existence of every animal that breathes, and the diseases of which threaten life, from the importance of their seat.

The second are those of generation, the testicles and ovaries; and, in the more highly developed classes of animals, the appendages necessary for the extrusion of their contents, as the penis, uterus, etc.; the presence of which is essential to the continuance of the species, and the diseases of which only become dangerous when they mechanically interfere with the functions of vital organs.

The third class comprehends those called by Bichat the organs of animal life; as the eye, ear, skin, muscle, etc.; purely organs of passion, sense, and enjoyment, to which, perhaps, may be added that part of the brain on which reason depends for its existence, the thinking portion. The disorders of these parts owe their importance to their extent and violence more than to their situation.

The fourth class includes those mysterious bodies, the prostate, spleen, thymus, and thyroid glands and seminal vesicles, to which might perhaps be added the pancreas, supra-renal capsules and pineal gland. Observers have as yet entirely failed to detect their functions. Their diseases are almost equally obscure, and are comparatively rare, unless we admit as diseases certain instances of sluggish inflammation or mechanical implication in the diseases of surrounding parts. Indeed, what we know of man's transcendental anatomy would lead us to believe that organs which remain in an undeveloped state, only perform such an amount of function as is necessary for their existence; and as disease is but the increased activity

of some part of a function, we need not look to such structures either for a natural action or its disordered state.

Although these different systems are all composed of the same primitive tissues, fed by the same blood, inextricably connected by a common nervous system, and so linked together by the medium of the skin and cellular tissue as not to admit of any complete anatomical separation, yet a wide difference may be observed in the manner in which they are affected by disease, for certain forms of which certain parts of these systems seem to have a peculiar capacity. Notwithstanding the constant use of such terms as metastasis, repulsion, infection of the system, no disease, except it be hereditary, ever appears in the same form in any two of these classes; and, therefore, to speak of a disease being driven into the system, or of the repulsion or metastasis of an eruption from the skin to internal parts, or of the relief of the system by the breaking out of an eruption, being due to the disease being thrown out upon the skin, is simply to assume a theory of which pathology affords no proofs. Even hereditary diseases, if there be such a thing, which must necessarily affect the very source of every part, show a strong disposition to confine their action to one class of organs. Gout, phthisis, struma, mania, all manifest the same tendency towards a particular seat and ever recurring type.

Genuine syphilis may be defined, then, in its first stage, that of chancre and bubo, as a disease of the appendages of the organs of generation. In its second or more infectious stage, as a disease of those parts of the organs of animal life, and of the essential organs of generation, attended by a certain amount of sympathetic action in the vital organs. This stage embraces the secondary and tertiary affections of authors. It might, perhaps, be better to denominate this secondary stage an affection of the organs of secretion; the tertiary, an affection of the structure itself of the parts attacked. Thirdly, in certain rare cases, we meet with the effects of this sympathy upon the vital organs themselves, the so-called venereal affections of the heart, lungs, and liver, to which, perhaps, the term tertiary affection or stage might be more correctly applied.

In proof of this it may be observed, that not only does syphilis generally begin in the parts of generation, but also spontaneously tends to its termination, either in them or in the nearest lymphatic gland; indeed, its normal and most favourable course may be considered that form of chancre which suppurates early, and is not followed by secondary symptoms. Even in those frightful cases in which sloughing or phagedæna attack the penis, the process of mutilation almost invariably stops at the pubis; whereas a phagedænic bubo will stretch upwards to the navel, and nearly as far in a lateral or downward direction. And when the ravages of the disease encroach beyond its natural boundary, the tendency to limit its invasion becomes more marked with each step it takes.

Again, if we examine the action of syphilis, when the skin of

some other part, as the finger, is inoculated, we find that it very often, if not always, manifests a decided disposition to pass spontaneously into an obstinate affection (or species of psoriasis) of the parts in its immediate vicinity. Roseola, lichen, and psoriasis guttata occasionally attack such patients, but they rarely usher in that decided and intractable ulceration which marks tertiary syphilis.

Until very recently, the few authors who alluded to this subject, maintained that syphilis assumes a more severe form when it commences in other parts than the genitals. M. Caton went so far as to lay down the law, that it is more or less wavering, degenerate, and dangerous, according as the act by which it is conveyed differs from sexual intercourse. Boerhaave adopted the former view, and was followed by Swediaur and Egan. M. Ricord gave it no active opposition in his earlier years, though he now maintains a very different opinion,¹ and has recorded the interesting facts, which I have often verified, that affections of the glands do not follow inoculation of the thigh.

M. Auzias Turenne was perhaps the first who endeavoured to show, by experiment, that syphilis is less severe when it begins in other parts than those of generation, and a close analogy of the cases recorded by Swediaur, Mathias, Ricord, Lee, and others, corroborates his views. In the few instances I have seen of this form of the disease, the infection was communicated through a wound on the finger; and in all but one there were no symptoms beyond papular eruption and swelling of a gland in the axilla, which yielded to very simple remedies. In the exceptional case, the disease gave way to a moderate use of mercury and chalk, and then returned in the form of psoriasis of the palms of the hands. Though very troublesome, it did not extend further, and none of the children born subsequent to the infection ever showed the least trace of the disease. Indeed, in all these cases, the throat and genital organs remained unaffected.

Reverting now to the ordinary form of syphilis, and tracing it to the second stage, we find that it manifests a totally distinct class of features. It is now, probably, a disease of the secreting organs of the skin, mouth, and throat; and one surgeon, Mr Gay, has remarked, "that one of the most constant distinguishing features of the systemic syphilis in the skin is that it principally affects that constituent in which the faculty of secreting some peculiar pigment exists;"² it leaves no abiding traces of its existence; it attacks the semen, the eye, and other organs of the senses, and the inoculation of the pustules is no longer attended with the same results.

So soon as this tendency has fairly developed itself, the chancre, if still unhealed, begins to cicatrize, and with that loses the power of communicating infection; and so strong is this disposition, that

¹ *Lettres sur la Syphilis*, p. 8.

² *Medical Circular*, Jan. 24, 1855.

though it may by neglect, friction, connection, or similar agencies, be prevented for a time from healing, yet it generally triumphs, in a short time, over every obstacle. Indeed, so far as my own observations allow me to form a conclusion, I should say it was impossible for a chancre to go on spreading and secondary symptoms to progress at the same time; cases to the contrary are spoken of, but they will be found, on experiment, to be secondary ulcerations and not inoculable; while, in rebellious primary ulceration, the tendency to the production of secondary symptoms remains at zero.

Finally, if we admit the view urged by some writers, that the site of chancre remains for a certain time capable of communicating a peculiar modification of syphilis, without the medium of an open sore, it is now that this change takes place.

It may be urged against these views, that syphilis in this stage attacks the throat and mouth, and even at a later period the larynx, rectum, and bladder. As this objection might appear fatal to the doctrine, it may be as well to examine it more fully. There can be no question of the fact, and equally little doubt that syphilis rarely passes the boundary which separates these structures from those of organic life; that the parts most liable to be attacked by it are the seats of sensations, pains, and enjoyments generally; parts to which light and air have access. It will be said that the pharynx and larynx are organised like the intestines, and belong to the great gastro-pulmonary tract, but this would be to confound great development of the extremity of a tube with its essential non-sentient parts. The larynx and pharynx have clearly much more to do with speaking, hearing, singing, etc., than with any vital function.

It is very possible that syphilis may now and then pass the boundary between these parts and those which are truly vital, especially in the more advanced period of the second stage, and for a short distance. When this unfortunate result ensues, it will, I think, be found to be a repetition of the process by which the disease extends from a chancre to the thigh or pubis, that is, an action constantly tending to spontaneous arrest. Among the preparations I have as yet examined of syphilitic ulceration of the larynx, the destructive action had not in any one passed beyond the vocal cords; and of ulceration of the œsophagus I have not been able to find any instances. When, then, we consider that they are anatomically so closely connected, that the same mucous membrane, cellular tissue, nerves and blood-vessels, run through their framework, we must admit that it would be quite in conformity with the previous progress of the disease, to pass the narrow boundary which separates the larynx from the trachea or the pharynx from the œsophagus. Indeed, I am not prepared to assert that it never does to a certain extent. The essential point, however, is, that the encroachment is most rare, if it occurs at all, and extends but little beyond the boundary separating these two systems, and that there is clearly a point at which it ceases to exert its power.

Although syphilitic affections of the anus are so common, yet extension from this part along the colon, or even beyond that portion of the rectum which is endowed with a certain amount of animal sensation, is unusual and even doubtful; and though chancre in the urethra is not a very uncommon form of disease, yet I have only found an account of two cases in which the ulceration extended to the bladder. They are quoted by M. Ricord¹ from a Thesis by M. de Lavergne. In one, the patient died of marasmus, having apparently had only gonorrhœa and orchitis; the secretion from the urethra, however, yielded a chancreous pustule, and, after death, rounded ulcerations, possessing a distinct syphilitic character, were found in the bladder. In the second case, the patient suffered from chancre and died. Autopsy revealed extensive ulceration of the spongy part of the urethra, perforating the entire thickness of the mucous membrane, and behind the bulb traces were found of a vast phagedænic chancre, extending along the membranous and prostatic parts of the urethra, the neck of the bladder, and even into the cavity of the viscera.

In a more advanced period of this stage, the so-called tertiary symptoms appear. The process of destruction begins, tissues are attacked, and the disease becomes less diffuse and more formidable. But the fact of most importance to the present discussion is its tendency, as it becomes more and more localised in one set of organs, to recede from others. M. Ricord affirms that, at this period, the affection is no longer capable of transmission, by descent, from parent to child; and the observations and cases I have as yet been able to collect, not only corroborate his statement, as respects the father at least, but show, so far as they go, that syphilitic children often spring from parents who do not, and never did, suffer from the disease in a severe form; while those who have felt its ravages most extensively, often propagate a healthy offspring. Amongst others, I possess two very complete histories of families in which I think this point was shown, and of which I now give a very short abstract.

In the one, the husband and wife were both attacked with the disease in a very severe form, and were both salivated after its nature had become quite apparent. Neither of them benefited much by the process. The husband, after suffering from syphilis for years, went mad, and ended his days in an asylum. His wife remained seventeen months under the care of her medical attendant, without ever getting thoroughly well, and some years ago came under my care with an obstinate tertiary affection of the tongue. Several children were born subsequent to the period of infection. They were all alive a few months ago, and though I have repeatedly examined some of the younger ones, and carefully cross-questioned the mother, who was perfectly aware of the nature of the disease, and most anxious that it should be traced out if it really attacked

¹ *Traité Pratique.*

any of the family, yet all I could learn leads me to believe that not one of those children ever had a symptom of syphilis.

In the other case, the husband and wife were also salivated; the husband before marriage. He had an attack two years after, and was again salivated. In the first attack, his symptoms, which were but very slight, were easily removed, and, indeed, would have been scarcely thought to require mercury; but he had the good fortune to fall in with one of those strong minded old surgeons who are not disposed to tolerate any hasty innovations, and who consider blue ointment as the only Balm of Gilead for the venereal. This gentleman put him so effectually through a course of mercury as to cure him, not only of his syphilis, but well nigh of all other mundane evils at the same time. For the second attack, he was treated with mercury internally to salivation. He had in all two slight attacks of eruption and sore throat. I examined him very carefully, but detected no traces of syphilis either in the genital organs or other parts. His wife was confined, in four deliveries, of five children, most of whom died early and with suspicious symptoms; one was born with an eruption. She then aborted; had for the first time symptoms of secondary syphilis, was mercerialised, aborted again and then again. Her symptoms were never severe, and consisted of two slight attacks of tubercles on the face, one of sore throat, and one of tissues on the left arm.

In other cases, the course of the disease was still more severe in the children, but of shorter duration; in one instance, two children of a Jew were born syphilitic, the father having, so far as I could detect, no secondary symptoms whatever, and the mother only slight traces of the disease. During three years they have occasionally attended whenever any of the children, especially the oldest of the two, had a relapse, but they have neither of them had any further symptoms of the disease. Indeed, I could fill up the space allotted to this paper by detailing similar cases. It is not, however, meant by this to assert that the propagation of venereal children is always marked by the absence of visible signs of syphilis in the father; but simply to state that, so far as my own observations warrant me in drawing a conclusion, the evident symptoms of the disease are less apparent in persons whose offspring is clearly affected.

If the affections of the lungs, liver, pleura, etc., which in some persons follow inveterate syphilis and close the scene, are to be admitted as purely syphilitic, then, I submit, either that the term tertiary would be more correctly applied to this stage, or that it should be distinguished as a widely different epoch of the affection. Before, however, it is conceded that such affections are syphilitic, it will be as well to examine the evidence upon which this opinion is founded.

The first, and one of the most serious objections, is the extreme rarity of such cases. The statistics already placed before the pro-

fession, of late years, have shown that death from syphilis is, comparatively speaking, extremely rare, even with such an enormous number of patients as are yearly treated in London for every form and grade of this disease. In three years, only eight patients died of syphilis in St Bartholomew's Hospital, and four of these sunk under the shock of sloughing phagedæna; twelve more, indeed, died with syphilis, and in the venereal ward, but there is sufficient evidence that these patients succumbed under other diseases, aggravated by the presence of syphilis. Sir George Ballingall states,¹ that for many years of his life he was in the habit of seeing at least ten to twenty venereal cases daily, and that he only recollected one instance of death from this disease where the treatment from first to last fell under his own observation. Similar evidence is yielded by the careful labours of Mr Judd and Mr Acton, by Mr Lloyd,² etc., but it is not necessary, perhaps, to accumulate evidence on a point of doctrine which is I believe, generally admitted.

If, then, with such ample materials for a fatal result, this termination is so rare, there must be some reason for it, and this, I submit, consists in the inability of the vital organs to take on the same action as the skin. Unless some law of this kind really prevails, how does it happen that a disease, which we are told contaminates the blood, does not affect every organ supplied by the blood? How is it that a malady, so intractable in its natural seat, should not more frequently produce the inevitable results of intractable maladies of the vital organs, death?

Secondary and tertiary syphilis invade the most healthy; no constitution seems to possess immunity against their attacks; but when the patient sinks under the disease, we almost always find that ill-regulated or over-prolonged courses of mercury, dissipation, and constitutional weakness, have shaped the issue of the case. He does not die from a specific disease, marked by salient and familiar symptoms, but from some common form of illness, such as phthisis, pleuritis, pneumonia, anasarca, or exhaustion. Secondary and tertiary syphilis always appear in a form which at least awakens the suspicions of every observant surgeon; but it is very doubtful if the most accomplished pathologist would recognise the so-called syphilitic affection of the lungs and liver were the accompanying circumstances and history of the case withheld.

The most complete account I have met with of syphilitic diseases of the lungs, is that given by M. Lagneau,³ yet when we analyse the signs described by him as characteristic of pulmonary syphilis, we find but very doubtful features of a distinct form of disease. In three very careful autopsies of syphilitic patients, one of whom died of phthisis, the two others of chronic pneumonia, I was unable to detect any decided traces of syphilis, and as, during the time I

¹ *Outlines of Military Surgery*, p. 472, 1852.

² In a discussion at the Medico-Chirurgical Society, June 9, 1846.

³ In his *Thesis Des Maladies Pulmonaires*.

assisted Dr Peacock, when Governor of the Royal Infirmary of Edinburgh, and subsequently in London, I made and assisted at upwards of two hundred *post-mortem* examinations, I am perhaps justified in assuming that, had any striking evidence of syphilis been present, it would have been detected. Mr William Adams, in twelve years' experience as demonstrator of morbid anatomy at St Thomas's Hospital, informs me that he has not been able to recognise, in persons dying from syphilis, any of the distinctive features of this disease in the vital organs. They all showed evidence of having died from common affections, fatty liver being one of the most frequent phenomena in old standing cases.

Syphilitic ulcerations of the larger intestine have been noticed after death, and even diagnosed during life; but, in all the cases I have heard of, a distinct syphilitic affection of some other part revealed the nature of the malady; and the question naturally arises, whether these ulcerations would have been pronounced syphilitic, but for this guide, and, therefore, whether they are to be considered as such.

In the infant, we naturally expect that syphilis must assail every organ at its source, and without distinction. So far as my knowledge of physiology, which is not very extensive, goes, it is supposed that the spermatozoa pass through the chink in the zona pellucida, and that, immediately after, the cells in the germinal vesicle begin to liquify and disappear under the absorbing power of those from which the permanent structures are to be produced; thus tainting every primary structure. This is so very different a process from inoculation of the adult, that death of the foetus and syphilitic affections of the thymus gland are not fairly to be considered as facts which invalidate the previous conclusions.

But, the more carefully we study the phenomena of syphilis, the more clearly do we see the nature of the disease reasserting its power; as the organs of animal and generative life become more developed, syphilis becomes more localised in them, and recedes from or exerts less power over the vital organs, so that death grows less frequent with the change from the embryo to the child, and lessens with its advancing years. In an infant suffering under syphilis, the skin is sure to be affected; while the so-called syphilitic disease of the lungs is rare, and becomes more so as the development of the organs of the senses and volition begins to equal, and at last exceed, that of the vital organs.

This, or some similar law, seems to regulate the influence which treatment exerts over this mysterious disease. In the very young, syphilis is almost always cured; in the adult, the chances are more evenly balanced; and when the animal system begins to decline in vigour, the probability of a cure lessens. Mr Langston Parker¹ tells us, that after forty we can rarely hope for a cure, especially if

¹ *On the Modern Treatment of Syphilitic Diseases*, p. 181, 1856.

the mercurial vapour be not employed, and the disease assumes the prostate or tubercular form. *If such be the case*, we have three great epochs in which syphilis may terminate very differently. 1. Intra-uterine life, or the period in which the development of the vital organs is most rapid and the disease most frequently fatal. 2. The interval between birth and mature age; during which the animal and generative organs attain their utmost vigour; in which syphilis is less fatal, and most easily cured; and, 3. The interval between maturity and the decline of life; in which it is most curable, least fatal, and least productive of sympathetic disturbance of the vital organs.

For these and other reasons to be subsequently given, I submit, that the use of such terms as constitutional or systemic syphilis, infection of the system, etc., is not warranted in the present state of our knowledge. If medicine is to attain that certainty and accuracy of research which have produced such splendid results in allied branches of learning, it can only be by eliminating all equivocal phrases and hasty generalisation.

When we examine the course of gonorrhoea, we find still further proof of the doctrine I have ventured to bring forward. Not only does this disorder appear to show that an inflammation of the same kind acts very differently upon analogous structures in these different systems, but, like syphilis, it proves that there is much less sympathy between the vital organs and those of generation, than between the latter and those of animal life. A gonorrhoea may remain for years, and yet, when cured, leave no trace of its presence; whereas, the existence of a purulent discharge for as many weeks, from the conjunctiva or trachea, could scarcely fail to be accompanied by a certain amount of mischief; and while every surgeon has seen gonorrhoeal rheumatism or ophthalmia, an analogous affection of any vital organ has yet to be discovered.

However long a gonorrhoea may last, however acute the form it may assume, the parts in the immediate vicinity are seldom implicated, and then but slightly. Hunter's law of sympathy by continuity, may connect the parts of which a system is composed, but it does not seem to possess the power of extending from one system to another. The redness of the scrotum in orchitis and erysipelas, or acute oedema of the scrotum, perhaps never extend to the abdomen, though the skin over the pelvis may become a little swelled. If colicky pains, depression, and nausea, accompany swelled testicle in some persons, they seem to be of a purely nervous character; evidence only of the connection of these parts with the sympathetic and perhaps the spinal cord. The purulent inflammation of gonorrhoea may extend from the vagina to the uterus, and even cause pain and swelling of the ovaries; it may creep along the vasa deferentia to the epididymis, and even induce a certain form of painful irritation in the testicle or bladder; but the general health remains

unaffected in the most obstinate cases, unless it suffer from the mental irritation occasioned by the presence of the disorder, or the large quantities of powerful medicines taken to remove it.

"I have seen cases," says Mr Hunter,¹ "where the irritation (of gonorrhoea) has extended so far as to affect with real pain the thighs and buttocks and the abdominal muscles, so that the patient has been obliged to lie quiet in a horizontal position. The pain has at times been very acute, and the parts have been very sore to the touch; and they have even swelled, but the swelling has not been of the inflammatory kind, for notwithstanding a visible fulness, the parts have been rather soft."

If syphilis and gonorrhoea are compared, we find simply two diseases arising in the same parts, and equally obedient to the same law; but there the analogy stops short. Not only does gonorrhoea differ from syphilis in its first stage, by not producing the characteristic pustule when inoculated, and in the second by the absence of eruption and ulceration, by the rare occurrence of a second stage at all; but it differs still more widely in the fact, that with the disappearance of evident symptoms of its existence in its primary seat, the possibility of secondary affection arising disappears also.

But I may perhaps be permitted to go still further, and inquire whether gonorrhoeal rheumatism, ophthalmia, or any other sequela of gonorrhoea, supposed or real, can be admitted as secondary in the same sense as we use this term in speaking of syphilis. The inquiry is quickly answered in the negative; for which a certain amount of development, in the depositive process of chancre, is sure to be followed by secondary symptoms; gonorrhoea may attain every degree of activity, and reappear any number of times, without once being followed by a symptom of the kind. Syphilis will rarely produce secondary symptoms twice in the same person; but, frequently, a patient who once suffers from gonorrhoeal rheumatism or ophthalmia, will be assailed by these sequela after each attack of the parent disease.

Lastly, the phenomena of gonorrhoea enable us to trace still more clearly a great difference between the testicles and other structures. Bone, muscle, cellular membrane, pass through all the phases of inflammation; but in the testicle such a termination as sloughing is unknown; suppuration even, is very rare. Even the coverings of the testicles present peculiar features in this respect; they seem endowed with too little vitality, or else too much irritability, to endure a continuance of the process. Inflammation of the vaginal sac terminates with extreme rapidity in effusion of serum, which, like the sudden hardening and thickening of the epididymis in swelled testicle, is absorbed very slowly. In the scrotum, though highly vascular, sloughing is as sudden, and sometimes as unlooked for, as the rapid repair it undergoes. When attacked by

¹ Hunter's Works by Palmer, vol. ii., p. 177.

acute oedema, it will swell enormously in the course of a single night.¹

Unlike syphilis, gonorrhoea attacks those mysterious organs, the prostate and seminal vesicles; the latter much the more rarely of the two. But its action on this class of structures is always limited to those bodies, and then, apparently, simply because they are anatomically and closely connected with the genito-urinary organs. The more distant parts, such as the thymus and thyroid glands, are rarely if ever affected.

Should the views, of which an explanation has now been attempted, ever be received, they may possibly explain some facts long known with respect to the action of medicines on these diseases: as, for instance, how it happens that mercury has always proved so much more reliable and more curative, when applied to the skin in the form of friction and vapour; and why its action on the bowels and nervous system is in an inverse ratio to its control over the disease; why this powerful mineral acts so beneficially on children when applied directly to the animal system, which is undergoing such rapid development. In them, we may discover the reason why, in chancre and swelled testicle, antiphlogistic means are inert; while sedatives like camphor and opium, which act on one of their common bonds, with the vital organs, the nervous system, so easily subdue these painful symptoms; and why those remedies which act on the urinal tract, like copaiba and potass, and direct applications to the seat of disease, as injections, effect ten times more cures than the most powerful alteratives, purgatives, antiphlogistics, and tonics, which we know to be sheet-anchors in the treatment of so many serious affections of the vital and animal organs.

In presuming to alter thus widely some of the laws laid down by Bichat and Hunter, a certain amount of censure must necessarily be expected; but as the facts on which these views are founded have been laid before my readers, I must refer the matter to their decision.

ARTICLE IV.—*On the Influence of the Woollen Manufactures on Health.* By J. B. THOMSON, Surgeon, General Prison, Perth, L.R.C.S. Edin.

In the *Edinburgh Monthly Journal of Medical Science* for October 1853, Professor Simpson published a very able and ingenious Essay, on External Oil-inunction, in which he very satisfactorily, I think, established the following propositions, viz. —

1. That the operatives in the wool factories are a healthy class, and that the oils among which they work undoubtedly contribute to the promotion of good health.

¹ See a paper by Mr Liston in the *Med. Chir. Trans.*, vol. xxii. p. 288.

2. That the oils in the factories pass into the system chiefly by the skin, and perhaps by inhalation also, thereby improving the constitution.

3. That oils rubbed into the skin, or absorbed by bathing, are important remedies for arresting or averting diseases arising from defective nutrition.

4. That singular exemption from epidemic influence seems to belong to all those operative classes much engaged among oils.

5. That external oil-inunction is a cleanly process, and deserves, at least as an adjuvant, to be actively used for the prevention and treatment of scrofula, consumption, etc.

These propositions appear so valuable, that I am anxious to strengthen the proofs regarding them by the following statements and statistical tables.

There is nothing new under the sun. The virtues of oil externally applied to the human body are noticed as early as the dawn of human history. In the Bible, oil is spoken of as applied to the consecration of the Hebrew priesthood, and for other holy uses, as a type of Divine grace and goodness. It is also praised as an article of value, a luxury, in the same category with one of man's chief blessings: "Wine, that maketh the heart glad; and oil, that maketh his face to shine." From the siege of Troy to the fall of Rome, many of the classic poets are found to make reference to oil-inunction. The warrior when he went to the field, the wrestler preparing for the arena, was strengthened by oil-friction and bathing—"non olivum vitat;" and the gods and goddesses anointed with fragrant oils, to grace the festivals and ambrosial feasts of Olympus. Nor have the philosophers been silent upon this. Seneca practised oil-bathing; Pliny says, "The human body receives vigour and strength from every kind of oil." Democritus, when asked upon the subject of health and long life, answered with a common maxim of the day, similar to the Scripture expression already quoted, "Apply wine within and oil without." And one of our own sages, the brightest in what may be styled our Augustan age—Lord Bacon, says, "Beyond every agent for prolonging life, I know not any equal to the external application of oil to the human skin, 'ante omnia unum olei vel olivorum vel amygdali dulcis ad cutem.'" Stronger testimony for any remedial agent cannot be gathered anywhere. And it is curious that the moderns should completely have forgotten a substance so highly sanctioned by antiquity.

With extensive opportunities, during seventeen years, while acting as certifying surgeon to the woollen factories of Menstrie, Alva, Tillicoultry, Dollar, and Glendevon, my observation has been directed a good deal to the effects of oil upon the operatives. As far back as 1840, in a paper published in the *London Medical Gazette*, I tried to draw attention to "The Influence of the Woollen Manufactures on Health;" and with the views set forth in that paper I have had more and more reason to be satisfied; no fact connected with

inexplicable—like that young man mentioned by Abercrombie, who heard normally only when bent, and was quite deaf whenever he stood upright; or like three cases mentioned by the author, in whom perfect hearing was present when from any cause the external circulation was excited and transpiration increased, and who became deaf as they cooled down again.—*Prager Vierteljahrsschrift f. d. prak. Heilkunde*, Ser. Bd. 1857.

HOW MANY CHILDREN CAN A WOMAN BEAR?

Dr Szukits says has not yet been satisfactorily answered. He himself has observed two females, each of whom had borne twenty-four children. Oslander (*Handb. d. Entbindungs Kunst*, 1 Theil, 1 Abth. S. 319) mentions one woman who during her married life bore 44 children, and another who had 53. Burdach (*die Physiol. als Erfahrungswissenschaft*, 1 Bd. 1826, S. 410) relates that the wife of a countryman in the Moscow district had given birth to 69 children at 27 confinements,—four times four at one birth, seven times three, sixteen times twins. In the year 1809, the Vienna newspapers contained the following announcement:—Maria Anna Helm, the wife of a poor linen weaver in Neulerchenfeld, 29 years married, bore at 11 confinements 32 children; 23 living, and 4 dead; 26 were males, and 6 females; all were begotten by one man, and nursed by herself. She had at her last confinement three children—one living and two dead. Her husband was a twin, she herself one of four. Her mother had produced 33 children, and died during a confinement with twins (Oslander, 516). Six children seem to be the largest number ever produced at one birth. A perfectly trustworthy instance of this is the following:—*The Schwäb. Mercur*, No. 3, S. 22, 1806, contains the following notice:—Othian in Silesia, 11 Dec. 1805.—The wife of a chimney-sweep here, named "Dipfer," was yesterday confined of six children; all were boys, and dead. This woman, who has been twice married, has already given birth to 44 children. During her first marriage, which lasted twenty-two years, she bore 27 boys and 3 girls. In her second marriage, which has lasted but three years, she has born 14 children—3 at the first, 5 at the second, and now 6 at third confinement (Oslander, 320).—*Zeitschrift, d. K.K. Gesellschaft d. Aerzte zu Wien*, Juli und August 1857.

CONTRIBUTIONS FROM THE SYPHILITIC DEPARTMENT AND CLINIC OF THE BERLIN CHARITE HOSPITAL. BY DR VON HARENSPRUNG.

The author considers that if there be such a thing as syphilisation, then the distinction between syphilis and other contagious diseases no longer exists, as all alike exhaust the susceptibility of the organism for their contagion. The author considers that syphilisation causes a vast increase of the contagious material, greatly increasing the chance of accidental infection. Comparison with vaccination is incorrect, in so far as by it one pustule becomes a protection from hundreds; but by syphilisation hundreds of artificial chancres are formed, and kept open for months, giving possible occasion for the wider spread of the disease. Syphilisation is an unpleasant and tedious method of cure, "dragging its slow length along" for from two months to a whole year. There is also no certain result hitherto attained; and in those who had formerly taken mercury the cure was often more tedious, and more liable to relapse. The author considers that syphilis is a poison which, under favourable circumstances, may be overcome by the natural powers of the system, and thrown off with other effete matter;—that these favourable circumstances are chiefly a temperate and equable climate, regular habits of life, easily digested food, baths, and exercise without fatigue; while the converse of these have an injurious influence on the disease. He considers that mercury does not destroy the poison of syphilis, but that during its presence in the system it keeps it in abeyance, and that it subsequently reappears in a form all the more unfavourable, the more the constitution has suffered from the mercurialisation. Therefore it is of importance to employ preparations of mercury which are manageable, and easily and quickly introduced into the system; and he considers that those preparations most soluble in the gastric fluids (the oxides—oxide salts and oxydal salts) lose their

corrosive properties when combined with a sufficiency of white of egg. The author regards mercury as useful in indurated chancre—in indolent glandular swellings—in macular, squamous, and papulous eruptions—in tritis, broad condylomata, and those flat condylomatous sores of the mouth and pharynx; consequently, in all truly secondary affections. He considers it useless in primary, indurated chancre, and injurious in all cases in which the constitution is already suffering from mercurialism; in those cases, preparations of iodine are more useful.—*Ann. d. Charité-Krankenhaus*, 1856, lft. 2; and *Prager Vierteljahrsschrift*, 3er Bd. 1857.

TREATMENT OF ACUTE MANIA.

Dr Baillarger has treated acute mania with milk with the best result. He particularly recommends it in those cases arising from weaning, or the return of menstruation after childbirth. Such patients he treats with milk in large quantities, mingled with Aqua Laurocerasi, which is a useful sedative, and improves the flavour of the milk. Marcé cured by this means a periodic mania occurring in a hysteric person after weaning, and recurring at each menstruation in spite of other appropriate treatment by tonics.—*Gaz. d. Hôp.* 1856, 151, and *Prager Vierteljahrsschrift f. d. prak. Heilk.*, 3tn Bd. 1857.

INCUBATION OF MEASLES.

The period of incubation of measles has been variously estimated. Dr Kerscheneitner, Assistant in the Munich Hospital for children, has endeavoured to fix it by observing the day on which the eruption appeared on the second affected child of a family, reckoning from the day it appeared on the first; and only such cases were collected and tabulated as could be clearly shown to have no communication with any other measles patients. Of 37 cases so collected, the eruption appeared in 34 between the 10th and 12th day.—*Bayer. ärztl. Intelligenzbl.* 1857, 9; and *Prager Vierteljahrsschrift f. d. prak. Heilkunde*, 1ster Bd. 1858.

TOXICOLOGY.

POISONING BY TURPENTINE VAPOURS.

M. Marchal (de Calv) communicates the following fact:—Mademoiselle H. of good constitution and sanguineo-nervous temperament, was convalescent from an attack of acute articular rheumatism, when she had the windows and doors of her sleeping apartment painted with oil-colour, composed of ceruse, oil of pinks, and essence of turpentine. The room was large and airy, having two doors and two windows; and finding herself somewhat fatigued on the day, upon which it had been painted, she retired early to bed; she had not, however, been asleep more than two or three hours, when she awoke in a state of alarming uneasiness, but having sufficient strength to cry out. M. Favrot, who had attended her in her recent illness, was sent for. On his arrival, he found the patient in the following condition:—The countenance anxious, shrunk, and pale; the eyes sunk, and surrounded by a dark ring; the voice gone, and the strength so completely exhausted, that the limbs upon being raised fell heavily back by their own weight; acute pain in all the joints; violent and continuous abdominal pain, causing the patient to lie doubled up; nausea, yet inability to vomit owing to excessive weakness; respiration hurried, short, and anxious; pulse threadlike, and scarcely perceptible; a cold and clammy perspiration existed over the whole body. The symptoms resembled those of malignant cholera, and M. Favrot asserted that he would have set them down as such, had it not been for the powerful odour of turpentine in the room,—an odour so strong that he suffered from headache until next day. Without any delay Mademoiselle H. was conveyed to an adjoining house, and there had brandy and hot camomile exhibited to her, along with a stimulating draught of tinct. of camella. Sinapisms in great numbers were applied, and other remedies resorted to, but in spite of every endeavour the patient remained for thirty-six hours in a condition of utter prostration; and eight days passed before she regained sufficient strength to stand. She is now, however, restored to perfect health.—*Revue de Therap. Méd. Chir.*, January 1858.

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PART FIRST.

Analytical and Critical Reviews.

REVIEW I.

1. *Den Syphilitiske Hjeruelidde. Afhandling for den Medicinske Doktorgrad.* Af VALDEMAR STEENBERG, Tredie Læge ved Sindsygeanstalten ved Slesvig.—Kjøbenhavn, 1860. 8vo, pp. 269.
On the Syphilitic Brain Disease. A Thesis for the Degree of Doctor of Medicine. By VALDEMAR STEENBERG, Third Physician to the Institution for the Insane at Schleswig.—Copenhagen, 1860.
2. *Maladies Syphilitiques du Système Nerveux.* Par GUSTAVE LAGNEAU, Fils, Docteur en Médecine, Membre de la Société de Médecine du Département de la Seine, de la Société des Sciences Médicales, Membre Associé de la Société d'Anthropologie, &c.—Paris, 1860. 8vo, pp. 531.
Syphilitic Diseases of the Nervous System. By GUSTAVE LAGNEAU, Jun., M.D., &c.
3. *Des Affections Nerveuses Syphilitiques.* Par le Docteur LÉON GROS, Ancien Interne des Hôpitaux de Strasbourg, &c. &c.; et E. LANCEREAUX, Interne Lauréat des Hôpitaux de Paris. Ouvrage couronné par l'Académie Impériale de Médecine (Prix Civieux, 1859).—Paris, 1861. 8vo, pp. 486.
On Syphilitic Nervous Affections. By Dr. LÉON GROS and M. E. LANCEREAUX.

THE almost simultaneous appearance in France and Denmark of three important works upon a class of diseases to which, although they have long been to a certain extent recognised, comparatively little attention has until recently been directed, is in itself a proof that these affections are at length receiving the consideration which their importance demands.

In the writings of Nicol. Massa, who lived about the time of the celebrated epidemic which, at the close of the fifteenth century,

ravaged Europe, occurs, observe MM. Léon Gros and Lancereaux, a notice of syphilitic neuralgia, the most ancient with which we are acquainted. In the following century appears Paracelsus, the first to speak of the venereal miasm:

"He admits that once introduced into the system, this venereal miasm combines with all other diseases; that it modifies them, gives them new forms, and, pushing this doctrine to its utmost limits, he affirms that the virus may produce the most varied affections—phthisis, diarrhoea, dropsy, the exanthemata, &c. In a word, he attributes to the venereal taint the property of profoundly modifying the system, and of manifesting its action by often very remote general symptoms." (p. 2.)

On the other hand,

Fallopini denied that syphilis was a general disease. According to this writer, the disease, local in its commencement, always continues local, and the symptoms which have their seat at a distance from the original seat of the affection do not belong to syphilis. The non-virulists of twenty years ago could not have said more!

Thierry de Hery (1634) dwelt a little more than his predecessors on syphilitic manifestations connected with the nervous system. He proves from facts that syphilis may be complicated with a train of nervous accidents, such as spasm, epilepsy, &c., and he goes so far as to assert that it may become the source of all diseases.

Gervais Uçay, who wrote at the close of the seventeenth century, attributes great importance to badly treated syphilis; he says, in fact, it is these that so many hereditary diseases proceed, scrofulous tumours, old ulcers, attacks of gout and rheumatism.

Musitano (1771) quotes a large number of diseases which syphilis may produce, and among them he includes asthma, phthisis, dysentery, marasmus; he says, in fine, that there is no disease nor extraordinary symptom which may not flow from this poisoned source." (p. 3.)

Astruc considers syphilis to be capable of producing all diseases—in particular, weight in the head, furuncle, hemiparesis, vertigo, convulsions, epilepsy, paralysis, trembling of muscles, hydrocephalus, want of sleep, asthma, orthopnea, cough, palpitations of the heart, syncope, faintness, inequality and intermission of the pulse, hypochondriasis, emaciation, atrophy, &c.

Sanvages also admits that a number of diseases, and even of febrile diseases, may be produced by the syphilitic virus.

Sanchez (1777) distinguishes from acute syphilis—the only form, he says, described by his predecessors—a variety which he terms chronic, and which manifests itself by a temperament under the influence of which the life of the sufferers is tormented by a number of affections. His theory would seem to have much analogy to that of the masked syphilis of the present day. Among the serious phenomena enumerated as being capable of being produced by syphilis is mania.

Van Swieten, the great commentator of Boerhaave, the ardent advocate of the treatment of syphilis by corrosive sublimate, asserts that no organ can escape the incessant aggression of the venereal miasm; he has traced it even to the brain. The source of gummy tumours, exostoses, deep-seated pains,

the syphilitic virus may, according to him, produce the most serious accidents, apoplexy, epilepsy, blindness, deafness, paralysis, &c." (p. 4.)

Carrère (1783) treated more particularly of the degenerated forms of syphilis.* According to this author, the degenerated virus may produce phthisis, rheumatism, ophthalmia, cachexy, asthma, dropsy, dysuria, paralysis, epilepsy, apoplexy; moreover, it may be complicated with all other viruses. Carrère divides these diseases into *masked* chronic venereal diseases, depending on the venereal virus *latent* but remaining venereal; and into *degenerated* chronic venereal diseases, kept up by a venereal taint *modified* or *complicated* by another virus." (p. 5.)

Benjamin Bell saw confirmed syphilis produce blindness, amaurosis, deafness, phthisis, asthma, rheumatism, epilepsy, and even mania.

"We may remark in passing," continue MM. Gros and Lancereaux, "that Benjamin Bell is perhaps the first syphilographer who supports his opinions with clinical facts of any value, while the majority of preceding authors either do not enforce their doctrines by the aid of any clinical proof, or they bring forward observations so vague, so devoid of the most essential details, that we cannot, in the present state of science, draw from them any important deduction." (p. 6.)

John Hunter, in his great work on the venereal disease, having, in assigning to the venereal poison, if not as its exclusive seat, at least as its seat of election, certain tissues and organs, thrown doubts on the reality of the remaining manifestations admitted in such great number in his day, was followed by others who absolutely denied the specific nature of the majority of the accidents hitherto attributed to the syphilitic virus. It is sufficient to mention the names of Richond des Brus, Desruelles, Jourdan, and all those whom M. de Castelnau designates by the title of *non-virulists*, to show how far a principle pushed to extremity may lead.

"To sum up," observe MM. Gros and Lancereaux, "between the opinion of the writers of the sixteenth, seventeenth, and eighteenth centuries, who almost all saw in syphilis a true morbid Proteus, capable of assuming the most varied pathological forms, and in the majority of acquired or hereditary chronic affections discovered so many metamorphoses of the venereal disease; who believed that this maldy might remain during a very long period latent in the economy, to break forth subsequently under one of the thousand varied forms of the nosology, and who, in consequence of this belief, laid down as a principle the necessity of submitting all patients affected with syphilis, whatever might be the degree or date of their disease, to a full mercurial course; between this opinion, we repeat, and that of the present day, which restricts the venereal disease to a certain number of organs and tissues, on which side lies the truth? No doubt there has been much confusion and exaggeration among the advocates of the first opinion, but resting upon numerous facts, which for the most part we believe to be conclusive, we affirm that in what relates specially to the influence of syphilis upon the nervous system, we must overstep the narrow circle within which the majority of modern syphilographers have endeavoured to confine the history of the disease." (p. 10.)

It is, however, more than possible that much of the diversity of opinion which has from time to time existed on this subject may be due to variations in the type of the disease. That such is the opinion

* Recherches sur les maladies vénériennes chroniques sans signes évidents, c'est-à-dire, masquées, déguisées ou compliquées.

of the writer whose work we have placed first at the head of this article, is evident from the following passage, though, according to him, it is of late years that a preponderance of syphilitic neuroses has been observed. But the truth probably is, that the syphilitic poison is subject to the law of cycles so evident not only in other diseases, but in all subluxary phenomena.

"The rise and course of syphilis have not at all times been the same; thus, while attention was first directed to this disease, it set in with a violence and a malignity, and ran an acute course, such as have never since been observed; it assumed, in the lapse of years, a gradually milder character. Now, again, it seems most recently to have once more altered its form. Thus, its ancient regularity with respect to the several series of symptoms no longer prevails; on the contrary, we often see so-called tertiary symptoms set in almost immediately after the primary affection, and on the other hand, we frequently observe a secondary lesion suddenly to develop itself in a patient who has long presented tertiary forms. Mercury and iodine have not now, as formerly, the absolute power of overcoming every existing syphilitic phenomenon, for we not unfrequently meet with patients whose symptoms appear to be wholly unaffected by these our most powerful anti-syphilitic remedies. Lastly, syphilis has altered its character also with reference to the organs it attacks; while, on the one hand, it has become so much milder, that it now seldom causes the devastating affections of the bones, which not many years ago were so general, it has, on the other, become far more injurious, inasmuch as it seems much more frequently to attack the internal organs, and especially man's noblest part, the brain." (p. 5.)

Such is the most important portion of the "Confession of Faith" with which Dr. Valdemar Steenberg prefaces his highly practical volume. We shall endeavour to bring before our readers the leading points connected with the pathological anatomy, the symptomatology, the etiology, the diagnosis, the prognosis, and the treatment of the formidable lesion he describes.

The morbid primitive form, which presents itself, more or less distinctly marked, at every post-mortem examination of cases of the disease in question, is sanguineous congestion of a limited portion of the brain. But if the patient dies immediately or in a comparatively short time after having for the first time presented apoplectic symptoms, we find either nothing—as occurs in many other congestions of both external and internal organs—or distinct hyperemia, or lastly, capillary apoplexy with point-like extravasations of blood in the substance of the brain. If, as is most frequently the case, the cerebral affection runs a more chronic course, we meet with other also multi-form phenomena, which, however, all likewise depend upon the sanguineous congestion. This congestion, with the capillary apoplexy depending on it, will frequently recur during the chronic course of the disease, manifesting itself at each period of recurrence by distinct exacerbations, and will, as is usually the case in all congestions, especially affect the part already predisposed to it. Softening of this part thus ensues, caused either solely by the changes in the brain in the seat of the congestion, invisible to the eye, but sufficiently established by their effects (paralysis, death), or by the influence which the extravasated and subsequently metamorphosed blood may have on the sur-

rounding cerebral mass; or, finally, by the obliteration of the ruptured capillaries, and the consequent obstruction to the free afflux of blood for the nutrition of this part of the brain.

The extent of the softening is very various; sometimes not larger than a pea, it may occasionally occupy even an entire hemisphere. It is seldom accurately defined. Occasionally the affected part will increase in size, so that, if it be superficially situated, it will be found more prominent than the corresponding portion of the other hemisphere; most frequently, however, it will be recognised by a collapse and diminution, as if the result of incipient atrophy.

In one patient who had suffered much from syphilis, and had died with apoplectic symptoms, the author, on dissection, found a large coagulum in the basilar artery, together with corresponding thickening of the coats of the vessel, without any other abnormality in the brain. His attention was thus directed to the condition of the vessels both in the brain and in the rest of the body, and from that time he very frequently, though by no means invariably, found a considerable alteration of the vessels, co-existent with the proper cerebral affection, particularly atheromatous deposition, at one time in the larger, at another in the smaller ramifications. He is hence inclined to believe that a great proportion of the syphilitic affections of the brain are secondary to a primary lesion of the arteries, consequently that it is not in the brain the syphilis is localized, but in its arteries, and that the affection of the brain is merely the result of the obstruction to the supply of blood, that is, of impeded nutrition; and he compares cerebral softening the result of syphilis, with the uncomplicated softening in the aged, adding that there is no disease which so rapidly converts the young and strong individual into an old man as the syphilitic dyscrasia. That hereditary syphilis gives the infant the look of an old man, is well known; but a similar change occasionally takes place in a remarkable manner in adults.

In none has the author found atheromatous degeneration so considerable as in syphilitic patients, and he adds the remark, that after the splenic artery, it is the vessels of the brain which are specially predisposed to such depositions. He has, in fact, sometimes found the cerebral vessels affected, while all the others were healthy. It is, moreover, well known that the organs of circulation are frequently the seat of syphilitic localizations; thus, we are acquainted with syphilitic pericarditis and endocarditis, and with a simple and gummy interstitial syphilitic myocarditis.*

Several authors describe such vascular lesions in patients who have died of syphilitic diseases of the brain; thus Gildemeester and Hoyack speak of them.† Virchow frequently mentions them,‡ and even says§ that syphilitic paralyses may arise not merely from direct affections of the nerves, but also mediately from interruption of the circulation of the blood.

Hence the author deduces the following hypothesis:

* Virchow's Archiv, Band xv. Heft 2, p. 285. † Nederl. Weekblad, Jan. 1854, p. 22.
‡ Virchow's Archiv, Band xv. Heft 3, p. 221. § Loc. cit. p. 291.

"The syphilitic dyscrasia has a tendency to induce an atheromatous lesion of the coats of the arteries, and the vessels of the brain are especially disposed thereto. If it be the minute ramifications which are the seat of this lesion, a moment at last occurs when the passage of the blood becomes impossible, partly in consequence of thickening of the coats of the vessels, partly of the coagula of the blood deposited in the affected parts. By reason of this stoppage of the blood congestion ensues, with rupture of several small vessels already rendered brittle by the atheroma, producing capillary apoplexy. If it be the larger branches which have become atheromatous, a similar pathological process will be initiated, but it will not attain its full development, because a large portion of the brain will be deprived of its normal nutrition, and death will first ensue." (p. 16.)

But it is not Dr. Steenberg's opinion that this lesion of the vessels is the sole, or perhaps even the most frequent, cause of the cerebral anomalies which have been alluded to. He admits that in some cases where the vessels have been found affected the lesion may have been secondary, depending on another condition; for example, pressure on the vessels, in consequence of exudation in the meninges; and this is the view entertained by Gildemeester and Hoyack.

But if we reflect on the above-mentioned pathological changes, and especially on the most common, and certainly the most essential, softening, we shall soon be convinced that none of them have any decided syphilitic stamp; that if we met with such a patient first on the dissecting table, we could not positively say whether his cerebral affection was of syphilitic origin or not; on the contrary, precisely similar lesions are often found in persons who have never been tainted with the syphilitic poison. We shall therefore proceed to examine another affection which is scarcely ever met with except in syphilitic individuals, namely, the so-called gummata or gummy tumours.

By these we understand, as is well known, small, solid, pale tumours, generally of the size of a pea, which may be found in the most various parts of the body, particularly in the skin and subcutaneous connective-tissue, where they are usually larger, and may even attain the size of a nut. They are also frequently found under the mucous membrane, and it is their ulceration which produces the frequently considerable destruction in the throat. Some of the affections of the bones are due to these; they are met with in the muscular connective-tissue, in the liver, the testicles, the lungs; and Lebert asserts that the pulmonary abscesses which occur in syphilitic infants are precisely these gummata which have passed into suppuration; lastly, they have frequently been met with in the brain, and have been described by Bonet, by Ricord (who calls them syphilitic tubercles of the brain), by Cullerier, Lallemand, &c. According to Lebert,* they consist of a rather solid elastic tissue, in which are found, in a finely granular intercellular substance, a number of roundish bodies, neither distinctly cells nor cell-nuclei, resembling tuberculous corpuscles without being identical with them, their similarity depending on this, that the intercellular substance rapidly becomes tough and dense, so that the cellular elements can no longer be fully developed. They may pass into sup-

* *Handbuch der praktischen Medicin*, p. 371.

uration, and we then find, instead of the bodies just described, a granular detritus with a number of distinct pus-corpuscles, and both destroyed and uninjured connective-tissue.

The sinuses of the dura mater and the other vessels of the meninges are frequently quite empty and collapsed; sometimes they are distended with blood; the Pacchionian granulations are frequently highly developed.

The pathological phenomena which the author has most frequently observed in the bones in connexion with syphilitic disease of the brain, have been the characteristic syphilitic necroses or cicatrices. These usually occupy the forehead or the anterior part of the vertex; once only did Dr. Steenberg see the cribriform plate of the ethmoid bone destroyed. In general they were not deep, but had merely removed larger or smaller portions of the outer lamina of the bone. In those fortunately rare cases where parts of the skull occupying its entire thickness had been destroyed, the functions of the brain were normally discharged. The cicatrices after these lesions of the bone all presented the characteristic marks assigned by Virchow—viz., a want of productivity in the centre and excessive productivity at the circumference.

The author appends a table, which we copy, of the changes in the brain and its investing parts, observed in 37 post-mortem examinations, of which 29 are from the General Hospital at Copenhagen, while 8 are borrowed from foreign journals. It is to be observed that most of the patients presented several abnormalities, and that the disease was in general not confined to a single anatomical part of the brain. No abnormality was found in 6 cases;† softening of a portion of the brain existed in 26.

The seat of the softening was: in the left hemisphere, seven times; in the right hemisphere, seven times; twice in the cerebellum; ten times in the left corpus striatum; four times in the right; in the left thalamus, twice; in the left side of the corpus callosum and fornix, once; in the right lenticular ganglion and ciliary plexus, once; in both crura cerebri, five times; in the right crus, once; in the pons Varolii, once. Gummy tumours were met with five times. Atheromata in the arteries of the brain† six times; thromboses of the same, three times; meningeal apoplexy occurred five times; adhesion of the membranes of the brain, four times; osteophytes on the inner surface of the cranium, in three cases; syphilitic ulcers (or cicatrices) of the cranium, in five cases.

The condition of the spinal cord was examined only in 13 cases; in 3 there was well-marked softening; the softening usually occupied so much as would correspond to two or three dorsal vertebrae. One of these patients had never presented proper cerebral symptoms, but after having been for several years syphilitic, suffered from epilepsy, from which he was, however, free during the last year of his life; on

* One of these patients died of small-pox six months after having suffered from apoplectic symptoms, from which he had partly recovered.

† Sometimes in other arteries, without those of the brain being affected.

the other hand, he laboured under incomplete paralysis of motion and sensation in the lower extremities and in the abdomen, very troublesome dyspnoea, and cough without expectoration, and without the lungs or heart presenting any abnormality; moreover, he suffered from considerable debility, had a cachectic appearance, and exhibited a number of tertiary affections. His brain was quite healthy, but the spinal cord was softened at about the second and third dorsal vertebrae. In the second patient, who had likewise suffered to a great degree from epileptiform attacks, it was the cervical portion of the cord which was softened, and the brain was at the same time attacked. The third patient, in whom the softening existed likewise in the cervical portion, had laboured under considerable necrosis of the cervical vertebrae, and in her, too, the brain also was involved.

The lungs were in general in their normal condition; only three times did the author find them tuberculous. Pneumonia is, however, rather frequent among these patients, and not a few of them die of that disease.

In 4 cases the heart was in a state of fatty degeneration, with atrophied walls; twice the valves were atheromatous.

In 3 cases the thyroid gland was hypertrophied.

But the disease which most frequently occurs in old syphilitic patients, and which seems to stand in the closest causal connexion with syphilis, is Bright's dyssemia; in 7 cases the kidneys, and in 5 the spleen, presented distinct Bright's degeneration.

In not a few cases were the kidneys unusually rich in small cysts. The suprarenal capsules were always normal.

An organ which also suffers very frequently in syphilitic dyscrasia is the liver: Dittrich* and Gubler† were the first to give an accurate description of this condition, and to point out its causal connexion with syphilis. According to Virchow‡ we have both a syphilitic perihepatitis and a simple and gummy interstitial hepatitis. Perihepatitis certainly never occurs alone, but is in general partial, surrounding the parts which are the seat of the interstitial hepatitis. The author adds an account of this affection, borrowed from Bamberger,§ referring for a more detailed description to Virchow's paper, in his 'Archiv,' just quoted. Syphilitic disease of the liver usually belongs to the later symptoms; the author, however, quotes an example of its early occurrence, which he remembers to have seen in the clinique of Councillor-of-State Fenger.

The pancreas has almost always been in its normal state; only in 2 patients, who suffered in a high degree from Bright's disease, was it very large, hard, and fragile.

Neither did the intestinal canal present any abnormality dependent on syphilis, though it may of course suffer at the same time from other accidental acute or chronic affections; thus, the author saw it once exhibit marks of catarrhal inflammation in a patient dead of variola;

* *Prager Vierteljahrsschrift*, Bände vi. und vii.

† *Mémoire de la Société de Biologie*, tome iv. 1852. ‡ *Loc. cit.* p. 267.

§ *Virchow's Pathologie*, Band vi. 1, p. 560.

in 3 cases tuberculous ulcers were present, in 1 there was a cancerous tumour around the pylorus.

"Only in one single patient did syphilitic orchitis seem formerly to have existed; in other respects the testicles in all were perfectly healthy; with this Professor Hassing's experience completely agrees, that in Denmark syphilis very rarely attacks the testicles; if I do not mistake, in four years that he has presided over the syphilitic department of the General Hospital, only two persons have laboured under such an affection, and yet during that period about 1500 syphilitic patients were admitted. It is well known how frequent such affections are in other countries—for instance, in France; this is one of many examples of the fact, that syphilis occurs variously modified in different countries." (p. 34.)

In two cases the ovaries contained numerous cysts. Cicatrices of chancres were frequently observed upon the genitals.

The glands in the groins, elbow-joints, neck, &c., were often swollen and hard.

Considered in reference to its *symptomatology*, syphilitic brain disease presents itself under two forms; the first, the centripetal paralysis, being characterized by the gradual advance of peripheral nervous symptoms. In addition, we have signs which point more distinctly to the brain as the seat of the disease, for example, vertigo, intolerance of disturbance or of noise, impairment of memory. The paralysis extends to the muscles of the bladder and rectum, producing involuntary evacuations. But while unilateral paralysis of the face is almost constant in the second form, we scarcely ever observe it in this more chronic variety. On the other hand, the muscles which govern the motions of the eye, and those which co-operate in the articulation of words, are frequently implicated in the first form. Thus paralysis of one of the muscles of the eye, particularly of the external rectus, is often an early and even long a solitary symptom, soon perceived by the patient himself, on account of the strabismus and double vision it produces. A change of voice, more gradual in the first, more rapid and complete in the second form, is a very frequent attendant on both varieties. Connected with speech we have three modifications of lesion: 1. Weakness of the muscles, producing a thick and stammering articulation. 2. Disinclination to give answers, which are as short as possible, and resemble those of a drunken man. 3. The strange substitution not merely of whole words, but even of complete sentences, for what the patient intends to say. Another symptom is what Landry has called "paralysis of the feeling of muscular activity," or the morbid condition in which a patient can regularly perform every movement so long as he can follow it with the eye, but the moment he closes his eyes, or it becomes dark, even if this take place when he has half completed so simple a movement as bending the arm, he cannot continue it. Duchenne, who, the author believes, was the first to direct attention to this point, has termed the function which is here lost, "muscular consciousness." Professor Schroeder van der Kolk has shown "that throughout the body, the sensitive branches of a mixed nerve run to the part of the skin which is moved by the muscles receiving motor filaments from the same nerve trunk," or, in other words, that "a

spinal nerve gives its motor branches to the muscles as instruments of motion, and its sensitive branches to the part moved.* Paralysis of these sensitive filaments, the motor branches remaining intact, would evidently produce the lesion in question.

The author alludes to cases where mistakes similar to those of speech above mentioned are made in writing. There is something very singular in the condition of the brain under such circumstances; thus we have ourselves seen a gentleman labouring under paralysis, capable of writing correctly, but unable to read in consequence of miscalling the letters.

The second, or apoplectic, is the principal form of this disease; it is of much more frequent occurrence, is much more destructive to the patient's bodily and psychical welfare, and is also that which constitutes the termination of the first described variety.

These syphilitic affections of the brain may manifest themselves, whether only a few months or many years have elapsed since the individual was first tainted with the poison, whether the previous symptoms were violent or so weak that they were scarcely observed, whether they advanced in an uninterrupted series from organ to organ, until at length the brain became the seat of the disease, or whether years have passed away, during which the poison has lain in a deceptive slumber.

The author concludes his chapter on the symptomatology of the disease with the following supplemental table of the relative frequency of the several forms of paralysis: In 26 patients, the limbs of the right side were paralysed; in 21, those of the left; in 1, the right arm and left leg were paralysed; in 2, the left side of the face and the right extremities; in 4, the paralysis shifted from one limb to another; in 3, the left arm alone was paralysed; in 3, the right leg alone; in 1, the left leg alone; in 20, both lower extremities were paralysed; in 34, the evacuation of urine was abnormal; in 18, the faeces were passed involuntarily.

As to the *etiology* of the disease—is the name which is given to it correct? Some deny that the cerebral disease in question has any connexion with syphilis, and attribute its development to the use of mercury. Others admit its dependence on syphilis, but only so far as to recognise in syphilitic patients a tendency to cerebral affections, while they deny our right to denominate such a form of disease "the syphilitic brain disease," inasmuch as it differs in no respect from cerebral affections depending on any other cause. The most convincing proof lies, however, in the result of treatment: "In the only cases of recovery," observes the author, "which I have myself witnessed, or have found on record, success has been due especially to anti-syphilitic treatment; and a little lower down he adds, "there is scarcely any other chronic disease against which the physician can proceed so actively and with such good effect as against syphilis. Our power over chronic diseases of the brain, how great is it!" As to the first objection, that the disease is due not to syphilis but to mercury, the author shows that of

* On the Minute Structure and Functions of the Spinal Cord. London, New Sydenham Society. 1869, p. 6, and p. 7 note.

89 patients treated in the General Hospital, 48 used mercury; respecting 16 the journals give no information in this respect; and of 25, it is ascertained that they never used mercury, and were never exposed to the action of that metal before they presented distinct signs of an affection of the nervous system.

"If we now consider that, with scarcely an exception, all the physicians in Denmark treat the secondary cases which occur in their practice with mercury, that the knowledge of syphilitic symptoms and their danger is generally diffused throughout the middle classes in Copenhagen, to which most of the patients belonged; that these patients could with ease, and for the most part without payment, procure admission to hospital, it is most probable that the number of syphilitic patients who have been treated in Denmark with mercury, so far exceeds that of those who have not taken the drug, that the figures I have given do not merely show satisfactorily that the cerebral affection was not due to mercury—for this a single case where mercury had not been employed would be sufficient—but also that it is much more probable that the syphilitic patient who has been treated with mercury shall remain free from this cerebral affection, than he with whom this medicine has not been employed."

Hence Dr. Steenberg infers that "syphilis is the principal cause of this cerebral affection; and that if a patient has never been syphilitic, he will never be attacked by such a disease."

In this proposition the author goes, we think, a little too far; while we freely admit that the numerous cases he has so ably detailed, and of which he has given at the end of his volume so very clear and useful a summary, are quite sufficient to prove that a large number, perhaps the great majority of such cases, are connected with, as their principal cause, the poison of syphilis, latent or otherwise, in the system, we see nothing in their origin, symptoms, course, or pathological results, sufficiently characteristic to distinguish them from cases which not unfrequently occur where there can be no suspicion of the existence of such a taint. But in forming our opinion as to the presence or absence of the syphilitic poison, we must not forget how "very rarely it is expelled from the system it has once affected," and that Ricord has shown "that syphilis may be slumbering in the constitution even for forty years without exhibiting the least trace of its presence, and may then suddenly break out in all its power."

In 89 cases investigated by Dr. Steenberg, 17 patients had suffered from primary, secondary, and tertiary syphilis; 48 from primary and secondary, not from tertiary; 6 from primary and tertiary, not from secondary; 3 from primary, not from secondary or tertiary; 14 from tertiary, their having laboured under primary and secondary symptoms being unknown. In one patient Dr. Steenberg was unable to prove that any syphilitic symptom had pre-existed, but both her previous mode of life, the course of the disease, and the pathological changes found upon dissection in the brain, appeared to justify her being included in this category.

Since the existence of the primary and secondary symptoms there had elapsed in one patient thirty-five years; in 6 patients, between thirty and twenty years; in 11, between nineteen and ten years; in 22, be-

tween nine and two years; in 16, "several" years; in 10, one year or some months; in 8, the secondary symptoms were still present.

Of the 14 patients who denied having had primary or secondary syphilis, 8 could give no information at all as to the time when the then present tertiary symptoms had appeared; 1 had had them for eleven years; 4 for about three years; 1 only for some months.

In the cases borrowed from foreign journals, primary, secondary, and tertiary syphilis had existed in 6 patients; primary and secondary, not tertiary, in 11; primary and tertiary, not secondary, in 3; tertiary, not primary or secondary, in 2; congenital syphilis in 2; in 1 case the history was quite defective.

Since the existence of primary and secondary syphilis there had elapsed: in 6 patients, from twelve to six years; in 5, from five to two; in 5, one year or some months; in 7, no time was stated.

In the two cases where only tertiary symptoms are mentioned, cicatrices alone after these remained, likewise without any time being given.

The author gives a list of the special constitutional symptoms which either coexisted with or preceded the cerebral affection; the conclusion he draws from a consideration of this catalogue is, that nearly all the forms of syphilitic disease may be followed by nervous affections.

Syphilis is the essential cause of this cerebral disease, but as every one who has once been syphilitic does not necessarily become paralysed in mind and body, Dr. Steenberg proceeds in the next place to inquire on what this difference depends! This important question must, for the present, be left in part unanswered. The author, however, points out that it does not depend on difference in the virus, for he has known several married couples where the husband has contaminated the wife, or *vice versa*, so that both were infected with the same kind of pus, and yet the brain of one has become diseased, while the other has escaped.

"The patient, however, is never at a loss upon this subject, the malignity of his syphilis is due to the negligence or ignorance of his former medical attendant; the latter recognised the character of his disease either too early or too late; he gave him either too much or too little mercury, or, at least, he did not keep him long enough in bed, or he allowed him to eat something which was not fit for him; in a word, the patient is so willing to ascribe all the blame to his physician, that it is only surprising that he does not also give him the credit of having got him his primary chancre."

Seventy-three patients were of the male and 41 of the female sex; but the preponderance of males is simply the result of the fact that they are in general more exposed to the contagion of syphilis than females are.

With respect to age, 1 patient was sixty-nine; 17 were between fifty-nine and fifty; 25 between forty-nine and forty; 39 between thirty-nine and thirty; 21 between twenty-nine and twenty; 2 were nineteen; 1 was two; and 1 was one year old. In 7 cases the patients' ages were not stated.

Age would, therefore, seem to have *per se* no influence upon the disease; the foregoing would show only that the latter occurs some

years after the individual has been contaminated; it is between twenty and forty years of age that people generally expose themselves to contagion, and accordingly we see that somewhat later the disease is at its maximum.

Neither does the patient's occupation seem to exercise any decided causal influence. From an enumeration made by the author, it would appear that all the classes which usually resort to hospitals are represented in about the same proportion; prostitutes alone predominate, which is a natural result of the fact that almost all of that class at one time or another become syphilitic.

In reference to diagnosis, Dr. Steenberg observes:

"When a patient, who has not yet passed the age of virility, who does not present any evidence of any affection of the heart or arteries, who has not suffered from any considerable injury of the head, or from a disease capable of developing embolism or thrombosis of one of the cerebral vessels, is suddenly attacked with an apoplectic seizure, his malady may undoubtedly be diagnosed as a syphilitic encephalopathy, if the symptoms of syphilis co-exist or have recently gone before; nay, even if many years have elapsed since the syphilitic dyscrasia last manifested itself."

In like manner, if the affection does not assume the apoplectic form, but occurs, under similar circumstances, more insidiously as a centripetal neurosis of a particular part, there can be no doubt that the symptoms are due to a syphilitic lesion of the nervous system. The author adduces examples to show at what extremes of youth and old age syphilis may be acquired, a part of his subject into which it is unnecessary for us at present to enter.

The cerebral disease which occurs most frequently, and at the same time presents the greatest similarity to the syphilitic encephalopathy, is true apoplexy; the signs of congestion of the head are, however, usually more prominent in the latter. If the patient does not die immediately after the attack, which fatal result very seldom happens in the syphilitic seizure, the absence of symptoms due to the pressure of extravasated blood, particularly of long-continued and well marked loss of consciousness and general paralysis, will enable us to decide with tolerable accuracy that no effusion of blood has taken place in the brain.

The syphilitic brain disease is, or at least ends by becoming an encephalomalacia; the distinction between it and the non-syphilitic disease must be etiologically deduced.

The author enters at some length into the consideration of the diagnosis between this disease and saturnine paralysis and saturnine brain disease, and also between it and general paralysis.

The prognosis of the disease is in general unfavourable. The length of time after which a relapse may occur, creates a difficulty in arriving at any very accurate conclusions on this point. Dr. Steenberg observes:

"I have reckoned all those patients as cured, whose symptoms had completely ceased at the time of their discharge, and of whom I subsequently lost sight; and all those improved, in whom the results of the attack—for example, diminished power of movement in one of the extremities—were not, indeed,

entirely removed, but did not present any indication that the morbid process was progressive. It will be seen that in the cases borrowed from abroad, the prognosis is much more favourable than in my own; this is due especially to the fact, that I have taken most of these cases from French authors, and of these it is generally true that they have the opportunity of observing a patient during the course only of a part of the disease, and subsequently lose sight of him, and besides, Frenchmen are particularly disposed to regard the results of their treatment with the most sanguine eye; if the patient does not die in their hands, they write with great readiness, "Cured," upon his card of dismissal. In the cases published by German, and partly also by English writers, I have in general found the report either accompanied by the account of the post-mortem examination, or terminating with the only too often true remark, that the treatment was unavailing. Perhaps the prognosis is really worse in proportion to the coldness of the patient's residence, as we know that syphilis is much more obstinate with us than in the southern countries of Europe." (p. 221.)

Dr. Steenberg gives the following as the results of treatment at the General Hospital: "Cured, 7 males, 6 females; improved, 9 males, 6 females; uncured, 20 males, 10 females; died, 16 males, 15 females." Of those treated abroad there appear: "Cured, 10 males, 2 females; improved, 2 males; uncured, 4 males; died, 5 males, 2 females."

Among the patients who died in hospital, the periods which elapsed between the commencement of the disease and its fatal termination were as follows:

"In 2 cases, from two to three days; in 2, from sixteen to twenty days; in 7, from one to three months; in 7, from four to eleven months; in 8, from one to four years; in 1, over six years. In 2 instances no information could be obtained as to the commencement of the disease. The average duration of the malady would therefore appear to be about one year."

As to treatment: "*Causa sublatâ, tollitur effectus*," syphilis is the cause of the disease, could we therefore completely remove the former, or repel it to organs where it might lie concealed without causing direct injury, we should also be able to remove the cerebral affection. But unfortunately, as syphilis has in other respects in the course of time assumed another character, it now frequently exhibits a much greater power of resistance against the remedies which formerly acted powerfully and rapidly, and this is especially true of the syphilitic disease at present under consideration.

But if a patient comes under treatment while the cerebral affection is still in its earliest stage, the employment of anti-syphilitic remedies will not only be fully justified, but we shall most frequently obtain a satisfactory result from their use; still we must not forget that the course of the disease is intermitting, at first even perfectly intermitting, and we must not ascribe exclusively to the remedies employed the improvement which is perhaps only the consequence of the nature of the disease. Whether we shall employ mercury or iodine must depend partly upon the character of the other coexistent or preceding syphilitic symptoms, partly on the earlier treatment, mercury being indicated if this remedy has not before been employed, or if it has not been given in sufficient quantity, or for a sufficient time; in the opposite

case iodine is applicable, and its use may, as is well known, be repeated as often as may be necessary.

It is almost a matter of indifference which of the various preparations of mercury we adopt; but the author believes experience to be in favour of the rule to treat the earlier symptoms with calomel, and the later, particularly if calomel has been before employed, with sublimate. The ordinary mode of exhibiting calomel at the General Hospital is to give a pill of one grain morning and evening until the symptoms disappear. Dr. Steenberg quotes the employment of mercurial inunctions to the head after the removal of the epidermis by a blister, by Dr. Read of Belfast,* as having been attended with considerable success, inasmuch as of three patients with well-marked cerebral symptoms, two were completely cured, and the third was much benefited.

The author alludes to a contra-indication to the use of iodine:

"In cases where a remission of the nervous symptoms occurs simultaneously with the formation of a tertiary sore, the use of iodine ought not to be continued until the ulcer is completely healed, because I believe that I have seen instances of such an ulcer having acted as a natural issue in removing the tendency to the localization of the dyscrasia from the brain."

The filthy and immoral process of syphilization "has also been tried in this disease, but without any particular success. Gjör, however, quotes a case of recovery after syphilization had been continued for eight months."†

When the disease is further advanced, and no other syphilitic symptoms are present, the specific treatment will be no longer indicated. Our object now should be to strengthen the system, and to raise the sunken nervous energy. Nourishing diet, open air, the avoidance of every violent mental or bodily exertion, or psychical emotion, together with quina or iron, are best adapted to fulfil the first indication; while for the second we should have recourse to those means which act more immediately upon the nerves—viz, strychnia, valerian, arnica, issues, blisters, moxas, electricity, baths (cold and warm, Russian, with or without the douche), frictions with counter-irritants, either along the spine or on the paralyzed parts. Aperients will, of course, often be required. Opium, camphor, musk, &c., will, it is needless to say, also be occasionally indicated.

The extent to which we have drawn from Dr. Steenberg's volume, and the regularity with which we have abstracted something from every chapter, will be the best proof of our opinion of its value. We have only to add that his work abounds in evidences of the practical good sense and straightforward truthfulness so characteristic of our brethren in Sweden, Norway, and Denmark.

The work of Dr. Lagneau, fils, is not, like that of his Danish confrère, confined to lesions of the brain. It embraces a much wider field, including the syphilitic pathology of the entire nervous system, with its anatomy, symptomatology, diagnosis, prognosis, and treatment.

* Dublin Quarterly Journal of Medical Science, vol. xiii, p. 22.
† Norsk Magazin for Lægeridenskaben, Bind xi.

Before speaking of the encephalon, the lesions of the cranium are considered under the heads of suppurative osteitis of the vault of the skull, both external and internal, suppurative osteitis of the face and of the base of the skull, and syphilitic cranial tumours or exostoses.

Internal suppurative syphilitic osteitis is, according to M. Bedel, of rarer occurrence than the external variety, by reason of the preference of caries for affecting superficial bones and those in which the spongy tissue predominates. The author, however, suggests that the lesion may commence in the internal table of the skull more frequently than the data furnished exclusively by necroscopic examination would lead us to suppose, as the latter most frequently takes place at a period of the disease too advanced to enable us to determine what part of the bone was first attacked, for often both tables are then altered, and perforations more or less extensive have occurred. Occasionally there has been found on the internal surface of the bone "a flabby, grey, very fetid, non-diffuent substance, resembling a thick pap, which it is impossible to remove completely with the forceps and spatula." In other instances, concrete membraniform matters have been met with, which might either be the results of a purulent effusion, or might seem destined to protect the encephalon, and by their ulterior cartilaginous transformation to supply the place of the destroyed portion of bone. Suppurative osteitis of the internal surface of the cranium appears rather to determine the molecular destruction of the bones—that is to say, caries—than to produce fragmentary mortification of the same, or necrosis.

The author next considers the pathological anatomy of the lesions of the meninges and encephalon, under the heads of alterations of the texture of the meninges, tumours of the meninges and of the encephalon, vegetations, and alterations of the structure of the encephalon.

In treating of the symptomatology of encephalic syphilis, Dr. Lagneau first speaks of the symptoms presented by the cerebral nerves; headache is of very frequent occurrence, and in degree is usually intense. Its peculiar character is to increase towards evening, to become very violent during the night, and to diminish in the morning, continuing slighter all day. The nocturnal exacerbation is in itself sufficient to attract the attention of the practitioner to the probability of a syphilitic complication. In some exceptional cases the headache seems to have predominated during the day.

Independently of want of sleep caused by osteocopic, rheumatic, or other pains, by pruritus, &c., there occasionally exists, in cases of long-standing syphilis, a species of insomnia comparable to that which, according to Georget, manifests itself at the commencement of all cerebral irritations, sometimes announcing their approach long before. Sigmund has of late years studied the insomnia of chronic syphilis, and more recently M. Bouchut has described, under the name of *neurosisme*, a particular nervous state which, supervening upon various general morbid conditions, recalls to mind the hyper-excitability described by Benjamin Bell.

M. Yoaren sums up the characters of syphilitic headache as consisting in,—1, its violence; 2, a more or less prolonged duration; 3, the nocturnal recurrence or exacerbation.

The general nervous symptoms more especially proper to encephalic syphilis consist in alterations of intelligence, of sensibility, and of motility.

Mental Alienation.—Of 450 cases, Esquirol refers 9 to syphilis. Frequently the intellectual faculties, instead of being more or less perverted, are rather abolished.

The alterations to which the general sensibility is liable, under the influence of syphilis, are of two kinds, producing either its exaltation or its abolition. The author is not aware that exaggeration of the general sensibility, determined by encephalic syphilis, has been observed; but the simultaneous existence of pains in regions paralysed in consequence of a syphilitic affection of the nervous centres has frequently been witnessed. Pain is thus sometimes manifested, while the general sensibility is notably diminished. Bayle's patient, for example, experienced pains and numbness in the legs, the sensibility of which was greatly lessened. Cases of this kind, as M. Landry has recently shown,

"Find their explanation in the fact that the pain due to an organic lesion is referred by the patient to the peripheric parts to which the nervous filaments are distributed, instead of being felt in the seat of the organic lesion, which may at the same time interrupt the continuity of the nerves, and fully account for the peripheric anesthesia."

The alterations of motility are likewise of two kinds, according as this faculty is abolished or perverted. To the former class belong the various forms of paralysis of movement, to the latter the several varieties of convulsions.

Differential Diagnosis of Encephalic Syphilis and other Analogous Affections.—The elements of this diagnosis are usually derived from the local or general nervous or other symptoms, and from the patient's antecedents. The efficacy of a treatment regarded as specific has also been held by many to be a proof of the syphilitic nature of the disease they may have been called upon to treat. Among the local symptoms which, by the fact of their coexistence with nervous accidents suffice to reveal the syphilitic nature of the encephalic affection, are caries, necrosis of the cranium or face, often inducing the destruction of the os frontis, of the bones of the nose, of the ethmoid, &c.; profound organic lesions, which at the same time that they manifest themselves externally with characters decidedly syphilitic, act within the skull or a part of the encephalon. To these lesions we must add the several tumours developed on the external surface of the cranium, such as gunny tumours, periosteos, exostoses, &c.

The paralytic form of encephalic syphilis is frequently of a progressive type, which MM. Sandras and Lucas Championnière regard as characteristic; the convulsive or epileptic form usually appears at a period subsequent to puberty, contrary to what is ordinarily observed in non-syphilitic cases of epilepsy. Besides the diagnostic importance

connected with the late appearance of the malady, Cullerier is of opinion that in an individual who has previously had syphilis, when no vivid impression or moral affection has preceded the first attack, we should be justified in adopting an anti-venereal line of treatment.

Syphilitic chorea, too, has appeared at a more advanced age than that at which ordinary chorea generally manifests itself.

The prognosis in encephalic syphilis is usually very unfavourable, for if anti-syphilitic treatment be not employed, or if it be adopted too late, death is frequently the result. Of 147 cases enumerated by the author, 57, or nearly two-fifths, proved fatal.

"It is well to remark that the nervous accidents observed in the course of this affection, although involving a prognosis as formidable as those not attributable to the same cause, if the progress of the disease be not opposed, may nevertheless be considered by the practitioner as less serious; for under the influence of timely anti-syphilitic treatment, they are more easily curable than the latter, against which too frequently the most varied, most energetic, and best-directed medication is often powerless." (p. 173.)

The treatment adopted in syphilitic affections of the nervous system is most frequently exclusively medical; occasionally, however, these diseases require the intervention of surgical aid.

The medical treatment consists chiefly in the administration of mercury, iodine, &c. Surgically, the trepan has been employed, but the author properly observes, that

"Before deciding on having recourse to this means, we should remember that by the efforts of nature, sometimes spontaneously, often under the influence of medical anti-syphilitic treatment, considerable osseous fragments are exfoliated, as Biet records of the entire frontal bone; and that M. Petrequin mentions a similar curious example relating, if not to the entire thickness of this bone, at least to the whole of its external table; we must also bear in mind that in like manner large portions of bone are insensibly eliminated through the destructive effects of a vast caries, a remarkable instance of which is presented in the case of the woman treated by MM. Cazenave and Dufour."

Surgical intervention is required also for the extraction of more or less considerable, more or less moveable fragments, the exfoliation of which is tardy. Such interference is, however, justifiable only when the gravity of the symptoms renders it impossible to await the spontaneous exfoliation of the necrosed bone.

The author, in concluding his observations on the pathological anatomy of the optic nerves, remarks that

"If we may say with Marjolin, 'that it does not appear to be demonstrated that the venereal virus is capable of acting directly upon the nervous system of the eye, so as to extinguish the sensibility of this organ;' which is not surprising, for no microscopical investigation has been made, so far as I am aware, to throw light upon this point of textural pathological anatomy; we may also see from the foregoing that syphilitic organic lesions capable of directly or indirectly affecting the vision are numerous and varied. I may add, moreover, that the recent work of Von Graefe on syphilitic affections of the eyes reveals various lesions involving either the optic nerve itself, or the constituent parts of the eye. Besides choroiditis, of which M. Laroyenne has recently reported a case, the Berlin ophthalmologist describes a diffuse exudation in the retina, an atrophy of the optic nerve and of its papilla, with

diminution of the calibre of the central vessels; circumscribed abscesses or partial softening developed in the central course of the optic nerve, &c." (p. 223.)

In their intracranial course, the auditory nerves may be affected by all the tumours, inflammations, and effusions which may occur at the base of the skull.

Occasionally, caries, instead of determining a free communication with the exterior, confines itself to opening the cavity of the tympanum, and so establishing a communication, through the medium of the Eustachian tube, between the mastoid cells and the pharynx, recognisable during life by means of injections. Sometimes osteitis of the temporal bone appears to induce its hypertrophy. "Paralysis of the auditory nerve," remarks M. Bedol, "often commences with osteitis or caries of the mastoid process, extending, by proximity, to the petrous bone. M. Ménière quotes several cases of the kind, some of which were remarkable for considerable thickening of the perichondrium of the ear. In some cases, too, the temporal bone of one side appeared thickened and hypertrophied." M. Courty also mentions a man affected with caries of the petrous bone, with deafness, due to a syphilitic cause.

Obturation of the Eustachian tube is, however, according to the author, the lesion which appears to be the most common cause of syphilitic deafness.

The syphilitic affections of the cranial nerves of the eighth pair furnish but few facts worthy of notice.

"Occasionally an alteration of taste coincides with profound syphilitic ulcerations of the pharynx and mouth, and with considerable submaxillary glandular congestions, as if the gustatory nerves were indirectly affected by the extension of the inflammation accompanying the ulcerations, or by the pressure of the inflamed glands. Cullerier's patient presented this coincidence of an alteration of taste and of serious lesions in the bones and in the soft parts of the buccal, pharyngeal, and nasal cavities. It is evident that organic lesions analogous to those observed by M. Davasse in the patient Pierre Verdier, may also produce serious alterations of the general or gustatory sensibility of the tongue; for in this patient the tonsil, the anterior palatine arch, the insertions of the levatores palati at the base of the skull, the corresponding portion of the styloid muscles, a portion of the petro-pharyngeal aponeurosis, and of the right lateral wall of the pharynx, no longer existed.

"In some cases the abolition of taste, as in the epileptic and amaurotic patient of M. Rut-Oyez, and in the hemiplegic patient of M. Briquet, seems to depend upon an intracranial lesion. The same is occasionally true of the general sensibility of the tongue; the hemiplegic woman under the care of Lallemand and M. Verdier experienced tingling and numbness in one half of the tongue, as well as in several other regions." (p. 319.)

Probably under the influence of the divisions of the eighth pair, spasms have been observed in syphilitic patients, exhibiting themselves in the pharynx, in the larynx, or in the muscles of the back of the neck, resisting the most varied treatment, and yielding only to medicines regarded as anti-syphilitic. Some instances of this kind appear to be merely the first epileptic manifestation of encephalic syphilis, analogous to those described by Marshall Hall under the denominations of laryngismus, oedæmus, sphagismus.

"Fits of suffocation may also be the result of syphilitic lesions of the trachea, whether ulcerative or cicatricial. M. Moissenet recently read before the Société de Médecine des Hôpitaux a very curious case of syphilitic cicatricial constriction of the inferior part of the trachea and of the left bronchus, producing almost every night fits of suffocation closely resembling those of stridulous laryngitis." (p. 321.)

The remaining sections of Dr. Lagneau's work are devoted to the consideration of syphilitic affections of the hypoglossal nerves, of the spinal nerves of the neck, of the upper extremities and trunk, of neuralgic affections of the genitals, and of syphilitic affections of the sciatic and splanchnic nerves.

We commenced this article with a brief abstract of the very interesting history of the literature of syphilitic neuroses given by MM. Léon Gros and Lancereaux in their opening chapter; we cannot better close our notice of this class of diseases, or more profitably sum up the whole subject, than by reproducing some of the "conclusions" with which they terminate their volume.

"Nervous affections," observe these writers, "may be developed at any period of constitutional syphilis.

"These affections bear sometimes separately, sometimes simultaneously, upon the three great functions of the nervous system: sensation, motion, and intelligence." [Might they not have added a fourth—nutrition?]—

"Very varied in their symptomatic forms, they may simulate the majority of the neuroses and affections symptomatic of an alteration of the nervous centres and cords.

"Syphilitic nervous affections are direct or indirect.

"Direct nervous affections may exist without organic lesion appreciable to our methods of investigation. Most frequently, however, they depend on a material lesion of the nervous system, the latter being, equally with the other organic systems, liable to attacks of the syphilitic virus.

"The indirect nervous affections are symptomatic of syphilitic lesions situated in the organs or tissues adjoining the nervous system.

"Syphilitic nervous affections without appreciable material lesion are divisible into—neuroses of sensation, of movement, and of intelligence.

"Neuroses of sensation include *rheumatism, headache, neuralgia, anaesthesia, and paralysis of the organs of sense.*

"Neuroses of movement comprise: *general convulsions* capable of simulating epilepsy and clonus; *partial convulsions* capable of simulating hemichorea, &c. They comprise, also, *general or partial paralysis.*

"The neuroses of the intellect are allied to hypomania or monomania (*syphilis lobii*).

"*Rheumatism* often marks the commencement of constitutional syphilis; it may occupy all the regions of the body, especially the head, the neighbourhood of the joints, and the muscular masses.

"It is less constantly nocturnal than osteoepic pains.

"These latter are most frequently located in the head; they constitute a tertiary phenomenon *par excellence.*

"The *insomnia*, frequent in children affected with hereditary syphilis, may depend upon the existence of this kind of pains.

"The most ordinary varieties of *syphilitic neuralgia* are: *trifacial neuralgia, gastralgia, and sciatica.* They most commonly manifest themselves in the course and towards the decline of the secondary period. When they supervene at a later period, they are in general referrible to an organic lesion.

"Anaesthesia does not appear to exist as a sole nervous manifestation due to the syphilitic diathesis.

"Paralysis of the organs of sense very rarely exists without appreciable lesion.

"The general convulsions which simulate epilepsy recur in fits, preceded by vertigo and accompanied by loss of consciousness. They are distinguished from epilepsy: 1. In that the attacks are preceded by headache during a longer or shorter period. 2. By the appearance of the first attack in adult age. 3. By the absence of the ordinary causes of epilepsy. 4. By the prompt and permanent cure effected by well directed specific treatment.

"The nervous affections without appreciable lesion may supervene at any period of syphilis.

"The material alterations, depending on the action of the syphilitic virus on the nervous system, consist sometimes in a simple disturbance of the circulation (congestion, anaemia); sometimes in inflammation or softening of the nervous tissue (meningitis, encephalitis, ramollissement, retinitis); sometimes in the formation, in the substance of this tissue, of plastic deposits, which compress it and disturb its functions (indurations, gummæ, exudations on the membranes of the eye).

"The nervous centres, and preferentially the more vascular portions of these organs, are the more special seat of inflammation and softening.

"The syphilitic nervous affections depending on a deposit of plastic matter disseminated or agglomerated in the nervous substance, in general appear very slowly, five or six, and even twenty years after the primary accident. They belong to the quaternary period of syphilis, or visceral syphilis.

"The nervous affections symptomatic of syphilitic alterations of the neighbouring tissues appear sometimes in the secondary, but most frequently in the tertiary period.

"Syphilitic nervous affections are not unusual phenomena, metamorphoses of syphilis. They belong to this disease in the same manner as all other manifestations usually recognised as syphilitic.

"The accessory causes which appear to favour the localization of syphilis in the direction of the nervous system, are all those which act in over-exciting or in depressing the nervous force (nervous temperament, excesses of all kinds, mental fatigue, moral causes, &c.).

"Syphilitic nervous affections manifest themselves by symptoms almost identical with those of the majority of nervous affections. This absence of all pathognomonic character seems to be one of the causes why they have hitherto been unrecognised and confounded.

"Their diagnosis is, however, almost always possible. It rests—1. On the antecedent or simultaneous existence of one or more accidents belonging to the syphilitic diathesis. 2. On the appearance of the affection at an age different from that at which it is usually developed. 3. On the absence of the ordinary causes of nervous affections. 4. On the absence of any sign indicating that the nervous affection ought to be referred to another cause. 5. On the regularity of the appearance of the nervous affection at a given period of the general disease. 6. On the successive appearance of numerous and various nervous phenomena, giving to the affection, in this respect, certainly, a special character. 7. On the inefficacy of all medicines usually considered beneficial in nervous affections. 8. On the favourable result of specific treatment. 9. On the habitual relapses when the treatment is not long continued. The combination of several of these characters will produce, in the great majority of cases, an almost absolute certainty.

"The prognosis in syphilitic nervous diseases varies according to the general state of the patient, the absence or presence of appreciable material lesions of the nervous system, according to the part of this system which is the seat of the lesion, &c.

"The affections without appreciable lesion usually get well notwithstanding the apparent gravity which the symptoms may present.

"Of all the affections with lesion of the nervous substance, the severest are those dependent on inflammatory action.

"Affections of the exudative type, and those which are symptomatic of lesions of the osseous and fibrous tissues, in themselves less severe, become most frequently fatal in consequence of inflammatory complications.

"Relapses, so frequent in all affections with lesions, present each time a greater severity.

"The treatment of syphilitic nervous affections is that of any other manifestation of the same diathesis.

"Preparations of mercury and iodine should be employed, separately or simultaneously, according to the period of the disease, the severity of the affection, and the general state of the patient.

"Mercury appears to be more specially indicated in the congestive and inflammatory forms, iodide of potassium in the exudative or plastic variety.

"The efficacy of the specific treatment will often be enhanced by the employment of adjuvants fulfilling a special indication. Such are antiphlogistics in case of the presence of acute inflammatory symptoms; tonics, chalybeates, and preparations of sulphur in chloro-anæmia and cachexy; electricity in paralysis with or without atrophy."

In one respect, the three books whose titles stand at the head of this article strongly resemble each other—namely, in the large number of cases on which the statements they contain are based. This is as it should be. A subject so important as that of which they treat, which although by some writers early recognised, has not, during a long series of years, attracted the attention it deserved, and may to a certain extent be considered in the light of a new subject, requires the support of an extensive induction. In these works, therefore, may be found the most reliable as well as the most recent and the fullest information we possess respecting the syphilitic diseases of the nervous system.

REVIEW II.

El Siglo Médico. Periodico de Medicina, Cirugía y Farmacia, Consagrado a los Intereses Morales, científicos y profesionales de las Clases Médicas. Se publica todos los Domingos a Madrid.

The Medical Age. Periodical of Medicine, Surgery, and Pharmacy; Consecrated to the Moral, Scientific, and Professional Interests of the Medical Classes. Published every Sunday in Madrid. 16 pp. large 8vo.

Our last number of the Review contained the concluding part of an interesting article upon the History of Medicine in Spain, in which but slight allusion was made to the present condition of medical practice, or the various modern appliances for teaching the medical art now existing in the Iberian Peninsula. Taking the Spanish medical periodical mentioned above as our guide, and fortified by observations made during two recent visits to Spain, our purpose now is to place our readers in possession of such information as may help them to form a just idea of the advance which medicine and medical education have there made

and of a dark-brown colour, at its larger and smaller "culs de sac;" the dark colour caused by a thin layer of blood effused betwixt its inner and middle coats. Eleven ounces of a thick greyish fluid in the stomach. Slight redness of the mucous coat of the duodenum at its commencement.

On a subsequent chemical examination with the same assistance as in the last case, distinct indications of strychnine were readily detected in the contents of the stomach, and in the matters vomited during life; as also, though less distinctly, from the blood and from a portion of the liver.

CASE VI.—*Poisoning by strychnine: accident: recovery.*—Early on the morning of the 21st of last October, William H—, a boy of nine years, on getting out of bed, laid hold of some bread and butter on which a part of one of those powders sold as "vermin killers" had been spread on the previous evening by his mother, with the intention of destroying rats, and was in the act of eating it when the circumstance was observed and his mouth forcibly emptied. The remainder of the bread and butter was got rid of by an emetic speedily afterwards, previous to which, however, he suffered from convulsive twitches of the face and arms, the pulse being at the same time small and wiry; these symptoms ceased on the full action of the emetic.

CASE VII.—*Inhalation of quicklime: œdema of the glottis: tracheotomy: recovery.*—On the afternoon of the 25th of August, 1860, a mason's labourer, in Aberdeen, annoyed at the gambols of some youths around a heap of newly-slaked lime at which he was at work, seized hold of A. M—, a boy of seven years, and buried his face for an instant in the lime. The consequence was that the boy's nostrils, mouth, and throat were filled with the quicklime, and he seemed suffocating till the speedy removal of it from his mouth and throat afforded relief.

This, however, did not prove permanent, as the boy's breathing became soon after again difficult, apparently from closure of the glottis, the mouth and throat being intensely red and a good deal swollen. About five hours after the injury, the late Dr. J. Williamson, who had charge of the case, fearing fatal asphyxia if relief were not obtained, called in Professor Pirrie to perform the operation of tracheotomy, which was effected under chloroform. It was not, however, till six days after the operation that the breathing was so far established through the natural opening, as to permit of the removal of the canula, after which the wound healed readily.*

* It may not be generally known that quicklime acts on some of the lower animals as a speedy poison. Some years ago I was called on to determine the character of a moist mass of extermal and quicklime, the eating of which, laid down for the purpose, had, in a few hours, destroyed eleven domestic fowls. It may not be out of place to add here, that tabbe salt is used for the same purpose, two cases of which have lately occurred in this quarter. In one of these the animals were observed, after partaking of the salt, to run to the water, and soon after to drop down dead. Two of them, when examined, had their mouths, gullets, and crops distended with a highly saline semi-solid alimentary matter, and these parts of the alimentary tract exhibited a deep diffused redness over their whole extent.

CASE VIII.—*Throwing vitriol over the person: recovery, with the loss of an eye.*—An old man of the name of Tawse was tried at the last Autumn Circuit Court of Justiciary in Aberdeen, and, on conviction, sentenced to five years' penal servitude, for the crime of throwing sulphuric acid over his wife's face with the avowed object of blinding her. When seen soon after, beside the woman's clothes being wetted with the acid to a large extent, the face, hands, and wrists were intensely reddened and painful, the eyelids much swollen, and the conjunctivæ injected, and blisters in wheals had already appeared on the hands. After neutralizing the acid and carefully washing the parts affected, the woman was removed to the Aberdeen Infirmary, where, after some weeks' stay, she recovered from the burn, but only after serious injury to one eye, and the loss of the other from the bursting of its globe.

ART. III.

An Analysis of Two Hundred and Twenty Cases of Pulmonary Consumption. By WILLIAM ROBINSON HILL, M.D. Edin., Physician to the Eastern Dispensary, Bath.

IN publishing the following remarks, it is not my object to bring forward any original theories, or even any new ideas, on the subject of pulmonary consumption, except so far as deductions from the observation and collection of groups of facts, independently of the opinions and statements of others, may be called original; but I may be able by this analysis either to add my testimony to that of others on some points, or to indicate erroneous conclusions to which the adoption of certain views may lead; and by recording facts in connexion with a particular disease, I may thus contribute one small item to the cause of medicine, inasmuch as the true principles of the treatment of disease will ever be more and more developed according to the correctness and extent of our acquaintance with the laws of its etiology and pathology, and with the course which particular diseases ordinarily run. To this end, as in other scientific investigations, there are two methods open to the student and investigator, by which he may seek to arrive at the truth. These are the methods of *induction* and *deduction*; the latter undoubtedly the nobler of the two, inasmuch as it is the shorter, and bespeaks a thinking mind of such an order as is not often met with; but for these very reasons it is the least safe, as a slight error in the data on which the reasoning is founded may lead to results very wide of the truth, and if persevered in, in its application to the practice of physic regardless of practical results, may do incalculable mischief; as an instance of which, I would merely mention here the theory of the treatment of phthisis pulmonalis by the hypophosphites, which, grounded on a captious process of deductive reasoning, has had the effect of causing many to swallow drachms of the salts of hypophosphorous acid without deriving a reasonable amount of benefit, as will be more particularly referred to by and bye.

The inductive method seems peculiarly adapted to the science of

medicine; a method less brilliant, it is true, than the former, and requiring principally diligent application and an unprejudiced mind for the unbiassed record of facts; whilst its results, if grounded upon a sufficiently extensive and comprehensive collection of such facts, may be regarded as tending towards the goal of truth so far as they go, and will at least not necessarily involve the recorder in groundless speculations.

It is on this principle, then, that any generalizations that may follow are made. A careful study of the disease during a period of twelve months at the Brompton Hospital for Consumption, with an accurate and indiscriminate noting of all facts in connexion with the state of the patient, results of treatment, &c., enables me, by collating the notes of the histories of 220 patients, to form an analysis of their cases, illustrating some points in the disease, the record of which I presume to think may at least afford some assistance to others who endeavour to develop ideas upon the subject of pulmonary phthisis, by yielding a larger field for the basis of their generalizations, which must always be more or less correct according to the amount of well-ascertained facts on which they are founded; and hence it is more than probable that some of my own conclusions will not be found to accord exactly with those of others who have observed a larger mass of cases, or even with those of others who have watched a smaller number of patients under different social circumstances, for it must be remembered that the following remarks being deduced from the observation of patients in the lower walks of life, with only a small proportion of what may be called the lower middling class, would be essentially modified on some heads—such as duration of the disease, probabilities of amelioration, influence of hereditary taint, &c., if they were combined with an equal number of cases under more favourable circumstances for the treatment of the disease.

They would also be found to differ from the results of others in some measure, according to the stage of the pulmonary lesion at the time the patients came under observation, and according to their age, sex, and various other conditions, which will occur to the mind of every one.

Of these 220 cases, 152 were of the male sex, and 68 were females. Of 150 of the male cases, 21 were in the first stage, 57 were in the second stage, whilst in 72 there was evidence of the formation of cavities; and out of 65 of the female cases, 2 were in the first stage, 28 were in the second stage, and 35 were in the third stage. It will thus be seen that a very large proportion of the cases were in what is usually called the third or last stage of consumption. The general result of the treatment of the 220 cases will be seen by the annexed tabular view, but this subject will be again noticed more particularly further on.

		per cent.
Decidedly improved	104	47.2
Received no marked benefit	25	11.3
Getting worse	41	18.6
Died	50	22.7

I do not pretend in this analysis to write a treatise upon pulmonary consumption, but merely to indicate the results in the way of generalizations upon a few points in the history and treatment of the disease to which the observation of these cases has practically led me, and before entering upon these subjects would make a few remarks upon the pathological anatomy of tubercle.

Tubercle is by most authors described in a general way as being a "peculiar deposit," possessing a very low form of vital organization, having no capability of further development, and always showing a tendency to degeneration and disintegration.

There are, as is well known, two great classes of theorists on the morbid anatomy of tubercle, the one class holding that the "deposit" is an *exudation*, which has struggled into a certain stage of organic development, but remains in a deformed, unfinished state from its low power of vitality; a description which, to say the least, is sufficiently vague to mystify the casual observer, and is decidedly unphilosophical when we remember that in animal physiology most developments are vouchsafed a cellular origin, and when we further remember the cellular theories of vegetable physiology and pathology. Those holding this exudation-theory generally speak of tubercle as a substance which is deposited in a fluid or semi-fluid state, and that it soon assumes the solid form—a statement which has been handed from one to another without the shadow of a foundation, for in the tubercles of serous membranes, where it may be examined in its most uncomplicated form, nothing but tolerably well-formed nucleated cells can be discovered.

The other class of theorists hold that it is merely a retrograde metamorphosis and degenerated condition of pre-existing tissues or elements—a doctrine sufficiently comprehensive, probably, to include the truth, but incapable of conveying much idea of the real state of matters.

The error of observers generally seems to have consisted in taking for examination as the type of tubercle the cheesy masses found in the lungs and elsewhere, which are in reality either masses of tubercles undergoing a process of degeneration and disintegration, such as any morbid product is subject to under similar circumstances, or they may be thickened and metamorphosed purulent or cancerous matters; hence tubercle has been described microscopically as consisting of molecules, granules, and ill-formed irregular cells; whereas, any one who has examined the tubercles in tubercular meningitis can testify that the cells have a most legitimate rounded appearance, and contain nuclei, bearing, in fact, a strong resemblance to pus-cells, which circumstance led Robin to doubt the propriety of considering it a tubercular disease.

For these reasons, then, seeing that the cellular development of an amorphous exudation has not been proved to demonstration, and appears as improbable a theory as that of spontaneous generation, inasmuch as they both involve the notion of the spontaneous origin of life; and believing as I do in the idea of the cellular origin of pathological pro-

ducts, the only theory of tubercle that seems to me to be true, rational, and philosophical, is the one proposed by the master-mind of him who gave out, and has so ably maintained, the doctrine of the cellular pathology. I refer, of course, to Professor Virchow, of Berlin, probably the greatest thinker that Germany can at present boast of, combining what is so rarely seen in one person—the faculty of observing minute details, and of making large and important generalizations, at once the workman, the builder, and the architect—the workman, laboriously and patiently collecting and preparing the materials; the builder, arranging them and massing them together in their respective places; and the architect, devising in his far-seeing expansive mind the dim outline of a noble edifice.

Without entering into an exposition of the cellular theory generally, I cannot do better than give M. Virchow's views on the origin of tubercle, as they are found in his work entitled, 'Die Cellular-Pathologie,' amplifying them, where possible, by my own notes of a lecture which I heard delivered on that subject by himself.

In the first place it is important to know what we understand by the term "Tubercle." Originally the name was applied to anything in the form of a little knot or little lump, as the Tubercula carcinomatosa, Tubercula scrofulosa, and Tubercula syphilitica; and Laennec was the first to distinguish two different forms of tubercle in the lungs, analogous in themselves but differing in their development: 1. The isolated tubercle, or military tubercle; and 2. Infiltrated tubercle. This was the first step in departing from the original idea of tubercle; and later in its history the cheesy nature of the production gradually came to be considered as its ordinary specific character. If a lung in a state of tubercular infiltration is examined, its component elements are found to be the same as result from the changes that take place in the products of inflammation, hence Virchow is of opinion that what is generally called "infiltrated tubercle," is in fact, with few exceptions, to be referred in its origin to an inflammatory, purulent, or catarrhal product, which by degrees, through a process of imperfect resorption, has passed into a shrivelled condition.*

The isolated tubercle, or tubercula granulata, he considers may have three different sources of development; first form, where it is situated in the parenchyma, confined perhaps to a dozen alveoli, the principal part of the morbid product being in the alveoli as in pneumonia, in which disease this condition is termed *hepatization*, and hence Virchow names this form *cheesy hepatization*: it may be lobular or lobar.

The second form shows itself as really interstitial, situated in those points where a certain amount of connective tissue exists. It occurs as little knots, which may afterwards seem to form one mass, but can always be distinguished as composed of separate grains, called military tubercles.

* See Die Cellular-Pathologie, in ihrer Begründung auf physiologische und pathologische Gewebelehre, p. 422. Second edition. Berlin, 1858.

The third form begins on the small bronchi entering the alveoli. A simple chronic inflammation of the bronchus takes place, causing purulent or muco-purulent secretion, which on cross section appears as a yellow spot in the centre. These granulated bodies have been taken for tubercle, because observers never thought that they had sections of small bronchi before them. This form may be easily distinguished from the real tubercle granule with the naked eye by simply rubbing a little blood over the cut surfaces of the granules, when the inspissated mucus contained in the lumen of the minute bronchial tube becomes reddened, whilst the thickened wall of the bronchus remains uncoloured. This appearance is of course not seen in the real tubercular granule.

Professor Virchow, therefore, in his theory of tubercle holds to the original idea of its being a grain or little knot, and the tubercular granule he considers as a new formation, which from its first development onwards is necessarily of cellular nature, and which, as a rule, proceeds from the connective tissue (*Bindegewebe*) exactly as other new formations do, appearing as a little knot when in the interior of the tissue, and as a projecting knob when situated on the surface, consisting in its entire mass of one- or many-nucleated cells.* These cells often bear a very close resemblance to pus-cells, and are only to be distinguished from them in possessing larger and more numerous nuclei, with a comparatively smaller cell-wall than the pus-cell. They are also distinguished from cancer and canceroid cells by the latter being much larger formations, with strongly developed nuclei and nucleoli. He also insists upon the desirability of retaining the name "tubercle" for this form of morbid development, because he believes that a tubercle never increases to any size, never, as he says, becomes a "tuber," and he regards the large tubercular masses found in the brain and other places as consisting of thousands of little tubercles, which by their close apposition appear as one mass.

In describing the further history of tubercle, M. Virchow says that usually an imperfect process of fatty metamorphosis soon commences in the centre of the tubercle granule, after which, all trace of moisture disappearing, the elements begin to shrivel, and the grey semi-transparent granule presents a yellowish opaque spot in its centre, and thus the cheesy metamorphosis is established, which, though the usual, is not to be considered the necessary and characteristic issue of tubercle; for, on the one hand, if the fatty metamorphosis is complete the tubercle may in a few cases be absorbed, and on the other hand, other cellular new-formations may pass into the condition of cheesy metamorphosis; hence the necessity of examining tubercle in its mode of origin rather than in its result, if we wish to have a correct notion of its pathology.

Supposing this, then, to be the true theory of tubercle, it is clear that the term at present used, of tubercular "deposit," is meaningless and incorrect; and perhaps the more exact expression in speaking of tubercular affection would be to call it the "tubercular form of inflammation," as we have always spoken with hitherto unfounded correct-

* Loc. cit., p. 427.

ness of tubercular meningitis, synonymous with "tubercular inflammation of the meninges."

Having thus treated of the morbid anatomy of tubercle in what I believe to be its essential nature, I shall not notice further at present the other pathological changes or conditions of the lungs incident upon the presence of tubercles in their substance; I refer to the process of softening and ulceration of the pulmonary tissue, with expectoration of the same, and the formation of cavities, which sequelae are to be regarded merely as the result of the presence of a disintegrating, disorganized substance, giving rise to local irritation, and are not a necessary issue of tubercle. Therefore to speak of the disease being in the "first," "second," or "third" stage, according to the condition of the lungs, is also erroneous both in a general way and anatomically; firstly, because the general condition of the patient and the physical signs do not always accord with the state of the lungs, as is occasionally seen by the sudden death, from hæmoptysis or otherwise, of a patient pronounced to be in the first stage of consumption, when a small central vomica would entitle him to be classed amongst those in the third stage; neither is it anatomically correct, because the second and third conditions are not really stages of the disease in its essence any more than the metamorphoses of an apoplectic clot are stages of apoplexy; however, the terms as applied to the condition of the lungs will be used in this paper for the sake of brevity and clearness.

I shall now pass on to the causes of pulmonary consumption, which may be considered under the usual heads of predisposing and exciting; and under the former we shall inquire into the amount of influence which the sex, age, hereditary tendency, and social condition of the patient may seem to exert in the development of the disease.

Sex.—Whether the disease is as a fact more common in males than in females I am unable to state, for the circumstance of my having observed most cases in the male subject may be regarded as accidental.

That such is the case is rendered probable by the fact of a much larger proportion of males applying for relief at charitable institutions; for example, at the Brompton Hospital for Consumption up to the year 1849, 2679 males and only 1679 females had been under treatment,* but this, on the other hand, may to a great extent be explained by remembering that it is often more convenient and necessary for a sick father of a family to leave his household than for the mother to do so, which is proved by the fact that of my 152 male cases one half were married men, whilst of the females less than a quarter were married.

The sex, however, will be observed to exercise a considerable influence in the age at which the disease attacks the individual, and on the development of the disease in those in whom there exists no hereditary predisposition, inasmuch as the female sex is in a much larger proportion attacked before the age of thirty, and in a still greater proportion before the age of twenty, whilst those affected without any hereditary taint of the male sex will be found to predominate over the

* See Cotton on Consumption, p. 37. Second edition.

tainted in inverse proportion to that which obtains in the female cases.

Age.—Pulmonary consumption is proverbially a disease of youth, which is notably confirmed by the statistics of these 220 cases, and I must here mention that these remarks are entirely independent of cases of infantile phthisis, none of my cases having been under the age of eight. There is of course the greatest difficulty in ascertaining the date of the commencement of the pulmonary lesion, but as great care and trouble was taken in these cases to ascertain the time of the commencement of the *slightest* cough (a point so difficult to ascertain from patients, as they are apt to take no account of it for a long while), as well as to note any other symptom which might indicate the date of attack, it is hoped that the statistics may, at any rate in a general way, be considered reliable. The most common period for commencement is between the ages of twenty and thirty, in which 43 per cent. of the 220 cases commenced; the second most frequent period is before the age of twenty, in which 28 per cent. were attacked, thus leaving a very small proportion in whom the disease commenced after thirty years of age. These statements agree so far with Dr. Cotton's observations, in that he states* "that the disease is most frequent between the ages of twenty and thirty," to the amount of more than 39 per cent. They disagree in this point, that Dr. Cotton finds the period of thirty to forty the next most frequent age. Now, in investigating this subject, I took great pains in each case to endeavour to ascertain the age at which the disease seemed to *commence*, and as Dr. Cotton makes no remark on this head, I think it is more than probable that his deductions are founded on the ages of the patients taken as they came under his notice, which, in examining my own cases, would, I find, materially increase the per-centage of cases between thirty and forty, as also decrease the number of those under twenty.

The number of females attacked before the age of twenty predominates over the number of males attacked before that age as 38 to 24, and before the age of thirty as 78 to 68, thus showing that the number of females attacked before the age of twenty exceeds the number of males attacked before the same age by a very large proportion. Why such should be the case will, I think, be amply apparent from the facts stated below, which prove that the disease is developed much more frequently in the male, by what may be called accidental and extraneous circumstances, and to which he is almost as much exposed from the age of thirty to fifty, as from the age of ten to thirty.

Hereditary predisposition.—This is popularly recognised as of great moment in the development of the disease, and not without good cause, as I think, though at what rate its influence must be valued is uncertain, and what the chances are in favour of an individual being attacked who is a member of a consumptive family, independently of other causes, cannot be ascertained with any precision until numerous

* *Loc. cit.* p. 24.

observations have been made as to the number of members of such families who, *ceteris paribus*, are not attacked.

Of 213 cases in which a note was taken with accuracy regarding the family history, 100 or 46·5 per cent. had consumptive relatives, whilst 113 or 53·5 per cent. had none.

This per-centage differs from that given by Dr. Walshe, who says that 26 per cent. of phthisical patients come of a phthisical parent, thus including only cases of direct hereditary transmission, which corresponds with my own *direct* cases which numbered 49, or 23 per cent.

The majority, therefore, in my own statistics, being in favour of those free from family predisposition, it would seem at first sight as if the hereditary element was one of which much account should not be taken, but it must be remembered that there are other predisposing causes, and that the exciting causes must therefore act in numerous instances independently of the one we are now considering, which will be plainly seen by a minuter examination of the hereditary influence, inasmuch as in the sex most removed from the influence of other predisposing causes, that of the hereditary taint will be found largely to predominate; thus, of the above quoted 213 cases, 151 were males, in 63 of whom, or 41·72 per cent., the hereditary tendency was marked, whilst in 88, or 58·28 per cent., there was none; the rest of the number, 62, were females, of whom 37, or 59·7 per cent., had a consumptive family history, whilst only 25, or 40·3 per cent., were free from it; thus showing in females, who may be regarded in a measure as comparatively exempt from some of the causes of phthisis to which men in that class of life are exposed, that the predominance in favour of hereditary influence is as great as 3 to 2 of the male cases.

It may therefore, I think, be safely argued that, *ceteris paribus*, the fact of family taint increases the probabilities of an individual being attacked to a somewhat considerable extent; and further, that it increases the probability of individuals being attacked at an earlier age than would otherwise happen, for of an equal number of cases in which there was direct parental disease, and in which there was no family history whatever of consumption, 73·2 per cent. of the former were attacked before the age of thirty, whilst of the latter, the disease commenced before the same age in only 58·6 per cent.

Social condition.—The influence of marriage is said by some physicians to be important in the development of consumption, but on this head I have nothing to offer: 1st, because I have made no observations on the subject, and 2nd, because in hospital patients the medical attendant is acquainted with only a very small portion of the pathological life of his patient; and, therefore, I conceive that this subject would be more accurately investigated by the combined experience of medical men in practice who have the opportunity of watching their patients through a series of years.

That the social condition in respect of the want of adequate food and clothing, the breathing of a confined and polluted atmosphere, and the exposure to the vicissitudes and inclemencies of the weather,

exercises a considerable power in the development of pulmonary disease, is proved, amongst other things, by: 1st, the more frequent occurrence of the disease amongst those so situated; 2nd, by the fact, which I think I have observed in a general way, that those patients in whom these conditions are mainly the cause of the disease are most markedly benefited by removal therefrom, and by hospital treatment; and 3rdly, the facts which have been above used to show the amount of influence which hereditary tendency exerts, may inversely be applied for proof here; inasmuch as, granting the hereditary influence, the disease is seen to occur idiopathically, if I may use the expression here, with much greater frequency in males, who necessarily are more exposed to the vicissitudes of weather, than in females, a frequency represented by 3 to 2.

The exciting or proximate cause of tubercular affection of the lungs is very vague, very difficult to grasp with accuracy, and, in the present state of our knowledge, must probably be attributed to that very comprehensive and indefinite term of "catching cold," which popularly accounts for such a large majority of human ills. This seems to be almost the only thing to which amongst those attacked, the rich and poor, the well-fed and the ill-fed, the well-protected and the ill-protected, are alike exposed; but it must be associated in our minds with other circumstances, inasmuch as all catarrhs and coughs do fortunately not take the form of confirmed pulmonary disease, and among these other circumstances, the most generally recognised classes seem to be those which include all circumstances that are mentally depressing, and all causes that are of a physically debilitating nature.

Why different effects should be produced under apparently the same conditions is at present not discoverable, and the reason probably lies in the secrets of the vital and organic constitution of the human system, with which we are unacquainted, and for the revealing of which a correct idea of the pathology of the disease is evidently one of the most important indicators.

The physical signs of pulmonary consumption.—There are no physical signs which, taken alone, can of themselves be said to indicate unmistakably the presence of tubercular disease of the lungs in the first stage, the so-called stage of deposit. For the morbid signs which we recognise in these cases are merely a modification or alteration in character or intensity of the normal sounds yielded by examination of the healthy chest, the alteration being due to a greater or less amount of consolidation of the pulmonary organ, and hence influenced by the general laws of acoustics, so that the same abnormal sounds may be produced under similar circumstances by consolidation of any nature, and not necessarily tubercular. In the diagnosis of early pulmonary consumption, it is therefore plainly necessary to take into consideration other facts in connexion with the physical signs. Of these one important circumstance is the *position* of the consolidated portion, as it is a well-known fact that in nearly every case of consumption, the disease commences at the apices of the lungs, and if the consolidated portion is of

a circumscribed character at the apex of one or both lungs, the argument is strong in favour of tubercular affection.

Other circumstances of a general nature which it behoves us to take into consideration may be enumerated, as the comparative long duration of possibly only a slight cough, the occurrence of hæmoptysis, of night sweats, of slight pains described by patients as being of a "dragging" character, the loss of flesh, the commencement of shortness of breath when exertion is made, &c. Any or most of these may be either absent, or, if present, from a variety of causes, beyond our power of discovery.

To consider now the physical signs themselves more in detail, I will first mention that of forty-two lungs in which the disease was observed in the first stage, in male cases, nineteen, or nearly one-half, presented marked conditions of a degree of dullness on percussion, of bronchial breathing, and of more than usual resonance of the voice, and I may remark that in at least sixteen of these cases the correctness of diagnosis was put beyond all question, either by personal post-mortem inspection or by observation of the cases until they passed unmistakably into the second or third stages. These signs, then, when found in conjunction with one or more of the above-mentioned concomitant general symptoms, may be considered as positive proof of the presence of tubercular affection in an early stage. It will be seen, however, when more closely examined, that each of these signs is, in its expression, of a relative nature only, and, further, may from various causes be absent, as I can show from actual cases, without in any way detracting from our certainty of the presence of tubercular disease.

In judging of the percussive resonance of a given portion of the pulmonary region, we must bring our general knowledge of the normal resonance to mind, in addition to comparing it with the same situation on the opposite side of the chest, and with other portions of the same pulmonary organ; nothing is therefore more probable than that a slight amount of comparative dullness may escape even a tolerably experienced ear.

The absence of dullness on percussion compatibly with the presence of tubercular consolidation may be accounted for in one of three ways: 1st, from the presence of emphysema of the lungs, which modifies also other abnormal physical signs, as in one case, where there had been cough for two years, with loss of weight to the amount of at least forty pounds, whilst there was no dullness on percussion, no increase of vocal resonance, and deficiency in the respiratory sounds. Post-mortem inspection eight months after the first examination, showed cavities in each lung, with much emphysema. Under this head I omit all such great deviations from the normal physical condition as pneumothorax, hydrothorax, &c., which more or less preclude the possibility of ascertaining the condition of the lung at all.

2nd. The presence of some degree of dull percussion may not be perceived, on account of great disease and absolute dullness on the opposite side, in comparison with which the percussion of the doubtful

side appears of normal resonance. This I have seen in five or six cases, where a suspicion of the presence of tubercle from other decided physical signs, notwithstanding the absence of all perceptible shade of dulness, has been converted into a certainty a few weeks later, either by autopsy or more decided physical signs.

3rd. Dulness may be really absent when tubercle is present in sufficient quantity to produce harsh, interrupted, or even slightly bronchial breathing, but is scattered through the lung substance, leaving unaffected, sufficiently crepitating portions between the nodules which produce the resonance on percussion. This is common in those cases of miliary tuberculosis, where the physical signs are often so obscure as to render it uncertain until the decease of the patient, whether the disease was tubercular affection of the lungs with accompanying fever of a typhoid character, or typhoid fever with concomitant pulmonary complication.

Of these cases I have seen one where the too unmistakable symptom of perforation of the intestine alone decided the diagnosis on the side of enteric or "pythogenic" fever, and another where post-mortem inspection alone yielded positive evidence of the correctness of the alternative diagnosis of tuberculosis.

The bronchial breathing of auscultation is a sound tolerably fixed and definite in its character, in consequence of being derived from the normal condition of the respiratory sounds when listened to in the neighbourhood of a large bronchial tube. But it may vary widely in its intensity, and therefore more attention should be paid to its essential character than to its loudness. Its essential character, to my mind, consists in the increase in length and harshness of the expiratory sound in its normal comparison with the sound of inspiration; or, in other words, it consists in the expiratory sound resembling the inspiratory sound more than is observed under normal conditions.

This physical sign, when existing in a region where naturally only vesicular respiration should be heard, is of great value in indicating pulmonary consolidation; but only when observed under conditions above mentioned can it be interpreted as evidence of tubercular consolidation, neither can its absence be considered always as negative proof of the non-existence of tubercular affection, as the emphysematous case above cited proves, whilst I have notes of other cases in which, with dulness and increased vocal resonance, the respiratory sounds could be described only as "rough" or "deficient," which cases, in the course of their history, after the lapse of a few weeks, were found to present undeniable signs of tubercular affection.

Finally, the increase in intensity of the vocal resonance is, when distinctly present, a very strong evidence in favour of pulmonary consolidation, but is comparatively often absent when other signs leave no doubt of tubercular affection; and reversely, there are fallacies attending its presence which detract from its value, inasmuch as under normal conditions its intensity varies in similar situations on the opposite sides; and again, in health it varies considerably in different subjects.

These, then, being the conditions under which we may with confidence declare the existence of pulmonary tuberculosis in an early stage, it becomes a subject of great interest as well as of great importance in some cases to consider if there are not certain less decidedly well-pronounced deviations from the normal condition of auscultation by which we may be justified in expressing our conviction of a diseased state. This knowledge can manifestly be obtained only by the careful observation of a large number of cases for a period of time, noting any slight deviation, and comparing the result after the lapse of a longer or shorter period of time.

Following this plan, I have met with several cases in which certain slight deviations from the normal character of the respiratory sounds, when taken in conjunction with sundry other circumstances favouring the probability of tubercular disease, such as manifest affection of the opposite lung, gradual wasting of the body, long-continued cough, &c., have given rise to a suspicion of tubercle, which at a later date has been confirmed by marked physical signs, or by post-mortem examination.

These deviations it is rather difficult to indicate in words, and have been described by different authors in different ways, because the same sound will suggest to the minds of different auscultators a similarity to a variety of other sounds. Avoiding, therefore, comparisons with other sounds, I would describe them according to their character and intensity in relation to the normal respiratory sounds, and speak of them as a *deficiency* in intensity, a *roughness* or *unevenness* in the character, and a *harshness* in character maintaining the evenness of normal respiration, but to be distinguished from exaggerated healthy or so-called puerile respiration, being rather a very mild and early expression of the bronchial breathing.

In addition to these there is the divided respiration, in which one or both of the respiratory sounds are divided into two, three, or more distinct and separate parts. As instances, I will mention some of the cases in which these deviations were noticed.

M. L. Harsh respiration, generally over right lung, with slight dulness and little increase of vocal resonance at the apex, and distinct evidence of a cavity in the left lung. Five weeks after this note was made the patient died from the occurrence of pneumothorax, and tubercle was found scattered through the right lung, but by no means densely so.

F. A. Slightly harsh respiration under right clavicle without dulness. Evidence of a cavity on the left side. On examination five weeks afterwards, there were dulness, crepitation, and loud vocal resonance at the right apex.

A. B. Deficient respiration and slightly impaired percussion at the right apex, with softening in the left lung; after two months presented the following physical signs—dulness, crepitation, and bronchophony.

T. H. Two months before his death a little harsh respiration was

the only abnormal physical sign at the left apex; whilst at the time of the post-mortem examination there was a large vomica in that situation.

R. B. Rough respiration with dulness at the left apex was changed into cavernous respiration a fortnight later, the change being verified two days afterwards by post-mortem inspection, showing the upper lobe of the left lung quite dense with tubercle, with two or three small cavities in the apex.

G. B. Divided inspiration at the right apex, with some other signs of tubercle, was found after two months to be developed into the second stage.

Several similar cases might also be given, but these are considered sufficient to show that such slight deviations are worthy of attention, and may give good reason for a doubtful, if not unfavourable diagnosis.

The second stage of phthisis pulmonalis is said to commence when we find accompanying or superadded to the physical signs of the first stage, that condition which is described under the head of moist crepitation. The character of that moist crepitation, which is considered as evidence of the softening of tubercle, can only be made manifest to our conception by actual auscultation, as there is a variety of sounds, originating from different physical conditions to which the term *crepitation* is applied—such as *dry* crepitation, and other forms to which a specific name is attached, indicating the pathological condition under which it exists—for example, *pneumonic* crepitation.

It is not my intention to enter into a description of the various kinds of crepitation, but would merely remark that the phthisical moist crepitation may in a general way be recognised by the following characters. The bullæ are of moderate size, between the fine crackle of pneumonia and the large, as it were, round bullæ of an oedematous lung, and they give the idea of air passing through a viscid fluid, as if the bubbles were unwilling to break. Further, the moist sound usually accompanies both the respiratory acts, and is not easily removed by a cough. In addition, the position of the crepitation and other circumstances may be taken into consideration in aiding the diagnosis, as in the first stage.

Whilst in many, perhaps the majority of cases, the occurrence of moist crepitation may be the first appreciable sign of the softening of tubercle, it must be remembered that in other cases where the presence of tubercle has been ascertained, there are often other indications of softening developed previous to the changes in auscultation; and I would here notice the importance of making the patient cough whilst the ear is still on the stethoscope, as crepitation is often heard in the forced inspiration preceding and following the act of coughing, when it is absent in ordinary deep inspiration. Amongst the other symptoms indicating the occurrence of softening may be mentioned the character of the *expectoration*, which microscopically may present evidence of the disintegration of pulmonary tissue, and *hemoptysis* in certain cases—viz., in those in which there is good reason for believing that the blood proceeds directly from a ruptured pulmonary vessel,

which must be the result of disintegration and ulceration, the real explanation of the condition of softening. Also, in certain cases the crepitation has entirely ceased, the patient improving generally, leaving only the physical signs of the first stage. In these, therefore, we should be apt to conclude that the disease had not reached the second stage.

As the division into second and third stages is arbitrary, so the passing of a lung from the second into the third is in many cases not to be detected by the stethoscope. For though in a large proportion of cases one or more cavities are formed in one or both of the lungs at some period in their history (the only case to the contrary that I can remember of those that I have seen to their end being one that succumbed at an early stage of the pulmonary disease from tubercular meningitis), yet as there are cases in which small cavities are found by post-mortem inspection, undiscoverable by the closest physical examination during life, from being situated deeply in the organ, it is but reason to suppose that many cases have passed into the third stage, while as yet we are unable to pronounce such to be the case from physical signs.

There are, however, certain auscultatory signs which when present may be said to be distinctive evidence of the presence of a vomica in the lung-substances. The percussion over a region containing a vomica is generally exceedingly dull, from the density and great consolidation of the surrounding pulmonary tissue. In a few cases, however, the percussion note is of rather a tympanic character, when the vomica is large, near the surface, and contains only air.

The *bruit de pot fêlé*, or cracked-pot sound, is one on which great stress has been laid, but the value of this phenomenon has been ably inquired into by Dr. Hughes Bennett, and proved to be of limited extent. For my own part, I have always regarded this sign more as a matter of interest than of importance, inasmuch as I believe that in those cases where the sound is unmistakably developed from the existence of a vomica, the condition of the lung can be with confidence pronounced upon from the other physical signs. It will often indicate the large size of a vomica, and is most easily elicited where there are numerous anfractuous communicating cavities. In auscultation the signs that may be considered indicative of a cavity are when the respiratory sounds, the moist rhonchus, or the voice have a cavernous or amphoric character. The moist rhonchus resembles often a loud gurgling, and in some large vomices metallic tinkling, resembling the sound of water dropping into an empty pitcher, may be heard.

The exceeding loud vocal resonance has been named *pectoriloquy*, but it is often difficult to draw a line of distinction between loud bronchophony and pectoriloquy. There is one character of the voice which may be considered almost invariably diagnostic of the presence of a cavity—the *whispering* pectoriloquy—where a whisper uttered by the patient is heard through the stethoscope with as great or greater distinctness than from the mouth, as if the whisper originated in the chest. I believe, however, from cases observed, that a modified form

of whispering pectoriloquy may be detected in the chest occasionally without the presence of a vomica.

The importance of a physical examination of the chest is thus seen to be very great, not only in ascertaining the existence of tubercular disease, but still more in revealing also the extent of the affection. To aid in the diagnosis of its existence there are also certain general symptoms of dire indication which demand a slight notice, and of these, gradual and, it may be, slight emaciation is one which may cause some degree of anxiety before the patient has a cough, or *knows* that he has a cough. In illustration of this I will mention the case of one man, who avowed that he had had the slightest possible cough for one month previous to the time he came under my observation, and *only* for one month, whilst he was aware of having lost flesh for at least a month previous to the commencement of his cough. On examination of the chest, the sounds of percussion and auscultation deviated so very slightly from a perfectly normal condition, that but for general symptoms it would probably have been pronounced healthy. The emaciation continued, and six weeks after, another examination of the chest revealed only slight dulness on the right clavicle and a little increase of vocal resonance below it, whilst in another fortnight the pulmonary affection had advanced so rapidly as to give unmistakable evidence of the existence of a small vomica at the right apex, whilst the additional loss of weight amounted to seven and a half pounds, twenty-three pounds less than his normal standard.

Hæmoptysis, or the expectoration of florid blood, is a symptom that often assists greatly in aiding the practitioner to decide upon the presence of tubercles in the lung, and may in some cases be the first symptom that enables him to pronounce upon the state of the lungs, not to mention its being frequently the first circumstance that leads the patient to be anxious about himself. There are, of course, cases which show that it is not to be regarded as a positive sign of tubercular disease, such as the well-known vicarious hæmoptysis in the female; but to enter upon this subject would be rather beyond my object. Its great importance will be evidenced by the fact, that of 212 male and female cases, it occurred to a greater or less extent in three-fourths of the number, or 75 per cent. Of male cases alone the average of occurrence was rather greater than of the female cases taken alone, being 77.8 per cent. in the former and 68 per cent. in the latter. Very copious hæmoptysis, that is, to the amount of about a pint and upwards at one time, occurred in about 15 per cent. of all the cases, and that decidedly more frequently and more copiously in the male sex. The number of deaths consequent upon copious hæmoptysis was five, or 2.27 per cent., one female and four males, the female and one male having died in the attack from complete loss of blood, the ventricles of the heart being in each case found empty. The others died respectively one, seven, and eleven days after the commencement of the hæmoptysis. In four of the cases there was much disorganization of both lungs, with large cavities; whilst in the one that survived eleven days the pulmonary affection was limited to a little miliary tubercle in

each lung, and three vomica, not larger than almonds, in the one from which the blood proceeded. In three it was distinctly traced that the source of hæmoptysis was in the left lung; in one it *appeared* to have proceeded from the left, and in one apparently from the right.

In none of the above cases could the actual source be traced to a ruptured vessel, though in three of them the locality was determined by the clots of blood which filled the bronchi and the vomica from which the hæmorrhage proceeded.

In these cases of sudden death from hæmoptysis the amount of blood expectorated cannot be regarded as evidence of the amount which the system loses, for a large quantity may be swallowed, as occurred in one of those above mentioned, where only two ounces were expectorated, and yet the patient died in the course of a few minutes, the autopsy revealing the heart's cavities quite empty and the stomach full of coagulated blood. On the other hand, it is interesting to note what a large quantity of blood may sometimes be expectorated and yet the patient not only survive but continue to live some years. Patients often state that they have had hæmoptysis to the extent of some pints or quarts, but these statements must be received with reserve, as the alarm occasioned by the occurrence will cause them unwittingly to exaggerate. The following case, however, came under my own observation, having a history of frequent and copious attacks of hæmoptysis to the aggregate amount of at least six pints in the course of six months. This patient had physical signs of softening at the right apex, and slight consolidation in the left lung. In a period of two months I was at his bedside during repeated attacks of hæmoptysis, on almost each occasion occurring to the amount of half a pint or a pint, and the aggregate quantity of blood lost was at least six and a half pints, independently of much that was swallowed and subsequently vomited. On most of these occasions he did not feel weaker after the hæmoptysis, but experienced great relief in the chest, and at the end of the two months he weighed only two pounds less than before the loss of the six and a half pints of blood. During a subsequent period of two months' observation this patient improved in health and strength without recurrence of hæmoptysis.

Whether patients sometimes have hæmoptysis before the commencement of the cough is a question that admits of doubt. Such would seem to be the case from the account of many of the most intelligent patients. There are some who affirm they had not even the slightest "hacking" cough before the hæmoptysis, but that since its occurrence the cough has persisted. Others state that having positively had cough only six months, they had an attack of hæmoptysis to the amount of perhaps half-a-pint to some pints two or three years previously, which is generally attributed to an overstraining in lifting weights, &c.

In the former class it is more than probable that some continued cough existed before the attack, too trifling to call the patient's attention to it, and in the second class, it becomes a question whether the existence of tubercles in the lungs is to date from the cough or from the hæmop-

ty. Thus much, however, is to be learnt from these cases, that in many instances the occurrence of hæmoptysis is *practically* the first indication of tubercular disease of the lungs.

It may be interesting, though perhaps not of much real importance, whilst speaking of the anatomical condition of the lungs, to advert to the subject of the relative frequency and priority of the affection of the right and left pulmonary organ.

Of 157 male and female cases in which a note on this subject was made, the disease was found to have attained a more advanced stage in the right lung, comparatively with the left, in 59.2 per cent. of the cases. Thus it would seem that the right lung is more prone to the affection, but this per-centage is liable to modification, as will be seen by taking the male cases alone and the female cases alone: 109 of these patients were males, and of them the greater amount of disease in the right lung was found in 65 per cent.; whilst of the 48 female cases, the right lung was principally affected only in 45.7 per cent.; so that the per-centage would seem to be materially altered according to the relative proportion of males and females; and it may also be said that these numbers are too small to found any conclusions upon. I may mention, however, in support of the above, that of 114 other male and female cases, taken from the records of the hospital, in which, from the account, it could safely be concluded in which lung there was the greatest amount of disease, the result gave a per-centage of 55 right lung cases, corresponding somewhat nearly with my own 59.2 per cent. Also from the report of 170 cases, a proportion of 53 per cent. showed more cases of excess of disease in the right than in the left lung.

I ought, perhaps, to mention that the above ratios do not include any cases in which the disease seemed to be equal in both lungs, a fact which must be remembered in comparing these statistics with the results arrived at by others.

These three independent testimonies, however, do not accord with the investigations of others; for example, Dr. Cotton, in his work on consumption, finds among 839 cases a per-centage of only 45.7 of right lung cases; and he infers, therefore, that "the left lung is rather more liable to become tubercular than the right; but that the difference in this respect is so small as to render it a subject of curiosity only, and not of the slightest practical value, either in the diagnosis or treatment of consumption;" an opinion which my own observations would tend to confirm.

ART. IV.

On Live-Birth. By W. B. KESTEVEN, F.R.C.S.

THE vexed question of what constitutes live-birth has been recently revived in consequence of a case tried before the Vice-Chancellor Sir J. Stuart. In this case the medical opinions were opposed; it may therefore be instructive to consider the grounds of the views entertained by the medical witnesses, and to review the opinions on this matter of

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PART I.

ORIGINAL COMMUNICATIONS.

ART. VII.—*On the Efficacy of Electricity, Galvanism, Electro-Magnetism, and Magneto-Electricity, in the Cure of Disease; and on the best Methods of Application.* By M. DONOVAN, M.R.I.A., formerly Professor of Chemistry to Apothecaries' Hall.

(Continued from page 128 of Journal for February.)

THE important subject of the treatment of asphyxia has also occupied M. Le Roy. According to his experiments a quick inflation of the lungs of drowned persons with air is injurious; not so inflation gradually and slowly applied with a straight tube; but he prefers resuscitation by galvanism. He plunges a short and very fine needle between the eighth and ninth ribs, a few lines inwards, until it reaches the attachments of the diaphragm. Then he establishes a current with a pile of twenty-five or thirty pairs of one-inch plates: as soon as the diaphragm contracts, and an inspiration has been made, he immediately interrupts the circuit, while expiration is tak-

ing place, and then re-establishes it to occasion a new inspiration. Galvanism, which, continuously applied, produces only disorderly movements, when made to act in this manner, causes regular respiration. He has repeatedly thrown animals of the same species and strength into a state of asphyxia by submersion; and while those which he left to themselves perished, those treated by galvanism were saved^(a).

M. Jadelot, the translator of Humboldt's work on galvanism, states, as a consequence of experiments, that "the diaphragm in warm-blooded animals is the muscle which, if not irritated most strongly, is at least irritated with most readiness."^(b) The fact is favourable to M. Le Roy's views of the treatment of asphyxia.

The resuscitation, by galvanism, of infants born in a state of asphyxia, has been suggested by Dr. Radford, of Manchester^(c), and in all probability the attempt, assisted by subsidiary means, would often be attended with success.

The following remarkable case of recovery from hydrophobia by galvanism would scarcely be credited but that it is well attested. It is extracted from a "Report presented to the Class of the exact Sciences of the Academy of Turin, on the Action of Galvanism," by S^r Vassalli Eandi.

A man bitten in the finger by a mad dog came to consult him on account of pains which he felt in the arm, the back, and particularly in the finger which had been bitten a month before. The actual cautery applied to the finger removed the pains, but in a few days after they were again felt, accompanied by symptoms of hydrophobia. The patient could no longer look at water without trembling; an inflammation in the throat prevented his swallowing bread, even after he had chewed it; and a strong desire to bite was manifested every moment.

In this state he was brought to S^r Rossi, who, seeing that he could not bear the sight of water, and not even of bright

(a) *Archives Générales de Médecine*, tom. xii. p. 461.

(b) *Phil. Mag.*, vol. vi. p. 250. (c) *Provin. Jour.*, Dec. 1844.

bodies, prepared in another apartment a pile of fifty pairs of discs of silver and zinc, alternated with pasteboards moistened in solution of muriate of ammonia. Finally, he used a small band of moistened coarse paper, as a conductor, on which the naked feet of the patient were placed, and at the moment when he opened his mouth to bite, one end of a conducting arc was pushed in, the other end being connected with the pile. The patient suffered much from this operation, which, after many shocks, weakened him so that he could no longer support himself. Being then stretched on the ground, he was galvanized at ease: the operation caused the perspiration to break out in drops. Next morning the patient himself came to S^r Rossi, and informed him that he was completely cured, as he no longer felt pain or difficulty in swallowing, and that he had entirely ceased to feel aversion to water and liquids: no reasoning, however, could persuade him to submit to a new operation. But in a few days after, some slight pains having made him apprehensive of a new attack of hydrophobia, he returned to Rossi, who, by means of galvanism, again caused all the symptoms to disappear. This cure was effected in the presence of several persons. Such sensibility had the patient, that he felt the effects of the shocks for a month after in his shoulders^(a).

There is a use to which voltaic electricity may be applied, and to which medical practitioners in this country seem to have paid but little attention. Experiment has long since proved the influence which voltaic electricity exerts over affinity, and to such an extent that compound bodies, in which the component parts are united by the most powerful affinities, are not only decomposed, but their elements are transported to great distances, and are even carried through substances without combining, to which they, nevertheless, have a strong attraction, and to which they would otherwise have united. Some singular instances of this transference have been dis-

(a) *Journal de Physique*, tom. lvi. p. 308.

covered by philosophers, in connexion with the economy of the human body.

Sir H. Davy having placed his fingers, previously well wetted with distilled water, in contact with distilled water in the positive part of the voltaic circuit, phosphoric, sulphuric, and muriatic acids rapidly passed into the water from his body. On making a similar experiment at the negative side, fixed alkali made its appearance. "Now," says Becquerel, "since acid and alkaline substances can thus be separated from their combinations in the living body by means of electrical power, there is reason to believe that, by the same means, may be introduced into the living body different substances, capable of reacting on the organs in different pathological cases."

The hint conveyed by Becquerel had been already acted upon.

Dr. Fabré-Palaprat has made some experiments which seem to promise great results, if the subject be sedulously followed up by practitioners. They were as follows:—After having dried as much as possible both arms of a woman, he applied to one of them a compress soaked in a solution of iodide of potassium, which he covered with a plate of platinum in communication with the positive pole of a pile formed of thirty elements, and charged with a liquid adequate to produce decomposition. He placed on the other arm a compress moistened with amidon, which, being covered with a plate of platinum, was made to communicate with the negative pole. In a few moments, the amidon had assumed a blue colour, clearly proving that the iodine had been transported through the interior of the body, since the skin, which was sufficiently dry, could not give passage to a current.

In another experiment, he removed the epidermis lightly from the skin; the effect was more marked. We know that, in combining acupuncture with the action of the pile, the steel needle communicating with the positive pole is oxidated, which shews the chemical effect of the pile. Dr. Fabré-Palaprat,

profiting by this observation, has endeavoured to transport iodine, or other reagents, by means of needles, into a part of the body. To effect this he replaced the negative plate with several steel needles, disposed as in acupuncture; the iodine, or other electro-negative reagents, were quickly transported to the extremity of the needles, and thence reacted on the surrounding parts. Dr. Fabré-Palaprat assures us that he has employed this process with success to discuss engorgements which had resisted all other treatment(a).

It appears, therefore, that the constitution of the fluids of the body may be altered, certain principles may be withdrawn, and the ratio of the remaining principles may be changed. A direct control, not possessed by any other medicinal agent, may thus be established, at least in limited localities, with results which it is impossible to anticipate. In the same manner, a new mode of entrance into the human body of active remedial agents is indicated, more quick, more direct, more certain, than any other known, without the risk of being injured or altered by digestion, or of being eliminated by excretion. The advantage of introducing active remedies into diseased organs directly, without the intermediate process of absorption or circulation, and, at the same moment, withdrawing them from the body without the possibility of leaving residual quantities behind, which might at length do mischief, is great and obvious. It remains to be proved whether these active substances, controlled, as they must be, *in transitu*, by the powerful influence which transports them, will be adequate to the exertion of their usual therapeutic effects. The process, surely, deserves a trial; if it succeed, it will be a benefit conferred on human nature, but it can only be conferred by energy, industry, and enterprise, on the part of the medical profession.

The control which galvanism exercises over neuralgic pains is well known, and is frequently called in to the aid of the

(a) Becquerel, vol. iv. p. 320.

physician. The following cases were treated by Dr. Harris, one of the surgeons to the Pennsylvania Hospital.

Mr. J. L., aged 38, was affected with epilepsy, of several months' continuance. His paroxysms occurred daily, were very violent, and were accompanied with such nervous irritability, that he could not endure without complaint the noise made by any person in walking across the room. For several years previous to his epileptic attack he complained of constant pain in his head. This pain, which appeared neuralgic in its character, continued with little intermission, and was particularly violent when Dr. Harris was first consulted. Finding that all the usual remedies had been previously tried, Dr. Harris employed the galvanic apparatus of Mansford^(a). After this had been applied during a few days, the nervous irritation and neuralgic pain ceased entirely, and his epileptic paroxysms became much less frequent and violent. The neuralgia being removed, the patient urged the discontinuance of the process: it is very probable that the cessation of the epileptic fits would have been the reward of perseverance.

His next case was that of a boy, aged 11, who had been afflicted during eleven months with violent and increasing neuralgia of the head. The paroxysms came on at night; in the day-time he complained of great lassitude, and he was always depressed in spirits. Most of the usual remedies having been tried without success, galvanism was applied according to Mansford's plan. On the eleventh day of its application the pain entirely ceased, and although two years have elapsed, says Dr. Harris, he has had no return of it.

A lady, aged 48, was troubled with a neuralgic affection of her head and face, of eight years' continuance, during which the usual remedies had been tried by an eminent physician, without any good effect. On the fourth day of the application of galvanism the pain began to diminish, and on the twenty-

(a) This apparatus will be hereafter described.

third day it ceased altogether. She had two slight returns, both of which were subdued by the same means.

The next case was that of a lady, who had suffered for fourteen years from neuralgia of a most aggravated character. It was diffused over every part of the body. The head, face, tongue, heart, stomach, uterus, and almost every region of the system, were, by turns, invaded by this terrible disease. Galvanism, applied for five weeks, mitigated, but did not cure it.

A second case of the same kind was similarly treated, and with a similar result. Two cases of neuralgia, confined to the head or face, were perfectly cured by the application of galvanism^(a). Magendie finds that voltaic electricity is particularly effective in neuralgia, especially when the current is made to pass in the direction of the diseased nerve.

Dr. Prösch, of Hamburgh, found this agent more serviceable in neuralgia when introduced by acupuncture needles; but in rheumatism it proved a sovereign remedy; a single application having, as he declares, often removed an attack of chronic rheumatism. He considers that it exercises a decided influence upon the catamenia, and that it frequently produces that evacuation when applied to parts far removed from the hypogastrium, as, for instance, the arm. It has been found very efficacious in cases of amenorrhœa.

It is necessary to give a description of the apparatus of Mr. Mansford, alluded to in the foregoing statements, and his method of using it.

"In order to fulfil the indication stated at the commencement of this section, it was desirable to establish a negative point as near the brain as possible, and a positive one in some distant part of the body. Accordingly, a portion of the cuticle, of the size of a sixpence, being removed by means of a small blister on the back of the neck, as close to the root of the hair as possible, and a similar portion in the hollow beneath, and

(a) American Jour. of the Med. Sciences, vol. xiv. p. 486.

on the inside of the knee, as the most convenient place; to the wound in the neck a plate of silver, varying, according to the age of the patient, from the size of a sixpence to that of a half-crown, was applied, having affixed to its back part a handle, or shank, and to its lower edge, and parallel with the shank, a small staple, to which the conducting wire was fastened. This wire descended the back till it reached a belt of chamois leather, buttoned round the waist; it then followed the course of the belt to which it was attached, till it arrived opposite the groin on the side it was wished to be used; it then passed down the inside of the thigh, and was fastened to the zinc plate in the same manner as to the silver one. The apparatus so contrived was thus applied: a small bit of sponge, moistened in water, and corresponding in size to the aperture in the neck, was first placed directly upon it; over this a larger piece of sponge, of the same size as the metallic plate, also wetted, was laid; and next to this the plate itself, which was secured in its situation by a stripe of adhesive plaster passed through the shank on its back, another above, and another below it. If these be properly placed, and the wire which passes down the back be allowed sufficient room, that it may not drag, the plate will not be moved from its position by any ordinary motion of the body. The zinc plate was fastened in the same manner, but in place of the second layer of sponge, a bit of muscle, answering in size to the zinc plate, was interposed; that is, a small bit of moistened sponge being first fitted to the aperture below the knee, the piece of muscle, also wetted, then followed, and on this the plate of zinc. The apparatus thus arranged will continue in gentle and uninterrupted action from twelve to twenty-four hours, according to circumstances. This last is the longest period that it can be allowed to go unremoved. The sores require cleansing and dressing, and the surface of the zinc becomes covered with a thick oxide, which must be removed to restore its freedom of action. This may be done by

scraping or polishing, but it will be better if removed twice a day, both for the greater security of a permanent action, and for the additional comfort of the patient.^(a)

Dr. Marcus reports several instances of the successful application of galvanism in the great hospital of Bamberg. One was a case of paralysis of the arm, in which a complete cure was effected. Another was one of violent headach after a remitting fever, which could not be subdued by any medical treatment. The pain was lessened during the first application, when the temples, the forehead, and the neck, were moderately galvanized, and after some further application it ceased entirely. But in a few days it returned; the experiment was repeated, and by this it was entirely removed. A case of sciatica, which had resisted all remedies for more than two months, was completely cured by galvanism, after its application had been repeated for eleven days successively. Three instances are given of the control of galvanism over epileptic fits, the paroxysm having immediately ceased on bringing the hands of the patient into proper contact with the two poles of the pile. By employing galvanism with one of these patients, when he was free from the disease, the paroxysm was postponed. Dr. Marcus recommends the conductors to be applied to the spine, where the nerves of the neck, back, and lumbar region, issue.^(b)

Dr. Bischoff, of Jena, has also treated a case of epilepsy with advantage by galvanism. The subject of the disease, a man aged 43, had been the victim of this intractable malady, in its most violent form, for five years, notwithstanding the employment of the most efficacious remedies. The paroxysms returned once, twice, and sometimes three times a week, at night; and in the day-time he was troubled with spasmodic affections of the extremities and face. He was made part of the circuit of 120 pairs of plates, receiving forty shocks twice a day, at first, and at length 200; and, beside this, he was

(a) Mansford on Epilepsy.

(b) Med. and Phys. Jour., vol. x. p. 350.

allowed to remain for above five minutes in the circuit, a mode of application particularly recommended by Dr. Bischoff, as acting without interruption on the senses. Within a few days, the external spasms gradually ceased, and the galvanism being continued for two months, the epileptic paroxysms intermitted to once in three weeks (a).

The influence of galvanism on the uterus is well worthy of the attention of practitioners. The efficacy of this agent in inducing contractions of the fibres of the uterine tissue, in cases of severe flooding, has been shewn by Dr. Radford, of Manchester. Circumstances induced him to anticipate that such contractions would lessen those large venous orifices which are exposed by the separation of the placenta, and bring the walls of the uterus into firm apposition with the body of the child, so as to entirely close them. He was soon enabled to prove the correctness of these views by being called to a case of frightful internal hæmorrhage during labour, attended with extreme exhaustion. By this case he ascertained that galvanism produces a powerful contraction of the uterus, both tonic and alternate, such as he had previously no conception of. The alternate contraction excited by galvanism, applied at intervals, is analogous to, and as powerful as, that which is observed in normal labour, and the tonic contraction is greater. He applied galvanism in a case where the membranes were ruptured, and the uterus in a state of great inertia; alternate contraction was immediately produced: the membranes, previously flaccid, became tense, and protruded low down into the vagina; and when the conductors were removed, so great a degree of tonic contraction of the uterus had been induced that it could not collapse. Thus, in cases of exhaustion from hæmorrhage, the woman can be placed in such a state of safety that delivery may be postponed until it can be safely accomplished, and meanwhile measures may be taken to raise the vital powers. Dr. Radford also suggests the employment of

(a) *Med. and Phys. Jour.*, vol. vii., p. 538.

galvanism in other cases of uterine hæmorrhage, which he fully describes.

The apparatus made use of is that of Abraham and Dancer, by which the effects may be nicely graduated. The following is Dr. Radford's description of the mode of using it. One of the ordinary conducting wires is applied externally; the other conductor, contrived by himself, "consists of a strong brass stem, seven inches long, curved to suit the vagina, and covered with a non-conducting material, having a small screw at its distal extremity for attaching it to a silvered ball: at its other extremity it is received within an ebony handle, which is hollow, and through which passes a strong brass wire, looped at one end, and connected with the conducting wires. This wire is kept disconnected from the brass stem by means of a spiral spring concealed within the ebony handle. The loop is covered with silk, and is intended for the thumb of the operator when he is bringing the wire into connexion with the stem.

"When the remedy is applied, the brass ball of the vaginal conductor is to be passed up the os uteri, and moved about at intervals to various parts of the organ; at the same time the other conductor must be applied to the abdominal parietes, over the fundus uteri. Shocks may also be passed transversely through the uterus by simultaneously applying the conductor on each side of the belly. The application should be used at intervals, so as to approximate in its effects, as nearly as possible, to the natural pains." (a)

Some important observations regarding the influence of galvanism upon the action of the uterus during labour have been published during the past year (1846) by Professor Simpson, of the University of Edinburgh. In 1803 Herder attempted to induce and increase the parturient contraction of the uterus by the application of galvanism to this organ, and other practitioners had subsequently written in favour of the proposal. Several cases, intended to shew the probable in-

(a) *Introductory Lecture*, *Provincial Journal*, Dec. 24, 1844.

fluence of galvanism upon the parturient action of the uterus, have latterly been published in different medical journals. Professor Simpson's experiments were undertaken for the purpose of ascertaining, as far as possible, the exact degree of influence which galvanism possesses over the contractile action of the uterus during labour, and, consequently, the amount of aid which we might expect to derive from this power when there is occasion for having recourse to its assistance. After detailing eight cases, Professor Simpson concludes as follows: "It would be hasty, and logically incorrect, to deduce from the preceding observations that under no modification, and under no manner of application, does galvanism possess the power of directly exciting or increasing the contractile action of the uterus. Forms or methods of employing it may yet possibly be detected or devised, affording a different result; but I believe I am justified in inferring from the preceding inquiry, that, as employed at the present time, and in its present mode, it is not a means which can be in any degree relied upon for the purpose in question, and is, so far, practically and entirely useless as a stimulant to the parturient action of the uterus."^(a)

From these statements of Dr. Radford, Professor Simpson, and others, it appears that galvanism possesses an undoubted influence over the uterus, but that as yet the circumstances under which it can be made most beneficial have not been ascertained.

M. Orioli, "one of the most distinguished philosophers with whom Italy is honoured," says Becquerel, proposes to use galvanism in the interior of the bladder by means of a sound, varnished everywhere except at the point. The sound is made to communicate with one end of the pile, while the other end is put in connexion with the reins: "Perhaps," says he, "a calculus may thus be decomposed." Dr. Harle, of Norwich, conceived the same idea^(b).

(a) Monthly Jour. of Med. Science, July, 1846. (b) An. of Phil., No. xxvi. p. 114.

M. Bouryes des Mortiers dissolved a calculus, out of the body, weighing one grain, perfectly, in twenty-four hours, by galvanism. But MM. Prévost and J. Dumas have gone far towards proving the possibility of successfully employing galvanism as a means of destroying a calculus in the bladder. A fusible human calculus, placed in water, was submitted to the action of 120 pairs of plates during twelve hours. The bases and the phosphoric acid were liberated at their respective poles, but, owing to the nature of the arrangement, they reunited in a fine powder. The weight in this period was reduced by twelve grains. Other trials were made during sixteen hours, and at the end of this time the calculus was reduced to a mass so friable that the slightest pressure reduced it to little crystalline grains, which could easily pass through the urethra.

MM. Prévost and Dumas conceive that it is almost always possible to introduce into the bladder two conductors which shall be spread out at the extremity by means of a slight spring, so that they may touch the calculus by their internal surface, which, in this part, is deprived of its insulating envelope. The calculus would be thus decomposed without injury to the bladder, since the current takes the shortest distance between the two poles.

To prove that the galvanic process may take place in the bladder without injury, they introduced a properly prepared pair of conductors through the urethra of a dog into the bladder, and connected them with a pile of 135 pairs, acted on by nitro-sulphuric acid. They remarked with much satisfaction that the dog was not discoverably inconvenienced while the bladder was distended with injections of lukewarm water; yet this same apparatus was capable of decomposing water with great energy, and furnishing torrents of gas.

A fusible calculus was then fixed to a sound between the two platinum conductors, and the whole was introduced into the bladder of a large bitch; lukewarm water was injected, and the conductors were put in connexion with all the troughs

which composed their battery. After some slight movements, the animal was quiet, and endured the galvanic action for an hour. The calculus, when withdrawn, shewed unequivocal traces of decomposition. The same process was repeated morning and night for six days; but the calculus had now become too friable to permit further repetition, and had lost weight in the same ratio as the former one. The animal, after a few days' repose, was killed, when it was found that the bladder was in its natural state.

These experiments, it must be confessed, render it probable that this mode of removing calculi from the bladder may one day or other take the place of the two operations at present in use, except when the calculus consists of uric acid, which is, unfortunately, too commonly the case. The editors of the *Annales de Chimie* subjoin to this paper an observation that nitrate of potash, dissolved in the water injected into the bladder, renders the decomposition of hard, compact phosphates as easy as that of the porous kinds. They also satisfied themselves that the bladder is not injured during the action of the pile; and they think that instruments may easily be contrived for determining the nature of the calculus on which it is proposed to operate (a).

The galvanic influence may, with more certainty, be made to act on the bladder itself than on any thing contained in it: it exerts a decided efficacy in restoring the energy of that organ. The case of a lady under the care of Drs. Goodwin and Radford is described, who, after her accouchement, was unable to evacuate the contents of the bladder. All the usual remedies failed during a fortnight's trial; the catheter was employed two or three times a day, and could not be dispensed with. On Dr. Goodwin's suggestion galvanism was tried, and the first application proved successful (b).

In that most distressing and intractable disease, asthma, in

(a) *Annales de Chimie et de Physique*, No. xxiii. p. 202.

(b) *Provincial Journal*, Dec. 24, 1844.

which medical treatment so often fails in moments of the greatest emergency, galvanism has been found an easy, speedy, and tolerably certain remedy. Dr. Wilson Philip, an accurate and veracious observer, gives the following account:

"I have employed galvanism in many cases of habitual asthma, and almost uniformly with relief. The time during which the galvanism was applied, before the patient said that his breathing was easy, has varied from five minutes to a quarter of an hour. I speak of its application in as great a degree as the patient could bear without complaint. For this effect I generally found from eight to sixteen four-inch plates of zinc and copper, the fluid employed being one part of muriatic acid and twenty of water, sufficient. Some require more than sixteen plates, and a few cannot bear so many as eight; for the sensibility of different individuals to galvanism is very different. It is curious, and not easily accounted for, that a considerable power,—that, perhaps, of twenty-five or thirty plates,—is often necessary on first applying the galvanism, in order to excite any sensation; yet after the sensation is once excited, the patient shall not, perhaps, particularly at first, be able to bear more than six or eight plates. The stronger the sensation excited, the more speedy, in general, is the relief. I have known the breathing instantly relieved by a very strong power. I have generally made it a rule to begin with a very weak one, increasing it gradually, at the patient's request, by moving one of the wires from one division of the trough to another, and moving it back again when he complained of the sensation being too strong. It is convenient for this purpose to charge with the fluid about thirty plates.

"The galvanism was applied in the following manner: Two thin plates of metal, about two or three inches in diameter, dipped in water, were applied, one to the nape of the neck, the other to the pit of the stomach, or rather below. The wires from the different ends of the trough were brought into

contact with these plates, and as great a galvanic power maintained as the patient could bear without complaint. In this way the galvanic influence was sent through the lungs, as much as possible in the direction of their nerves. It is proper constantly to move the wires upon the metal plates, particularly the negative wire, otherwise the cuticle is injured in the places on which they rest. The relief seemed much the same, whether the positive wire was applied to the nape of the neck or the pit of the stomach. The negative wire generally excites the strongest sensation. Some patients thought that the relief was most speedy when it was applied near the pit of the stomach.

"The galvanism was discontinued as soon as the patient said that his breathing was easy. In the first cases in which I used it I sometimes prolonged its application for a quarter of an hour or twenty minutes after the patient said he was perfectly relieved, in the hope of preventing the early recurrence of the dyspnoea, but I did not find that it had this effect. It is remarkable that in several who had laboured under asthmatic breathing for from ten to twenty years it gave relief quite as readily as in more recent cases; which proves that the habitual difficulty of breathing, even in the most protracted cases, is not to be ascribed to any permanent change having taken place in the lungs."

Spasmodic asthma being of rare occurrence, Dr. Philip had but one opportunity of trying galvanism, and then it had no observable good effect. He thinks that in inflammation it would be injurious. A severe cough in habitual asthma does not counter-indicate the use of galvanism. In some, labouring under the most chronic form of phthisis, in whom the symptoms had lasted several years, and habitual asthma had supervened, the relief obtained from galvanism was very great, notwithstanding some admixture of a pus-like substance in what was expectorated. He thinks nothing could be more improper in ordinary phthisis than galvanism. It always gives most

ready and permanent relief in that sense of tightness across the region of the stomach which impedes breathing in habitual asthma. The patients said that the sense of tightness gradually abated while they were under its influence. The duration of relief continued generally, more or less, for twenty-four hours. In almost all, the repetition of the galvanism gradually increased the degree of permanent relief. The process was seldom used more than once a day; in severe cases twice. About a sixth part of those that have used it appear to have obtained a radical cure: it failed to give considerable relief only in about one-tenth.

Mr. Cole, house-surgeon to the Worcester Infirmary, informed Dr. Philip that no other means employed there have been equally efficacious in relieving this disease^(a).

The beneficial effects of galvanism, in asthma, have also been proved by other practitioners. M. Martinet reports the case of a man aged sixty-six years, admitted into one of the clinical wards of Professor Récamier. For a long time he had suffered from asthma, which, two days before his admission to the Hôtel-Dieu, was very much increased. The case was selected for the trial of the effects of galvanism in this disease. When the use of this agent was begun, the asthmatic disorder was in its full force; but before the first essay was over the respiration became free. Galvanism was continued every second day, and at the end of twelve applications the patient was perfectly cured of his dyspnoea: he ran up a stair of fifty steps with quickness and facility, and without being at all oppressed^(b).

With such facts as these before the eyes of the profession, and coming from such authority, it is really surprising how so effectual a mode of cure, or of palliation, as galvanism is thus proved to be, has been slighted. It should be remarked here that electro-magnetism is not the agent found successful: a

(a) *Experimental Inquiry into the Laws of the Vital Functions.*

(b) *Revue Médicale*, &c., Avril, et Juillet, 1824.

well-arranged galvanic battery of thirty silver plates, each faced with two zinc plates, so conveniently contrived that any number may be brought into action as required, will be absolutely necessary.

The following important case is one of the most convincing instances I have met of the great value of what is called magneto-electricity, as an auxiliary to the medical art : but for its aid the patient would unquestionably have died. A gentleman residing in Valparaiso had swallowed what he purchased as half an ounce of powder of cubebs. He retired to rest, but almost immediately felt a dizziness and inclination to sleep. He was accidentally discovered in the morning by Dr. Page, about twelve o'clock, with his face red and swollen, his lips dark purple, the veins of the forehead and temples turgid; the eyes rolled upward, injected, and their pupils contracted to a point; pulse moderately full, and very slow; respiration very slow and gasping. By agitating him violently he was aroused for a moment; he uttered some incoherent expressions, and sunk back into comatose sleep. Sulphate of zinc and hot mustard and water were administered with due effect as emetics, and the feet were immersed in a bath of mustard and water almost boiling. A little blood was abstracted from the temples, several large sinapiams were applied, and a strong ammoniacal liniment was rubbed over the spinal column, until the skin became very red and inflamed. When the stomach was well cleared, an oleaginous cathartic was given. The patient now appeared to be sinking: the surface was cold, and covered with a clammy sweat; the face was pallid, and of a purplish tinge; the jaw and eye-lids were fallen; and the patient, by powerful sternutatories, and severe blows on the face and shoulders with the open hand, could with difficulty be made to open his eyes. Ammonia and brandy were given, and an injection of turpentine and ammonia was administered. The liniment was again applied over the whole body. The pulse was hardly perceptible, if at times it was to be felt at all.

It was now three o'clock, P.M.: there were no signs of reaction, and the features wore the aspect of death. An attempt was made to walk the patient in the cool air, the stimulants being continued; but, after a few unsuccessful efforts to move his legs, he sunk almost lifeless into the arms of his assistants. He could no longer swallow; his breathing became short and hurried; his mouth was widely extended and his jaw fallen; nothing seemed capable of arousing him.

His medical attendants, Doctors Page, Houston, and Barabino, who seem to have left no effort untried to save the patient, now completely worn out with fruitless efforts, desisted. At this juncture the fortunate thought occurred to Dr. Page to try the effects of magneto-electricity. Cerebral congestion was urged as an objection, but admitted not to be sufficient, in such a desperate case, to set aside the experiment. While an assistant rapidly rotated the wheel, the balls were applied, at first, to each side of the neck, and then down behind the clavicles. The arms and body now moved convulsively, but the patient lay as unconscious as before. One ball was passed over the region of the heart, and the other to a corresponding point on the right side. In an instant his eyes opened widely, and with a ghastly expression of countenance; his head and body were thrown convulsively toward the operator, and he groaned. He then sunk back into his reclining posture, and was again asleep. The balls were reapplied in the same situation, with similar results, a third and a fourth time, and he cried, "no more." Reaction was now positively established, the heart had received a strong impulse. The pulse was becoming rapidly developed, and the whole surface warm. He was left quiet for an hour, and then he could be awoken by shaking, or calling loudly his name. There was no further occasion for the magneto-electric machine. He was aroused at intervals, and at eleven o'clock at night was sufficiently awake to relate several particulars. On the following morning he was pretty well. He declared

that he had heard many things the preceding day that were said by the persons about him, but that he neither had the power to open his eyes nor move his tongue to speak^(a). The last thing he recollected hearing was a remark made by Dr. Page, "that nothing more could be done but to make the experiment." From that time all was blank to him, until, as he expressed it, "he felt as if a gun had been fired off within him, which thrilled through and shook him to the very extremities:" this was the application of the magneto-electrical machine. That this patient would have died but for the electricity there can be no doubt; the sudden transition from the extreme limit of life to a flattering prospect of recovery, soon after realized, seems to settle this point. Were evidence wanted, we, unfortunately, have it in the death of a French gentleman, who took a dose of the same cubebs powder, purchased at the same place. At ten o'clock at night he swallowed half an ounce of cubebs, and at twelve o'clock next day he was a corpse. The fatal cubebs powder having been examined by a chemist, it was found that about seventy-five grains of opium had been contained in the dose taken by the patient^(b)!

It is well known that the poisonous effects of opium are greatly promoted by allowing the propensity of the patient to somnolence to be indulged. The instructive case stated many years since by Dr. Seaman, in which switching all over the body saved an unfortunate sufferer, ought to be borne in mind. If I dare hazard an opinion in such imminent cases, it would be, that no auxiliary to the usual alexipharmacs and other treatment can promise so well as galvanism, applied either through the medium of magneto-electricity or electro-magnetism, or common electric shocks, aided by powerful ten-inch sparks, driven from the nape of the neck through each foot.

(a) A similar state of consciousness to sounds has been observed in persons under the influence of the vapour of ether.

(b) *American Journal of Med. Sciences.* April, 1843.

Mr. Erickson states two cases of the beneficial influence of electro-magnetism, when the patients were sinking from a poisonous dose of opium^(a).

I have now occupied as much space in this Journal as could be fairly devoted to me, yet the subject is far from being exhausted. Much has been done by the practitioners of Dublin, but the length to which this essay has already extended compels me to confine myself to such references as I have in memory. A number of successful cases will be found recorded by Mr. Clarke in Dr. Graves's work on Clinical Medicine. A paper by Mr. Hamilton, of Dublin, will be found in the sixth volume of this Journal, in which he thus sums up the result of his trials: "As a remedial agent, I regret to say, the cases in which this combination of acupuncture with galvanism has been tried leave little to be said in its favour. Even were its efficacy greater, the application is so severe as to preclude its use, except in cases of a hopeless character, and when milder means had been resorted to in vain." See a paper on the use of galvanism in aneurism of the carotid artery, by the same gentleman, and also some objections to its employment in aneurism generally, in the last Number of this Journal, by Dr. O'Ferrall, who considers the application unsafe, as erysipelas may follow and prove fatal. Amongst the papers of Dr. Bellingham, on aneurism, in the Dublin Medical Press, will be found observations on the employment of galvanism in its treatment. In the *Monthly Journal of Medical Science*, for April, 1846, are the results of trials of electro-magnetism made in different diseases by Dr. Neligan, of Dublin. The first was a case of paralysis of the sterno-mastoid muscle in a girl aged nine years, consequent on inflammation of the cervical fascia. The second was painters' colic, succeeded by paralysis of both fore-arms. The third was paralysis of the muscles of the right shoulder. The three patients were cured in a very short time. He tried the effects of electricity in hemiplegia and paraplegia,

(a) *American Journal of Med. Sciences.* New Series.

in their chronic stage, but with no good effect; and in some apoplectic individuals he has known it produce injurious effects by hurrying the circulation.

In concluding this essay, I must correct an error into which I fell in the beginning, relative to the great uncertainty of frictional electrical machines. I mentioned, as an example, that a large cylinder machine, in my possession, could only be excited to such a degree as to give seven-inch sparks during three days in the course of the summer. I soon after discovered that a bad rubber was the cause of the failure, for on replacing it by a well-constructed one, the case became very different. I can now, even during the heaviest rain, always command from eight to ten-inch sparks; and when the weather is fine, twelve-inch sparks may easily be obtained.

ART. VIII.—*Some Remarks on the Use of Inoculation in syphilitic Buboec, as a Guide to their Treatment.* By JOHN HAMILTON, M.R.I.A., Surgeon to the Richmond Hospital.

IN Ireland, as far as I am aware, few experiments have been made by inoculating the matter of chancres or other syphilitic sores; yet, besides being the best way of studying the character and natural course of a syphilitic ulcer, I have thought it might be used as a guide for treatment in some cases of syphilis, and with this view have tried it in the tedious sores sometimes following the opening of buboes; and the results have been such as to induce me to submit them to the profession.

Though there may have been some exaggeration of the value of this test to distinguish between chancres and the sores that resemble them, it may perhaps be found useful in medico-legal investigations, where a positive opinion is demanded, as, for instance, where sores follow rape; but in ordinary practice an experienced eye can generally readily distinguish when an ulcer is syphilitic, the characters of which are so well-marked, and when it is not, the signs peculiar to the disease being ab-

sent. Hunter, as is well known, was the first to try inoculation of syphilitic matter, with the object of ascertaining how far it obeyed the laws of other animal poisons, small-pox for instance. B. Bell made experiments, on a more extended scale, to prove the difference between the poisons of syphilis and gonorrhœa. More recently, M. Ricord has published some most interesting facts on the use of inoculation in syphilis; and to this gentleman the very highest praise is due, not only for the ingenuity of his experiments, but for the extreme accuracy of his statements. The facts I have observed in my own trials of inoculation bear out in the minutest particulars the truth of his descriptions. The following case presents a sufficient example of the progress of a syphilitic inoculation.

Syphilis, chancres, and buboes; inoculation with the matter from the latter.—Case taken by Mr. Frazer. Patrick Dunne, a healthy young man, ætat. 19, admitted into Hospital, 18th September, 1846. He contracted the disease the latter end of August: he has phymosis, a chancre on the outside of the prepuce, and two buboes. The day after admission the bubo in the right groin was opened; and, in a few days after, by rest, cleanliness, and the use of the black wash, the inflammation of the prepuce was so reduced that it could be drawn back, when the corona glandis was seen, occupied by many chancres of irregular form, and discharging profusely. The bubo in the left groin was opened; after which another bubo appeared a little above this last, making altogether three, one in the right and two in the left groin: it was also opened.

7th October. The chancres were healed by local treatment, but the buboes shewed no disposition to heal; the wounds made in opening them were enlarged, and had assumed a chancreous character, their surface covered with a yellowish exudation, through which a few granulations appeared, the edges were well defined, raised, and undermined, and had a dull red areola. Ordered five grains of Hyd. c. Creta, three times a day.

13th. Two small punctures were made with a lancet dipped

in the pus of the buboes on the inside of the left thigh close to each other, and a piece of lint steeped in the same matter put over them.

14th. The second day. The punctures surrounded by an areola of a red colour; slightly raised, and, by means of a magnifier, two small vesicles can be seen over the punctures.

15th. Third day. Vesicles very distinct and becoming pustules; redness round them more marked.

16th. Fourth day. They are now decided pustules; the areolas, being larger and close to each other, have become confluent, and are less perfect in outline.

17th. Fifth day. The larger pustule has burst, and is now a chancrous ulcer.

18th. Sixth day. Both pustules are now open sores, situated on an elevated base of a pink colour; they have a raised border, the centre depressed and covered with a sulphur-coloured exudation, not removeable by wiping.

As they became irritable after this, the saturated solution of the nitrate of copper was applied on a piece of lint, so as to make a slough; this separated in a few days, leaving a healthy granulating sore, which soon healed.

30th. The buboes are healed, and on the next day he was discharged well. He had been kept gently under the influence of mercury for three weeks.

Such is pretty much the course of the inoculation of syphilitic virus. The second or third day a vesicle, the fourth a pustule, which, when broken, discloses a small ulcer, excavated in the substance of the skin, covered with a greyish yellow exudation, having a well-marked raised edge, a red areola, and a hard base, slightly elevated,—in short, with all the characters of a chancre. The ulcer, at first very minute, increases for a time and becomes covered with a scab, but after the real nature is recognized it is best to destroy it while still small, either with the solid nitrate of silver or the saturated solution of the nitrate of copper. Inoculation should never be performed with

matter from a bad sore,—acute or chronic phagedena for example,—as it produces an ulcer precisely similar in character to the one from which the matter was taken. When in Paris, a few years ago, I saw a most intractable chronic phagedenic ulcer in the thigh, the product of inoculation; and by neglecting this rule I made a very troublesome sore in one of the patients whom I inoculated with the matter from ulcers on the glans and prepuce, of long standing and very rebellious to treatment. M. Ricord gives an instance of a sore on the thigh, inoculated from a chronic phagedenic ulcer, which took the same time to heal as the original ulcer, viz., eight months(a).

In the treatment of syphilitic bubo I fully agree with those surgeons who recommend a bubo, even where suppuration has taken place, to be discussed if possible without opening it: this can be accomplished, and should be tried even where the integuments are thinned and red, and fluctuation very distinct. It can best be effected by the administration of mercury, with the application of a few leeches where the bubo is painful or very tender; and compression, gentle at first, and gradually increased by means of a compress of lint wet with the *Lotio Acet. Plumbi*, with one-twelfth part of spirits of wine, and a spica bandage. As the bubo gets pale, and the inflammatory action is on the decline, the strong tincture of iodine painted over the surface tends very much to hasten the absorption. In this way I have put back many buboes in which suppuration was fully formed. The three following cases were the last of the kind admitted into the Hospital:

I. John Hynes, a pale, delicate young man, *ætat.* 18, admitted December 29th, 1846, with an indurated chancre of eight weeks standing on the dorsum of the penis, half an inch behind the corona glandis; also a pale, pink, fluctuating bubo, of large size and oblong shape, situated on Poupart's ligament, tender, painful, and slightly oedematous. There is a thick mottled rash over the chest, belly, and loins.

(a) *Clinique Iconographique de l'Hôpital des Vénériens.*

January 1st, 1847. He was ordered five grains of Hyd. c. Cret., three times a day.

January 15. He has been kept under a gentle salivation for the last eight days. The lead lotion and compress kept over the bubo, and the strong tincture of iodine has been once applied to it. The chancre was quite healed yesterday. The matter in the bubo has been completely absorbed, the place of the bubo being now occupied by one or two enlarged glands. He was dismissed, and desired to take one pill each night at bed-time for some time longer.

II. Michael Keefe, *etat.* 17; slight figure; admitted Jan. 5th, 1847. Six weeks previously he contracted a sore on the glans penis, which soon healed, but another formed on the right side of the scrotum, where it joins the penis, in which situation he had torn the skin with his nails, and some of the matter of the other sore falling on it had produced a syphilitic ulcer. A month after, a bubo formed in the right groin, and a few days ago a second had commenced in the left groin. This last merely consists of a few enlarged lymphatic glands, but the bubo in the right groin is painful, tender, of a pale pink colour; fluctuation of matter distinct, though not very much so; it is prominent, rather hard, but not deep-seated. There was a mottled eruption on the loins, abdomen, and inside of the thighs, but no other secondary symptom.

January 6th. Ordered five grains of Hyd. c. Cretâ, with a quarter of a grain of opium thrice a day.

January 9th. The fluctuation in the right bubo more evident; the left bubo larger. To be painted with the strong tincture of iodine. 15th. Fluctuation less distinct; a compress wet with acetate of lead lotion and spica bandage; little change in the left bubo; chancre healing. 16th. As the mouth is sore, to take a pill only twice a day. 29th. The buboes have disappeared, a few lymphatic glands, scarcely larger than natural, marking their previous position.

III. James Porter, *etat.* 25, pale and sickly looking, was

lately in the Hospital with a bubo in the left groin, above Poupert's ligament, very tender, but fluctuation not very distinct; a long, narrow chancre across the dorsum of the penis, about one inch behind the corona glandis. By leeches, the application of the tincture of iodine, and pressure, with calomel and opium administered so as to produce slight salivation, the bubo had nearly disappeared, and the chancre was improving, when he left the Hospital of his own accord to spend Christmas at home. He came back in a fortnight, January 7th, 1847, with the bubo returned and worse than before; large, prominent, seated in a firm, solid, but not deep-seated base; the integuments of a dull red colour, slightly œdematous, and fluctuation very evident: it was very tender, and he had darts of pain through it. The matter in this case was so near the surface, that some of the more advanced pupils who saw the case very fairly doubted the probability of its being put back.

8th. He was ordered frictions of a drachm of the strong mercurial ointment every night.

13th. The bubo has been enlarging, and fluctuation is more distinct. Mouth affected. Omit the frictions: and to have a compress wet with Lot. Acet. Plumb. applied over the bubo, and moderate compression by means of a spica bandage.

16th. Mouth very sore, but the bubo is smaller and paler, and the fluctuation of matter less evident.

23rd. The bubo not half its former size; presence of matter indistinct; integuments over it not discoloured; chancre nearly healed.

29th. Chancre healed; bubo almost disappeared.

He was kept in Hospital a few days longer, taking a blue pill each night, and five grains of the hydriodate of potash, with sarsaparilla, twice a day, but chiefly to complete the cure of a very close stricture which he laboured under. When he left Hospital, a little hardness pointed out the place where the bubo had been.

I did not select these cases, but I took them as the three

last examples that occurred of suppurated bubo discussed by treatment, in three weeks or less. Although I by no means deny that such buboes may be put back without the use of mercury, yet, as far as my experience goes, not in so short a time, nor with the same likelihood of success. I would go even farther, and say that, besides being the shortest and surest way, and the most likely to prevent the occurrence of secondary symptoms, it is also the best as regards the general health of the patient. From the very large number of syphilitic cases I have had to treat since my connexion with the Richmond Hospital, I have *invariably* found a mild mercurial course followed by improvement in the general health; pale, sallow, thin persons have gained flesh, become stronger, and healthier in appearance. A gentleman, to whom I proposed mercury for the cure of an indurated chancre, said that his only objection to taking mercury was that it afterwards made him so fat. I have repeatedly observed this in other cases. Great praise is undoubtedly due to those gentlemen (among whom Mr. Carmichael holds so high a position) who first directed attention to the injurious effects arising from the lavish and indiscriminate use of mercury, which was so general some years ago. Their observations not only checked the abuse, but also led to a more careful use of the remedy. But perhaps it is not too much to say, that many of their followers have pushed the doctrines of these reformers too far, and have, no doubt, gone into the other extreme; not possessed of the same extended knowledge of the venereal disease, and filled with vague undefined terrors of mercury, of which they have had little practical experience, they take the symptoms of the disease in bad constitutions for the effects of the medicine, and have applied terms of reprobation to the use which should have been only levelled at the misuse of the remedy. There are constitutions in which the syphilitic poison acts with peculiar virulence; in these, soft nodes, caries of the bones, the worst kind of tubercular eruptions, venereal ulcers,

rupia, the serpiginous ulceration, destructive sore throat, with many other intractable forms of disease, wear out the patient through a long series of years. If mercury has been taken, this train of evils is laid to its charge; and though violent or protracted mercurial courses are in such cases very injurious, yet I really believe in the majority of instances mercury has nothing to say to the production of the symptoms. Very recently, a young woman was under my care in the Richmond Hospital, with tubercular eruption, chiefly on the extremities, and some of the worst secondary venereal ulcers, circular, large, deep, sloughing, and phagedenic, that I have met with,—exactly the case in which the malignancy of the symptoms would have been attributed to the previous mercurial treatment,—but she had never taken any mercury. True mercurial affections are, in my opinion, very rare,—the constitution being more to blame than the medicine. At present there is a young man in the Hospital with strumous sore throat; the whole of the hard palate full of irregular ulcers, the soft palate extensively destroyed, the uvula gone, the back of the pharynx ulcerated, and covered with yellow, slimy matter. It is precisely the throat so often observed with tertiary venereal nodes; and, if mercury had been taken, would have been set down, by some, as a sore throat in a person run down by mercury; yet this young man never had syphilis, nor ever took mercury; but when younger had lupoid ulceration of the right arm, the large, irregular, white cicatrix of which is still visible. How extensively is mercury now administered for diseases of the lungs, eyes, brain, liver, and the fibrous and serous membranes; and yet when do we meet with the sequelae, the mercurial affections of the bones, throat, eye, &c., so terrible to the imagination of many non-mercurialists? I have, therefore, no hesitation in giving mercury in cases of suppurating bubo, on the score of injuring the constitution, because, I repeat, it is my belief that a carefully conducted mercurial course has the very contrary effect, and that the health is much more likely to suffer from vain, long-continued non-

mercurial efforts, during which a most virulent animal poison is allowed to fix itself in the system. Even if the bubo is not put back by the treatment, but, after the patient has been sufficiently affected by the medicine, still continues full of matter, I think I have yet observed this good effect, that, the specific action in the bubo having been removed, it has become a simple abscess, and when opened healed up rapidly, as a common phlegmonous abscess would do. Sometimes a bubo has been already opened before the case is presented for treatment, or has opened of itself; sometimes the pain is so severe that the necessity of letting out the matter becomes urgent. When obliged to make an opening, I am usually decided in my mode of doing so by the kind of bubo. Suppurated buboes generally present themselves in two forms, either in an oblong tumour over the centre or inner third of Poupart's ligament, superficial and freely fluctuating from one end to the other, the integuments red and thinned nearly equally over the whole swelling, with nothing like well-marked pointing. It is best to open this bubo through its whole length; all matter is at once let out; there is no subsequent lodgment or chance of burrowing; and the wound, though at first large, quickly contracts.

The second form is rather more deep-seated, of a rounder shape, with a hard base, the fluctuation in the centre, and there is more decided pointing. Here I believe that opening with the caustic kali is most beneficial, allowing, when the slough separates, a free exit to the matter, and setting up a change of action in the part which tends to the dissipation of the indurated basis. After a bubo is opened it sometimes heals up in a few days, like an ordinary abscess; this is most common in the superficial variety, but in other cases the most anxious part of the treatment only then begins. I shall not dwell on the tendency which buboes have to burrow and form fistulous trajets under the skin and fascia, which unless at once slit up, naturally protract the healing of the sore: but it often happens that, a few days after the opening the wound

assumes all the characters of a syphilitic ulcer; the surface becomes covered with a yellowish exudation, the edge is red, raised, and distinct, there is a dull red areola, and the discharge is thin. Now it has appeared to me that for the proper treatment of such a sore, it is most important to ascertain decidedly, if possible, whether what seems to be a syphilitic ulcer is really so; and this, I think, is best accomplished by the test of inoculation. If the syphilitic nature is proved, mercury should be administered, and the black wash applied locally. As soon as the mouth becomes affected, the sore assumes another aspect, the yellowish exudation is thrown off, and a granular surface replaces it; the edges fall in, and cicatrization is generally rapid;—whereas simple local remedies, nitrate of silver, or ointments, &c., have extremely little effect on such sores, some of which I have seen, at the end of four or five months, rather on the increase, with all the signs of chancreous ulcers, and producing specific ulcers on inoculation.

Large chancreous bubo; inoculation producing a specific sore.—Michael Rock, ætat. 26, admitted October 14th, 1846. He became first infected with a chancre on the prepuce, about the 20th of June; it did not heal for ten weeks. A bubo appeared a month after infection, became of considerable size, suppurated and opened the beginning of September, when he first used mercury, rubbing in five times; his mouth became sore, and he discontinued it; the bubo got worse, but the chancre healed. At present there is a large and irregularly-shaped ulcer occupying the inner half of the left groin, its inferior angle extending a little downwards between the thigh and scrotum; the edge red, raised, uneven, and undermined; the surface very irregular, having a few pale granulations, but generally covered with a yellowish grey exudation. It closely resembles a large chancre, and is three inches long by one and a half inch wide.

18th. He was inoculated in the thigh with the matter from the ulcer.

21st. The two punctures had formed vesicles filled with serous pus. They afterwards became two perfectly formed chancres, and on the 24th, he was ordered Hyd. c. Cret. with opium three times a day.

28th. He was salivated November 2nd. The ulcer was reduced two-thirds of its former size; but after this the healing was protracted by some burrowing at the lower angle, between the thigh and scrotum, and by an attack of erysipelas, at that time prevalent in the Hospital. He was dismissed, cured, and greatly improved in health and general appearance, on the 27th December.

I have applied the same test to other cases of ulcers remaining after the opening of buboes, with a like result, but in none where the sore was of such extent. In one case, the matter taken the day after the opening of the bubo produced no effect, but in the course of a few days, a large gland was seen in the centre of the opening, it became larger, and fluctuation shewed it to contain matter, this was discharged, and inoculation with it produced a specific pustule and ulcer. We might be led to expect this when we consider, that a bubo is formed by the presence of the virus in one of the lymphatic glands causing it to inflame and suppurate; the inflammation spreads to the cellular tissue, external to the gland, where suppuration also takes place. Where there is no communication between the matter within the gland and that external to it, the latter is non-virulent, and consequently gives a negative result on inoculation. M. Ricord has noticed this fact. The following case will shew that reliance cannot and should not be placed on the appearance of the wound alone:

Patrick Whelan, admitted into Hospital, March 10th, 1846, with a bubo in each groin over Poupart's ligament; the left very large, prominent, oval, red, and fluctuating; the right the size

of a small apple, harder, and fluctuation indistinct, but with a pink apex. Two months ago he contracted a sore on the corona glandis, it healed in six weeks, leaving scarcely any cicatrix; the bubo in the left groin appeared a month after infection; and soon afterwards the other presented itself.

13th. The left bubo was opened freely with a bistoury, and that on the right side with the potassa fusa, the slough separated in three days, and discharged a quantity of pus.

21st. In the centre of the wound in left bubo, an enlarged gland appears, the size of a filbert; it has suppurated in the centre, a probe being readily moveable within it. There is a similar gland in the right side, but it is still hard. A compress and spica bandage were ordered. 26th. A little burrowing under the integuments in the right bubo, which was laid open.

April 7th. The wounds of both buboes have assumed a chancreous appearance, and he was inoculated in two places on the thigh, but without result.

17th. The gland in the right bubo was opened, and he was inoculated with the pus contained in it, but without producing a specific pustule or ulcer. Under local treatment alone, the application of the Lot. Acet. Plumbi, and the occasional use of caustics, the buboes healed up as rapidly as could be expected, considering the presence of the enlarged glands, which always render the progress more tedious. He left hospital well six weeks after the opening of the buboes.

This case shews the value of the test of inoculation, for had I been guided by the chancreous appearance of the bubo alone, I should have put this man under a course of mercury unnecessarily; whereas the failure of the inoculation, both from the open bubo on the 11th, and from the interior of the gland on the 17th, proved that I had to deal with a non-virulent bubo, and he got well by simple treatment alone.

A man named Thomas Quinan was admitted on the 1st of January, 1847, with a very large suppurated bubo. He was inoculated with the matter first let out, and subsequently with

that from the centre of a gland which appeared in the middle of the wound, but in both instances without effect. By simple local treatment, the lead lotion and compress, with the occasional application of lunar caustic, but without a particle of medicine, he left Hospital well, on the 29th of January, four weeks after admission.

I shall not trespass on the patience of my readers by adducing further evidence on this subject, but briefly sum up the conclusions to which the observations I have made induce me to arrive.

1. That after the opening of a bubo, the wound, instead of healing, may assume a chancreous appearance.
2. That the best way of ascertaining its real nature, whether it be virulent or non-virulent, is by inoculation.
3. That if inoculation produces a specific pustule and ulcer, the patient, besides careful local means, should be subjected to mercurial treatment, as the most effectual and rapid way of healing the sore, and ridding the constitution of the virus.
4. That if no specific ulcer follows inoculation, the wound of the bubo may be treated by simple local applications.

ART. IX.—*Observations on the Nature and Treatment of various Diseases.* By ROBERT JAMES GRAVES, M. D., Corresponding Member of the American National Institute for the Promotion of Science, Honorary Member of the Grand Duchy of Baden Medical Society, &c., &c.

(Continued from vol. xx. p. 422, of former Series.)

UNUSUAL SEQUELÆ OF SCARLATINA.

THE following case furnishes an instructive example of the difference which exists between an operation performed on a healthy and a diseased joint. In the last Number of this Journal my esteemed friend, Mr. Liston, published some "Remarks upon the Removal of loose Cartilages from the Joints,"

in which he describes a new mode of operating, worthy of this accomplished surgeon's skill. In speaking of Goyrand's operation, he says: "Here there was always a risk of the edges inflaming, of their not uniting, and of a suppurating track being thus established in connexion with the synovial cavity. Hence inflammation of the joint, destruction of the cartilages, and a cure (?) by anchylosis, or amputation of the member. This proceeding I practised long ago in some three or four instances: in the last, the patient nearly lost his life, and with difficulty was enabled to preserve his limb. I should be very sorry to repeat the process."

This forcible passage sufficiently displays the well-known danger of meddling with healthy joints. The annexed letter, which I received in March, 1845, from Doctor Bernard, of Dundrum, shews the comparative impunity attending operations connected with joints where the synovial membrane is already in a state of chronic suppuration, brought on by a constitutional malady:

"MY DEAR SIR,—The following case is given from memory; but although more than two years have elapsed since its occurrence, the facts are indelibly impressed on my mind, and appear as fresh as if they were of recent occurrence.

"Martin Byrne, aged five years, living at Miltown, County Dublin, of a fair complexion and delicate frame, was attacked with scarlatina during the month of November, 1842: the tonsils were greatly inflamed and swollen, and required the use of the solution of nitrate of silver.

"About a week or ten days after the disappearance of the eruption, an uniform swelling, without any discoloration of the integuments, and accompanied with excessive pain, presented itself behind the right ear; in a short time it extended above the ear in one direction, and below the mastoid process in the other. As soon as the fluctuation became evident, I made a puncture in the centre of the swelling, and gave exit to about

an ounce of purulent matter, of thin consistence, of a canary yellow colour, and without any offensive odour. After a few days, matter escaped from the external meatus of the same side; the discharge from this outlet was always increased by pressure on the external abscess. As the first opening I made had a tendency to close, I made another incision lower down, over the mastoid process, which was kept open till the matter ceased to flow. Almost immediately another abscess formed at the back of the neck; this was opened, and matter discharged of a similar nature to that above-mentioned.

"The right elbow-joint was next attacked, commencing with great pain, and considerable constitutional disturbance. The pain was speedily followed by swelling, which attracted attention the sooner, owing to the attenuated state of the arm and fore-arm. As the swelling of the joint increased, the integuments around became thin and transparent, and traversed with an unusual number of veins. A sense of fluctuation soon became apparent, especially in the spaces between the olecranon process and the condyles of the humerus, in which situations the synovial membrane was protruded by the distending fluid. Judging from the character of the abscesses which formed about the neck, their progress, &c., I had little hesitation in concluding that purulent matter was secreted by the synovial membrane of the humero-cubital articulation, and distending its sac. As the hectic fever was daily increasing, and the poor boy becoming greatly emaciated, passing many nights without sleep, I made an incision between the olecranon and external condyle into the joint, and gave exit to not less than two ounces of purulent matter, in every respect similar in consistence and colour to that which we have before described as having been discharged from the ear and neck. The joint became now greatly diminished in size, the patient experiencing much relief. A linseed meal poultice was ordered to be applied around the joint, and the arm to be kept quiet. The matter continued to exude from this opening for a fortnight

or three weeks, when the left elbow-joint became similarly affected, and was lanced in due time, giving vent to a quantity of matter, resembling in character that which was discharged from the other elbow. Many weeks elapsed before these joints were restored to a healthy state.

"The treatment adopted at this period consisted of tonics, and any nourishing diet which the child wished for. He, for the most part, refused to take wine and broths, and was principally supported by cow's milk, of which he generally took from three to four pints every day.

"In a short time another abscess formed over the sacrum; when mature, this was also lanced, and, after discharging purulent matter for a week or ten days, gradually closed up.

"I now began to flatter myself that my little patient would be relieved from further suffering, and that, although reduced to the greatest state of exhaustion and emaciation, he would soon recruit his lost strength. However, to my great disappointment, new symptoms presented themselves in an unexpected quarter. He now complained of most acute pain in the right lumbar region, which completely destroyed his rest at night, and rekindled fever in the system. The pain was speedily succeeded by fulness of the abdomen on the same side, which increased gradually, accompanied by great distress. Suddenly a small tumour, about the size of a Spanish nut, made its appearance in the corresponding groin, beneath Poupart's ligament, and external to the femoral vessels: it soon increased to the dimensions of a pullet's egg, giving a distinct sense of fluctuation. From the mode of its formation and progress, I concluded that I had a psoas abscess to deal with. As the former operations were attended with so much success, and afforded so great relief to the patient, I resolved to open this abscess likewise. Some days, however, elapsed before the parents of the child would give their consent. I now made a valvular incision (as recommended by Abernethy) into the lower part of the sac, and gave exit to not less than a quart of

purulent matter, of the same canary yellow colour, and resembling in every respect that which was discharged from the ear, neck, elbow-joints, and sacrum. I dressed the wound with lint and adhesive plaster, and after a few days allowed more matter to flow out. This treatment was continued from time to time, until the abscess contracted and ceased to discharge pus. From this time the boy commenced to regain strength, and the hectic fever to decline.

"A space of nearly eight months elapsed from the time this child was first attacked with scarlatina to the period of his recovery. I paid my little patient a visit during the present week. He appears in the enjoyment of good health: the right elbow-joint is, however, in a state of ankylosis, the fore-arm being permanently bent on the arm; (I repeatedly directed the parents to use passive motion, as the only means of guarding against this termination); he has, however, the use of the left arm, and walks well.

"I remain, my dear Sir, truly your's,

"H. BERNARD."

In the next case, for the notes of which I am indebted to Dr. Percival Hunt, the fatal termination of the disease was quite unexpected, and awfully sudden. A *post mortem* examination was not permitted, but it is quite evident that the abscess had penetrated some large vessel, and thus occasioned violent hæmorrhage. The blood is said to have been dark, and, consequently, venous. As, however, no medical man was present when the unfortunate accident occurred, and as death seldom so speedily follows venous hæmorrhage, I am more inclined to believe that it was arterial: if venous, then the instantaneous manner in which death followed the first gush of blood must be ascribed to the regurgitation of atmospheric air into the heart.

"Miss W. H., aged seven years, of small make but healthy habit, was taken ill in Cork on 5th June, 1844. Her mother,

apprehensive of scarlatina (to the contagion of which she had been exposed), and anxious to have her under care in Dublin, brought her that night by coach to Abbey-leix. On the 6th she was pretty well; but on the 7th she had vomiting and sore throat, and was brought on to Dublin the 8th. That evening, on her arrival, she was in very high fever; skin burning, very red; tonsils slightly swollen, and exhibiting a few small patches of lymph on their surface.

"9th and 10th. Fever continued high, although she had been freely purged with sulphate of magnesia, and leeches had been applied to the external fauces. The right side bled freely, the left not so well.

"11th. Fever still high; lymphous transudation on both tonsils; much greater in quantity on right than left side; right side of throat externally much swelled; left but very little.

"12th. Right side of throat greatly swelled externally, so as almost to obliterate the angle of the jaw; secretion on internal surface was much increased; left side scarcely swelled at all; other symptoms as before. Given minute doses of tartar emetic.

"13th. Dr. Graves saw her. The internal fauces and uvula coated over with lymph; thicker on right side than left; external tumefaction of right side greatly increased, extending down to chest, very hard, tense, and shining; felt so hot she could only bear a single sheet over her. Tartar emetic solution to be continued; internal fauces to be washed once daily with a ten-grain solution of nitrate of silver.

"16th. Tumefaction has been lessening, and becoming more defined every day since last report, although still hard; internal fauces still thickly coated with lymph: she is more sprightly. Dr. G., who has constantly seen her since yesterday, ordered a poultice over the tumour. The tartar emetic purged her so freely as to oblige its being discontinued.

"On 17th, tumour became soft, and next day was opened, when a large quantity of pus flowed out. The poultice was continued, and she was given broth.

"She continued to improve in every way, the abscess discharging freely, and lymph secretion of fauces separating until the morning of the 20th, when, suddenly, after taking a drink, a gush of dark-coloured blood filled the abscess, and flowed out from its orifice: in a few seconds she was dead.

"N. B.—It is to be observed, that the right side was throughout more affected than the left. The leech-bites bled more freely on that side; there was more lymph internally, and more tumefaction externally. The lymph internally and tumefaction externally appeared to proceed *pari passu*."

EPILEPSY.

Dr. Blackmore, of Bath, published a valuable series of papers on nervous diseases, in the London Medical Gazette (March and April, 1845). At p. 922, he remarks that "epilepsy has been brought on by a sudden depletion of the vascular system." I saw, in 1843, a case confirming the accuracy of this observation, and which appears worthy of being recorded. A clergyman in the King's County, of active habits and slender frame, had been liable to occasional attacks of epistaxis from his boyhood until the age of thirty, when a bleeding more copious and obstinate than usual came on in the evening. His brother, a very intelligent medical practitioner, happened to be in the house, and, having found other usual remedies inefficacious, proceeded to draw blood from the arm; this was done *ad deliquium*, when the epistaxis ceased; but while he was still in the faint, convulsions took place, and were observed to be of unusual violence, and to partake much of an epileptic character. He got well in the course of a quarter of an hour, and slept tranquilly during the night. On the following day he was attacked with decided epilepsy, and has continued ever since a frequent sufferer from the disease. I may here take occasion to remark incidentally, that I have found *dry cupping* to the nape of the neck a most valuable auxiliary in the treatment of epistaxis.

CHOREA.

In the former series of this Journal (a) I entered into some details respecting the best means of removing this disease. Since that time, I was induced by the reported beneficial effects of sulphate of zinc in certain spasmodic diseases, whether of an hysterical or of a truly epileptic nature, to try its efficacy in chorea, and I can assert with confidence that no other single remedy is so generally useful. In several severe cases it has, without the aid of any other medicine, cured the patient speedily and perfectly. In one case, which I saw with Mr. Barker, it failed altogether, and so did everything we tried, except opium; which, however, was only useful in so far that it procured sleep at night, without which the patient, a boy of thirteen, must have been speedily worn out, so violent and continued were the spasmodic motions of the affected limbs. In the case referred to, time gradually brought about recovery. The sulphate of zinc may be given simply dissolved in rose-water, in half-grain doses, repeated often in the day. When *tolerance* of the salt on the part of the stomach is obtained, it will be often borne to the amount of ten or fifteen grains in the day; but we must always study its effects, and use the smallest quantity that will ensure a cure.

Authors who have written on the subject of chorea agree in stating that it very seldom persists after puberty. "We see little of it," says Dr. Blackmore, "in adults, yet it will sometimes *continue* for the whole life." It appears plain, from this observation, that Dr. Blackmore had never witnessed the first access of chorea at an advanced age, and consequently I think it right to mention that Dr. Ireland consulted me formerly respecting the late Mr. Dyas, a respectable apothecary residing in Castle-street, who, when seventy years old, was attacked by chorea in as uncomplicated a form as I ever saw. The disease was very severe, and lasted many months.

(a) Vol. ix. p. 492.

Thus do diseases of the nervous system, like the waning intellect, affect a second childhood!

PSORIASIS, SYCOSIS, TINEA.

Early in the year 1846, my friend Mr. Pakenham, of Henry-street, consulted me respecting a young clergyman who was annoyed by a redness occupying the skin of the upper lip. This redness was permanent, but liable to certain remissions and exacerbations, dependent on the state of the weather or the effects of diet. It was accompanied by a slightly elevated state of the engaged portion of the skin; but it had not the elevated pimples of acne, or the suppurating tubercles of sycosis. It might, perhaps, be termed psoriasis labialis, and, when much inflamed, secreted an increased quantity of epidermis. It annoyed him much, and prevented him from using his razor with comfort. He was very anxious to have this disfigurement removed, and had made use of many remedies, both general and topical, without benefit. As the disease had lasted several years, and had resisted all the remedies which had been tried, both by London physicians and myself, I advised him to go to Aix-la-Chapelle for the purpose of using the sulphureous waters. The German physician whom he consulted there considered that the disease depended upon a strumous origin, and directed him not to use the waters, but to try a course of cod-liver oil. This remedy agreed well with his constitution, and after some time he was able to consume two ounces of it daily, which, in about two months, effected a complete cure. That the German physician took a correct view of its nature I have no doubt, as several members of my patient's family have suffered from scrofulous diseases. It may be well to mention that the cod-liver oil was made into an emulsion with syrup, mucilage, and orange-flower water, in which shape it is comparatively palatable.

Since this occurrence I have often had success in the treatment of local diseases of the skin which I suspected to depend

on a scrofulous taint, and have thus cured obstinate cases of sycosis, impetigo, and psoriasis. I may add that, in all such patients, I have combined with the internal remedy the insertion of one or more issues at a distance from the part of the skin affected; and in sycosis I follow Alibert's plan of maintaining an eruption on the arm with tartar emetic.

In certain diseases of the skin, particularly those allied to psoriasis, I have found the use of gelatine baths of the greatest possible service. Two gallons of size may be added to each warm bath for an adult, or, if the odour of even fresh size is objectionable, a similar quantity of isinglass, or calf's foot jelly, may be used. A course of such baths, particularly in summer, will be found a most valuable auxiliary in curing dry and scaly diseases of the skin.

A patient of mine was affected with psoriasis of the scalp for several years. It was extensive but not severe, and did not interfere with the growth of the hair. He sought no remedy until it encroached on the forehead and thus disfigured him. He was cured by using hot air sulphur baths for fifteen or twenty minutes daily for a month, and applying the following ointment to the roots of the hair every night at bed time: Binioidide of mercury, one scruple; prepared lard, one ounce; oil of lemon, five drops. An oil-silk bathing cap was worn at night, and the ointment was not washed out in the morning.

On a former occasion I have spoken of the utility of lotions of nitrate of silver applied to the scalp in tinea capitis, and I think it now right to add, as a caution, that a solution of ten grains to the ounce, rubbed over the affected spots with a camel's hair pencil, produced in one little girl a sudden inflammation of the whole scalp, causing many sloughing boils and such a morbid process as, it is true, perfectly cured the original disease, but, for the time, totally destroyed the hair on many parts of the head. After two years, however, the hair again grew partially upon these spots, and at the present moment the new crop appears so much on the increase, that I am in hopes

the deformity will be but partial. Since this untoward occurrence, I always commence the treatment with a much weaker solution.

In cases of psoriasis of the scalp and ears, back of the neck and forehead, cases which are often of an extremely obstinate and troublesome character, and occur frequently in young females, I have seen Sir P. Crampton adopt with success the following treatment:—A sixteenth of a grain of corrosive sublimate, dissolved in half a drachm of spirit of wine, is to be taken three times a day, in four ounces of a mixture, composed of equal parts of infusion of yellow bark and decoction of sarsaparilla, together with Donovan's Liquor Cinchona, and the fluid extract of sarsaparilla. Along with this internal treatment, he advises the application to the parts of dilute citrine ointment, with the addition of about one-third of the Unguent. cere. albæ. The above internal remedies are often useful in scrofulous ophthalmia. The late Dr. Colles likewise used the corrosive sublimate in this affection, both internally, and as a lotion externally, dissolved in spirits of wine.

CHRONIC FURUNCLES.

I have obtained permission from my friend, Dr. Orpen, of Cove, to publish the following particulars of a disease of the skin to which he became subject, and the symptoms of which his letter accurately details:

"MY DEAR SIR,—I would feel much obliged by your giving me your opinion on a very painful and troublesome furuncular affection I have been subject to for some time. The first attack I had of it, which is nearly five years ago, came on my hands and wrists, and I attributed it to some matter that got on my hands while dressing a case of phlegmonous erysipelas of the scalp, attended with *profuse* suppuration. That attack lasted three or four months. I had another severe attack last year after attending a bad case of sloughing

phagedæna of the penis, scrotum, and groin, from primary syphilis. I was not aware that I had any cut or scratch on my finger at the time; I used the greatest caution in touching the sore, and did not cut myself at the time; still I had a very painful eruption of boils afterwards, which lasted three months. I had a third attack last summer, and I am now suffering from the fourth!

"The eruption is more a purple hard tubercle, than a pustule or boil; in some very bad ones they are preceded by a small vesicle, with a white areola about the size of a sixpence or shilling, in which case there is some deep suppuration afterwards; but they generally suppurate very slowly and imperfectly.

"I intended to have consulted you about it when in Dublin, but as I was free from them at that time, I did not wish to trouble you; but this eruption is now becoming more frequent, and appears to be brought on by anything that irritates the skin: a hard ride on horseback is generally followed by several of them. I have tried various remedies, such as mercurial alteratives, with soda; sarsaparilla, and Brandish's Solution; and quinine (which gave me a headach); I have frequently cut them across with a scalpel, or applied caustic to them, which prevents *some* from suppurating. I was advised to use calomel and James's powder in small doses, with spare diet, which relieved me at the time, but the eruption returned soon after. I was also lately recommended tonics, with porter and nourishing diet; which latter,—I mean the porter and full diet,—generally bring on headach, so I am afraid of them.

"I have also consulted your most valuable work, expecting to find the same consolatory advice that I have so frequently had from it in fevers and other cases, but I did not find any case exactly corresponding to my own. I have, therefore, taken the liberty of applying to you directly, and laying this statement of my case before you. Let me know particularly as to diet. I used to be very dyspeptic, but of late I feel myself in

better health and spirits, only that I am so much annoyed by these *boils, pustules, or tubercles*. My pulse used to be 75 to 80; it is now 60.

"I am, dear Sir, your's most sincerely,
"THOMAS H. ORPEN."

I advised Dr. Orpen to try the following prescription, recommended by Dr. Erichson in the Medical Gazette of November 14th, 1845: Liquor of caustic potash, one ounce, and half an ounce of bicarbonate of potash, in seven ounces of water. One table-spoonful to be taken twice a day in half a tumblerful of nettle tea, and the dose to be gradually increased until an ounce is taken at a time. Dr. Orpen persevered for a considerable time in the use of this remedy, occasionally intermitting it, and was at length completely restored to health. He used, by my advice, a generous but not heating *diet*. With respect to inoculation of the system by means of morbid animal matter, I have seen frequent instances of it in cases where such inoculation was new to me. A young lady had erythema nodosum of her legs, some of the tumours of which, being neglected, and irritated by friction, ran into superficial pustules. Her mother opened some of these with a needle, and, during the operation, a drop of the fluid fell upon the back of her middle finger. In ten minutes after she felt a tingling and painful sensation in the unbroken skin of the part, which she had merely wiped and not washed, being entirely occupied with her daughter. The spot soon became inflamed, and next day an angry pustule, exactly similar to those on her daughter's legs, formed on the finger.

PITYRIASIS.

No author with whom I am acquainted has given a more accurate description of this disease, when it affects the trunks and extremities of adults, than Mr. Plumbe(a). In addition to

(a) See Practical Treatise on Diseases of the Skin, 4th edit. p. 243.

the remedies he recommends for the constitutional treatment of this affection, I may mention the local application of tincture of iodine, in the manner recommended in *tinea capitis*. It is right to observe, that when any solution, whether of sulphate of copper, nitrate of silver, or the tincture of iodine, is to be applied to the scalp or to the skin, it ought to be done, not with a camel's hair pencil, but with a brush of hogs' bristles, such as house painters use, the brush portion being about the thickness of the middle finger. This renders the application at once more speedy and efficacious.

COD-LIVER OIL IN STRUMA.

Having mentioned the use of cod-liver oil in the strumous diathesis, I avail myself of this opportunity of corroborating the testimony of those (and, among the rest, of Dr. Bennett) who have extolled the use of this medicine in strumous diseases in general. I have seen it do what I never saw any other remedy effect, i. e. reduce to the natural size amygdalæ that were enlarged from the period of extreme youth. A most remarkable instance was that of a young lady, aged about 19, whose amygdalæ were as large as small walnuts, and which I treated without effect for two years, both by iodine internally, and nitrate of silver locally. A three months' course of cod-liver oil left no trace of the disease behind. Under the influence of this oil the enlargement of the cervical glands in young persons of a scrofulous habit frequently disappears, and the tendency to the formation of phthisis and the recurrence of strumous hæmoptysis is occasionally overcome. In persons of a consumptive tendency I consider this as a valuable addition to our remedies.

Having mentioned the spitting of blood that so frequently forms the first obvious symptom of consumption, a remarkable case is brought to my memory which I saw along with Dr. Stokes and Mr. Corr. It was that of a young man, a partner in an extensive manufactory in this city, who was

attacked on his birth-day with a spitting of blood. The disease did not recur until his next birth-day, and thus he was attacked for several successive birth-days. The last hæmoptysis ushered in the usual train of symptoms attending on galloping consumption. The recurrence of the symptoms on his birth-day evidently arose, not from any real periodicity in the disease, but from nervous and vascular excitement produced by apprehension.

HAIR—ITS STRUCTURE AND DISEASES.

Physiologists are agreed that the hair consists of matter somewhat analogous to horn or nail, secreted by a vascular sac imbedded in the skin, and sometimes reaching as far as the subcutaneous tissue. There is reason to believe that this sac is abundantly supplied with nervous matter, and embraces within it the bulb-like root of the hair, which is now generally thought to be of a homogeneous texture, and not tubular or hollow in the centre. The colouring matter of the hair is said to be diffused through its substance; and most authors are of opinion that the hair, once formed, is then placed beyond the reach of any change connected with the organism. The phenomena of plica Polonica seem difficult to reconcile with this hypothesis, and my observation that hair, generally speaking, grows grey first at the tip,—the want of colour proceeding from the point towards the root,—seems to establish the contrary supposition, and proves that the hair, during its growth at least, is an organized body, endued with vitality, or otherwise it could not happen that colouring matter once deposited through its texture could disappear. And the probability of this opinion is strengthened by the rapidity with which it disappears, for even a long hair, when the greyness at its extremity has commenced, becomes entirely grey in the course of a few days, the absorption of colour proceeding rapidly to its root. Examples, too, have occurred of an evident sensibility existing in hair otherwise healthy.

Some physiologists have attributed the colouring matter of the hair to the sebaceous follicles, which, they say, secrete an oil, by the combination of which with certain principles contained in the hair the colour is developed; but, according to this opinion, the hair once dyed would not lose its colour in the manner I have described above. For practical purposes, then, we may consider the hair to resemble a plant imbedded in the surface of the body, and consequently its healthy or its diseased functions must be connected not only with changes occurring in the hair and its bulb, but with those which take place more immediately in contact with the latter. Thus the hair may cease to grow, and baldness ensue, as in old age, from decay and absorption of the bulb itself; or the same result may in youth be produced by causes which injure the vitality of the bulb, or change the structure of the skin in which it is implanted.

CASES IN WHICH GREY HAIR REGAINED ITS NATURAL COLOUR.

A field officer in a distinguished regiment had served for many years in tropical climates; had undergone the fatigues of the Burmese and other subsequent campaigns in the East Indies, during which he contracted dysentery and fever, and various maladies peculiar to hot countries; and finally, after many years' service, was obliged to return to Ireland for the purpose of regaining his health. When he consulted me he was worn and emaciated, and complained much of dyspeptic and nervous symptoms, with a constant tendency to bowel complaint. He was then forty-eight years of age, and his hair had, during a few years preceding, become quite white; while his forehead, parts of his cheeks, and back of the neck and shoulders, presented many large maculae of a brown colour, nearly as deep as the areola round the nipple of a pregnant woman. In the course of four years he visited me again, having during the interval remained with the dépôt of his regiment in England, and gradually regained his health under

the influence of regimen and his native air. On his second visit I scarcely recognised my former patient. He had become robust and healthy-looking, and the maculae had altogether disappeared, while his hair had regained its original brown colour: not a single grey hair remained. The hair is now soft and silky, and has continued of its natural colour during the last two years; but it is remarkable that the whiskers have remained white.

In the year 1837 I was called by Dr. Beauchamp to see a gentleman, aged 67, labouring under the then prevalent influenza. He was a strong, hirsute man, and his chest was covered with long white hair, which had been black in his youth. We blistered him on the chest, and when he recovered from the disease the hair on the part that had been blistered grew again, but was now quite black, and has continued so since. I need scarcely add, that he is very proud of this unexpected symptom of returning youth, and readily exhibits to the curious this portion of his chest.

In the year 1845, Mr. Daly, of Henry-street, consulted me in the case of a robust shopkeeper, aged about 35, who had a slight attack of apoplexy, followed by incomplete hemiplegia. As the disease exhibited a tendency to relapse, we judged it necessary to establish a permanent drain from the vertex, to which a blister the size of a crown-piece was applied, and the surface was made to discharge for several months by means of Albespyre's plaster. When his recovery was complete, the blistered part was allowed to heal. I should have remarked, that this gentleman was perfectly bald on his forehead, vertex, and temples, and the skin of the scalp was smooth and shining. A few weeks after the blister was healed, a growth of hair took place, in the form of a ring, encircling the blistered surface at the distance of two lines.

Miss M., affected for many years with tinea capitis and psorophthalmia. The hair on the vertex had become quite grey, and there were several bald spots in the neighbourhood.

She was recommended by Mr. Wilde to use the common gas-water as a lotion to her head. After a long-continued use of the remedy, the hair grew on the bald spots, and both it and that on all the affected parts recovered the natural colour. This was the more remarkable, inasmuch as the parts of the head to which the remedy was not applied are still covered with grey hair. Mr. Wilde observed a similar restoration of the colour of the hair from the use of Donovan's brown citrine ointment.

Mr. B., aged about 35, when first seen six years ago, had hair of a greyish colour, from the intermixture of black and white hairs; the latter in comparatively very small number. He complained that his hair had been getting grey and falling out for some time previous, which he ascribed to bad health, consequent on impaired digestion. Twelve months afterwards the grey hairs had entirely disappeared, his health and strength having, in the meantime, much improved, chiefly by travelling.

Mrs. —, aged 35, had a very severe attack of fever, after recovery from which her hair turned quite grey, and began to fall out. The head was then shaved, and the shaving was repeated several times, after which there was an abundant growth of hair of the original auburn colour.

Dr. Stokes has communicated to me the following fact relative to the hair, and which forms a singular exception to what is usually observed in phthisis. A young lady, of fair complexion and dark hair, became consumptive, and her luxuriant hair rapidly fell and deteriorated, being replaced by a thin, woolly, coarse crop. The tubercular disease proceeded slowly, lasting about fourteen months. About six weeks before her death, a new crop of hair appeared, if possible more beautiful than her original hair, and grew with such unexampled rapidity, that at the period of her death she had a splendid head of hair. Physiologically it is deserving of remark, that though this young lady had considerably emaciated in her body and limbs, her face and features preserved all the rotundity and

plumpness of beauty; the scalp, therefore, was, in all probability, by no means deficient in nourishment. The unexpected appearance of hair excited vain hopes in the breast of the poor patient and her friends, who could not be persuaded that this new product of life was but the forerunner of death.

A friend of mine, a practitioner of great experience, now residing in Athy, came to Dublin to consult me while this paper was in the press. He is seventy years old, and labours under various nervous symptoms, which commenced about two years ago with *hemiparesis* of the right side of the head, attended with a singular and exquisitely painful affection of the right half of the scalp, which was as sore as possible to the touch, and each hair in it felt, as my friend expressed it, like a minute poniard implanted in the skin. Nothing could exceed his agony for four days and nights, during which he never closed an eye: at last a minute pustule, that soon desiccated, appeared round each hair, and in a few days his scalp got well. During the height of the disease the engaged half of the scalp was red, but not erysipelatous. As far as I can understand this remarkable and rare case, it must be considered as an acute inflammation of the bulbs of the hair:—strange enough, it was not followed by a falling out of the hair.

Whatever opinion the reader may have formed as to the relative value of the various theories formed to account for the growth and colour of the hair, it seems clear that some practical deductions follow from the foregoing facts. In the first place, it is evident that the growth and colour of the hair may be most beneficially influenced by the application of stimulants to the skin; and it is more than probable that numerous cases of baldness and want of colour would yield to such an application of stimulants, if we only knew how to proportion the quantity of stimulants to the exigencies of each individual case. There is here a difficulty, probably insuperable, but which still we should try to surmount. Certain it is that many popular remedies which enjoy a great reputation, contain a combi-

nation of oily and stimulating substances, such as castor oil, goose-grease, and tincture of cantharides. This composition, with the addition of a little sweet-smelling essential oil, often exerts, in my opinion, a decidedly beneficial effect when rubbed into the roots of the hair by means of a piece of flannel. The quantity of the tincture of cantharides should not exceed ʒi. to ʒi., and our object should be by each application to produce a slight evanescent redness while the skin remains anointed with oil. When it is believed to be essential to produce a rapid desquamation of the epidermis, short of vesication, I know no better means than painting over the surface with the tincture of iodine every third or fourth day. A good pomade for the hair consists of equal parts of castor oil and lard, with the addition of attar of roses, about eight drops to four ounces.

To many it may appear trifling and beneath the dignity of a practical physician to dwell so much on this topic; but in truth mankind have always attached much importance to this ornament of the human body; and grey hairs and baldness are to many quite as appalling as real disease, or even death. This feeling is not confined to the moderns, for we find the poets and the moralists of antiquity abound in passages to the same effect. The physician who has witnessed the strange degradation of appearance which follows the shaving of the female head in fever, must acknowledge that the grief of the ancient widow who laid her tresses on the tomb of her deceased husband^(a), had at least a greater shew of poignancy than is exhibited by our modern ladies, who on these occasions partially conceal, but never destroy, this cherished ornament. And they are probably right, for the operation of natural causes renders the growth of hair slower than the decrease of sorrow. I was not aware of the great degree of beauty which the hair

(a) So in the *Helena* of Euripides, the heroine exclaims when about to simulate the widow's garb:—

ἰγὼ δ' ἴς αἰχμὴς βᾶνα βροτρίχους ἐρῶ, &c.

"I will go in, cut off these crisped locks," &c.

imparts, until Mr. Clibborn shewed me, in the Royal Irish Academy, a skull of a Peruvian female, in which the bones of the face and forehead were as usual exposed, but the desiccated scalp still bore a luxuriant crop of flowing ringlets, which imparted no small degree of beauty even to this death's head (a). I may here mention, that I once attended a lady upwards of eighty years of age, who exhibited all the usual appearances of withered senility, but who had a magnificent head of coal-black hair. Contrary to what might be expected, she bitterly deplored the circumstance, for this emblem of youth was but ill assorted with every other external sign of old age. "Two years ago," said my patient, "my maid, in combing me, discovered a grey hair. I was overjoyed, and hoped that others would speedily follow, but none have appeared since." She was the only person who ever asked me for a *receipt* to turn the hair grey.

We are aware that the least highly organized tissues are capable of being reproduced after being destroyed; now many facts have come under my notice which seem to authorize the conclusion, that when the original stock of bulbs has been destroyed in the scalp, a new stock is frequently manufactured by the powers of nature, and thus an entirely new crop of hair arises. It is well known that cases have occurred where supernumerary teeth have been produced; and, in the celebrated Countess of Desmond, it was asserted that when the adult set of teeth failed from old age, a rejuvenescence took place, and a third set of teeth appeared. I was always inclined to doubt the truth of this assertion until my friend, Dr. Curran, related to me the following particulars respecting his great-grandmother, Mrs. Waterworth. She had always been a remarkably healthy woman, was extremely active in her habits, and died, apparently of mere senility, aged ninety-five. When

(a) The mummy here referred to is now in the Museum of the Royal College of Surgeons. See Mr. Wilde's description of it in the "*Parthenon*," for the 15th of June, 1839, where the head and hair are figured.

about eighty, her sight, which for fifteen years previously had been so weak as to prevent her reading, became so completely restored, that at the time of her death she could, without spectacles, thread the finest needle, and read without fatigue or difficulty the very smallest print: she about the same time got a completely new set of teeth. The exact number of teeth that grew at this unusual period I have not been able to ascertain; but of the fact, as stated above, there can be no doubt. This rejuvenescence was not consequent on any change of place or habits, but it was accompanied by a very considerable increase of strength, which continued to the last. Dr. Curran has a very curious copy of Mr. Easton's valuable work on Longevity, in which the author has added in manuscript notes many interesting particulars respecting Mary How, of Mapleton, Derbyshire, who at the age of 110 got several new teeth, whilst her hair resumed its former colour; Peter Bryan, of Tynan, County Tyrone, who cut several teeth at the age of 117; Lady Angelique Domengieux de Sempe, of Nouillac, in France, who got teeth at 90, and lived thirteen years afterwards; Margaret Melville, of Kelle, Fifeshire, who lived to 117, and got teeth at 100; John Minniken, of Maryport, Cumberland, whose hair grew so abundantly in his old age, that twenty wigs were made of it between his 80th and 112th year; and many similar instances, of many of which Mr. Easton was himself cognizant. These cases are, perhaps, not more extraordinary than that the costal cartilages should not have been ossified in the case of Old Parr, who lived to 152, a fact for which we have the authority of a committee of the Royal Society (among whom was the great Harvey) appointed to make the *post mortem* examination. As an example of a somewhat similar exception to general rules, Dr. Curran permits me to mention the case of his friend, Doctor Harrison, now a practising physician in the Isle of Man, who grew one inch in stature between his thirtieth and thirty-second year.

HAIR OF THE CARTHAGINIANS.

Much uncertainty prevailed as to what race of mankind the Carthaginians belonged, until the publication of a learned work by Gesenius on Phœnician Inscriptions. He has proved, as Dr. Prichard testifies, that the Hebrew is identical, or nearly so, with the language of the Canaanitish, or Phœnician people on the coast of Syria, and with the Punic of Africa. The Carthaginians must consequently have been allied to the Jews, and were therefore a long-haired people. This is shewn to have been actually the case by the following fact, recorded in the writings of Appian and Strabo, and thus recited by Rollin:

"The Consuls made no great haste to march against Carthage, not suspecting they had anything to fear from that city, as it was now disarmed. The inhabitants took the opportunity of this delay to put themselves in a posture of defence, being all unanimously resolved not to quit the city. They appointed as general, without the walls, Asdrubal, who was at the head of 20,000 men, and to whom deputies were sent accordingly, to entreat him to forget, for his country's sake, the injustice which had been done him, from the dread they were under of the Romans. The command of the troops within the walls was given to another Asdrubal, grandson to Masinissa. They then applied themselves to the making arms with incredible expedition. The temples, the palaces, the open markets and squares, were all changed into so many arsenals, where men and women worked day and night. Every day were made 140 shields, 300 swords, 500 pikes or javelins, 1000 arrows, and a great number of engines to discharge them; and because they wanted materials to make ropes, the women cut off their hair, and abundantly supplied their wants on this occasion."

The Tyrians who founded Carthage became very numerous, and therefore did not, like many other Greek and Phœnician colonists, lose, in the progress of time, their native language. They found it, however, necessary to learn also the vernacular tongue of the Numidians, among whom they set-

tled; and for that reason Virgil, no doubt, as Mr. Hodgson^(a) observes, calls them "Tyrios bilingues." Now modern researches have proved that the Berbers of Northern Africa are the descendants of the ancient Numidians; and therefore the latter were by no means Negroes, but had long hair and a tawny complexion. As the ancient Numidians occupied many, if not all the littoral provinces of Spain, where to this day evident traces of the Berber language exist, especially in Biscay, we can now understand how it came to pass that the Carthaginians experienced no difficulty as to language when they subjugated Spain, and marched towards the Alps and Italy. Thus the two greatest intellects of antiquity were developed in individuals of different races, but both Africans: Hannibal belonged to the Caucasian, Æsop to the Negro type.

ART. X.—*Observations on Placenta Prævia; with Cases.* By ALEXANDER TYLER, M.D., Lecturer on the Theory and Practice of Midwifery in the Original School of Medicine, Peter-Street.

[Read before the Dublin Obstetric Society, and the Harveian Society, London.]

THE ancients appear to have been fully aware of the great danger attendant upon all hæmorrhages in the latter months of utero-gestation. Hippocrates says, "that the after-burden should come forth after the child; for if it come first, the child cannot live, because he takes his life from it as a plant doth from the earth."^(b) But as to the causes or treatment of such, little seems to have been known until the commencement of the seventeenth century.

Guillemeau, a favourite pupil of the distinguished French surgeon, Ambrose Paré, in his work entitled *Le Moyen de secourir la Femme quand l'arrière faiz se presente le premier*, published early in the seventeenth century, argues

(a) Vide Wilde's Narrative, second edition, page 143; and Appendix, pp. 600, 613.

(b) *De Morbis Mulierum*, book i.

strongly in favour of the operation of turning, as the safest treatment for both mother and child in all cases of flooding in the latter months. There is considerable difference of opinion as to whether he and his contemporary, Mauriceau, were aware of the placenta being sometimes originally implanted on the os uteri. Dr. Lee^(a) seems to think they were; however, the quotations he gives in favour of that opinion are not sufficiently clear, in my estimation, to prove their knowledge of that most important fact.

De Graaf, according to Renton^(b), was the first to state distinctly that the placenta may be attached to other parts of the uterus besides the fundus. He says, in his work on females, "Dicendo certum ac determinatum placentis locum haud assignare posse,"^(c) It appears from this quotation that he was aware of the placenta not having any fixed point of attachment to the uterus. But it was left for Paul Portal, in 1672, to shew that the original situation of the attached placenta, in these cases, was at and around the cervix uteri, as the following passage from his work clearly proves: "*Je glissai mes doigts dans les orifices ou je sentis l'arrière faix qui se presentoit et qui touchoit l'orifice de la matrice de tous cotés avec adhérence en toutes ses parties, excepté par le milieu qui se trouvoit divisé jusques a la membrane laquelle n'étant pas ouverte, n'y les eaux écoulées, jeus beaucoup de facilité a tourner l'enfant.*"^(d) Again, in another part, he says, "*en la glissant je sentis le placenta qui environnoit en dedans l'orifice interne.*" These extracts alone, I think, are sufficient to shew the correct knowledge possessed by Portal as to the true seat of attachment of the after-birth in placenta prævia.

Giffard^(e) was the next to publish cases in corroboration of the views adopted by Portal, and to express a doubt as to the opinion, even then generally entertained, that the placenta,

(a) *Edin. Med. and Surg. Jour.* April, 1839, p. 389.

(b) *Idem.* July, 1837, p. 244.

(c) *De Mulierum Organis*, p. 291.

(d) *Portal's Traité des Accouchemens*, 1683.

(e) *Cases in Midwifery*, by W. Giffard, 1734.

when found at the os uteri, was loose and unattached. In concluding the history of Case No. 115, he observes: "I cannot implicitly accede to the opinion of most writers on midwifery, which is, that the placenta always adheres to the fundus uteri, for in this, as well as many former instances, I have good reason to believe that it sometimes adheres to or near the os internum, and that the opening of it occasions a separation, and, consequently, a flooding." Again: "In this case the placenta adhered, and was fixed close and round about the cervix uteri, as I have found it in many other cases, so that upon a dilatation of the os uteri a separation has always followed, and hence a flooding naturally ensues."

The next writer on the subject who has a claim to be noticed is Roderer of Göttingen, who, in his *Elementa Artis Obstetricæ*, published in 1753, gave the clearest and most complete description of placenta prævia then published. About the same period Levret published his views upon the subject of uterine hæmorrhage depending on the implantation of the placenta over the os uteri, and to these two eminent men are the Continental schools unquestionably indebted for having given them a complete and correct explanation of the subject.

Among our own countrymen, Sir Fielding Oulde, in 1742, gave the history of a case of placenta prævia at the full time, where he turned the child, and saved both it and the mother; but he, like most of his contemporaries, fell into the common error of supposing the placenta to have been loosened from its original seat of attachment, and, being separated, to have glided into the cervix uteri.

Smellie, in 1752, thus observes: "The edge or middle of the placenta sometimes adheres over the os internum, which frequently begins to open several weeks before the full time; and if this be the case, a flooding begins at the same time, and seldom ceases entirely until the woman is delivered."^(a) Lastly, I have to notice an author whose name is familiar to us all, as

(a) Vol. i. p. 143.

being the first to draw the immediate attention of the profession in this country practically to the subject, I mean Dr. Rigby, of Norwich, whose classic essay on uterine hæmorrhage appeared in 1775, and, within a few years, not only attained a wide circulation at home, which the numerous editions called for fully attest, but was also translated into the German and French languages; and, notwithstanding the previous publications of Roderer and Levret, circulated extensively in those countries, sufficiently proving the value set upon the work; and although published subsequent to those of Roderer and Levret, I think it is unjust to accuse him of borrowing his ideas from them, as it appears he was totally unacquainted with the writings of the former, and it was not until after the first edition of his treatise was at press that Levret's dissertation on this subject fell into his hands.

Placenta prævia is now generally ascribed to the ovum escaping through the Fallopian tube into the uterus before the decidua membrane lining that organ has acquired a sufficient degree of firmness and tenacity to arrest the ovum at the mouth of the tube, and thus permitting it to descend to the cervix uteri at once, as must inevitably be the consequence in all cases, only for this provision.

Dr. Radford, of Manchester^(a), describes the membrana decidua as consisting of two layers: first, an outer, which is lost at the Fallopian tubes and os uteri; and, secondly, an inner, which stretches across these openings. Thus, when the ovum descends, it is arrested at the mouth of the Fallopian tube by the inner layer; in his own words: "At this early stage of gestation there is no funis umbilicalis, the embryo, in appearance like a small speck of mucus, being attached immediately to that portion of the ovum which enters the uterus last. The consequence of this arrangement is, that the part of the ovum most distant from the embryo is in contact with and carries forward the inner layer of the decidua, whilst the portion of the fetal membranes with which the embryo is connected is

(a) Pamphlet, and Lond. Med. Gaz.

immediately applied to the more vascular outer layer; and hence the placenta is found in all natural cases a little to one side of the fundus uteri." Now, he supposes that when the inner layer is deficient, so as to allow the ovum to drop into the cavity of the uterus, that then the placenta will become attached to the cervix, or sides of the uterus.

Dr. Burns ascribes placenta prævia to the mode in which the ovum presents as it enters the uterus. For instance, if that side enters first to which the embryo is attached, he supposes it unites itself with the inner layer of decidua to form the placenta, and that, as the ovum increases, the decidua reflexa being pushed before it, the placenta at last comes to be attached over the os uteri.

Velpeau's opinion is, that the future situation of the placenta depends upon the adhesion of the decidua membrane to the uterus being greater at one point than at another; for example, he conceives that if the adhesions are stronger above, the ovum will descend; and, in like manner, laterally, according to the side where the membrane is least adherent.

Professor Moreau^(a) claims the credit of having first pointed out the predisposing causes of this abnormal affection to depend on a want of consistence of the decidua membrane, or of due adhesion of it to the uterine parietes. He also supposes that the ovum receives an impulse on leaving the Fallopian tube, which, together with accidental circumstances, such as mental emotions, sudden fright, &c., may cause its descent to the cervix, where it becomes fixed, if arrested by the plug of gelatinous mucus which fills the cervico-uterine orifice: or if the latter is open, and the mucous plug not sufficiently firm to arrest its progress, the ovum passes on, and is shortly expelled, along with an accompanying discharge, constituting what he called an "effusion," or "effluxion."

Lastly, M. C. Negrier, of Angers, on the supposition of the ovum being sometimes fecundated by the semen during its

(a) Vol. I. p. 330.

passage through the uterus, gives it as his opinion, that in cases of placental presentation the ovum had already reached the cervix before it was fecundated, after which it becomes fixed there^(a).

On the structure of the human placenta, and the nature of its connexions with the uterus, various opinions are still entertained. The Hunterian doctrine of the placenta consisting of two portions, a maternal and a fetal, and the belief in the existence of utero-placental vessels, has been denied by Dr. Robert Lee. On the other hand, Dr. Burns, from a careful examination of the original preparations of the Hunters, and likewise from investigations conducted on the parts in their recent state, has arrived at conclusions corroborative of those of Hunter.

Dr. Radford, in 1832, published an essay on the structure of the human placenta, and its connexions with the uterus, in which he endeavours to prove the structure of the placenta to be entirely fetal and vascular. In describing a preparation, he says: "The placenta, which was everywhere pervaded with injection, proves every part of it to be accessible to the fetal vessels; and there is no part in it which answers to the portion that is usually described as the maternal or cellular." This observer succeeded in injecting the uterine structure through the umbilical vein with size, the effect of which he describes as follows: "The entire structure of the uterus was permeated by the injection, and some of the sinuses partially filled, and all of them coloured by it." In the same essay he also demonstrated the existence of placento-uterine vessels, which he describes as so minute, that they are not capable of being injected with wax, or of admitting, perhaps, red blood. Through these minute vessels, however, he supposes an interchange of the more subtle parts of the blood do take place between the mother and fetus.

^(a) *Recherches et Considerations sur la Constitution et les Fonctions de Col de l'Utérus*, par C. Negrier, 1846, p. 46.

According to the investigations of Dr. Reid, the fetal-placental vessels form tufts, each composed of an artery and vein, which are received into sacs, formed by the inner coat of the vascular system of the mother, and hang there like the branchial vessels of certain aquatic animals. These sacs, according to him, are filled with maternal blood through the curling arteries of the uterus (first noticed by the Hunters), and are emptied by the utero-placental veins, which return the blood to the mother, without its ever having left her own system of vessels.

Dr. Reid also observed that some of these tufts of placental vessels were prolonged into certain of the uterine sinuses, and these ramified to the distance of a quarter, half an inch, or even an inch, in their interior; at other times they merely projected into the mouths of the sinuses. At all times they were covered by a prolongation of the inner coat of the venous system of the mother, so that no extravasation of the maternal blood could take place. The Hunters believed that the intervals between the fetal-placental vessels were filled up by a cellular tissue, into which the maternal blood is poured. Reid says there is no such tissue connecting them.

The uterine vessels are described by Weber as forming a net-work in the interior of the placenta, and he has not noticed the prolongation of the fetal-placental vessels into some of the uterine sinuses; these constitute the chief points of difference between him and Dr. Reid. The latter further states, that the umbilical artery and vein forming each of the tufts divide and subdivide exactly in the same manner, and at last terminate in each other. Weber supposed that the inosculating artery made several loops and turns at the end of the villi, or tuft, before entering the nearest venous trunk. Some late investigations made by Mr. Dalrymple would appear to bear out Weber's view as to the termination of the arteries by capillaries before entering the venous trunks.

I copy the following analysis of Mr. J. Goodsir's description of the structure of the human placenta from *Cornack's Monthly Journal* for June, 1845: "According to Mr. Goodsir, the walls of the tuft and villi of the placenta are composed of the following textures. 1st, a fine transparent membrane, continuous with the internal membrane of the vascular system of the mother, described by Dr. J. Reid. 2nd, a layer of cells (the external cells of the villi), described by Mr. Dalrymple. 3rd, a membrane even finer and more transparent than the external, immediately bounding the blood-vessels, and which he names the internal membrane of the villus. 4th, a layer of cells, the internal cells of the villus. 5th, the blood-vessels of the tufts. The two first form the maternal portion, the two last, the fetal portion of the placenta." He concludes from the anatomical constitution of the villi, "that the function of the external cells of the placental villi is to separate from the blood of the mother the matter destined for the blood of the fetus; they are, therefore, secreting cells, and are the remains of the secreting mucous membrane of the uterus."—"The function of the internal cells of the placental villi is to absorb through the internal membrane the matter secreted by the agency of the external cells of the villi. The external cells of the placental villi perform, during intra-uterine existence, a function for which is substituted in extra-uterine life the digestive action of the gastro-intestinal mucous membrane. The internal cells of the placental villi perform, during intra-uterine existence, a function, for which is substituted, in extra-uterine life, the action of the absorbing chyle-cells of the intestinal villi."

Having considered the structure of the placenta, and the nature of its connexion with the uterus, we are now prepared to discuss the question,—from what set of vessels does the chief flow of blood issue? This is a most important point to settle, for upon a knowledge of it will depend our power to

decide as to the merits of a mode of treatment highly recommended of late by the eminent professor of midwifery in Edinburgh.

In order that we may arrive at a fair conclusion on this disputed point, it becomes necessary to quote the opinions of some other late writers upon the subject. Dr. Lee says he has observed at least twenty cases of *placenta prævia*(a), where "the first attack of hæmorrhage was so sudden and profuse as to endanger life, and, in several, reduced the patient to a condition which rendered recovery impossible, though the most prompt and energetic treatment was employed. In all these cases the blood could not have escaped from the mother through the medium of the placenta, but from the mouths of the great veins left open in the lining membrane of the uterus, by the detachment of the placenta, in consequence of which a direct communication was established between the cavity of the uterus and the cavities of the heart." He further observes: "The small curling arteries in the placental decidua, which convey the whole of the maternal blood that enters the placenta, could not possibly replenish the organ for a very considerable period, if the maternal blood were entirely to escape in a few seconds from the exposed decidua veins: the fetus, also, would invariably perish in cases of placental presentation after the first attack of hæmorrhage, if this were the fact, which is known to be quite the reverse."

The open gaping mouths of the uterine sinuses, so well described by Dr. Lee, as the chief source of the hæmorrhage in *placenta prævia*,—as indeed in every other form of uterine hæmorrhage previous or subsequent to delivery,—are beautifully illustrated by a plate in the late Dr. Ingleby's valuable treatise on this subject, to which we would particularly direct the attention of our readers.

Dr. Ashwell(b) remarks: "It is easy enough to shew, to the

(a) *The London Med. Gaz.* 1845, p. 1106. (b) *Ibid.* p. 1156.
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satisfaction of the most incredulous, the great openings existing in the lining membrane of the uterus, exactly opposite the attachment of the placenta, and which are covered by interposed decidua. Into many of these the tip of the finger may be inserted, while their course, and extensive communications with the uterine sinuses, full of blood, is evident at a glance. Surely, such an organization affords the clearest proof of the source of the hemorrhage in placenta prævia." Dr. Lee's observations are, in his estimation, "altogether unanswerable."

Dr. Radford(a) recognises two sources of the hemorrhage in placenta prævia: first, from the uterine sinuses; secondly, from the decidual surface of the placenta. According to him: "So long as the placenta is alone separated, and its organization remains perfect, bleeding takes place from one or both of the seats before-mentioned. But after labour has existed some time, the placenta becomes not only further separated, but its structure is disrupted, and its texture broken up, so that another source of bleeding is now created under the last-mentioned circumstances, as the blood now proceeds directly from its own circulatory system."

Professor Simpson, of Edinburgh, asserts, "that the hemorrhage comes chiefly from the placenta itself;"(b) and, on this supposition, recommends the novel practice of the extraction of the placenta before the child. He says: "When it is only partially separated from the uterus, the blood enters freely by the adherent portion of placenta that is detached." This would be admitting a direct communication to exist between the fetal vessels and those of the mother,—for in what other manner could we account for the sudden prostration of the

(a) London Medical Gazette for 1832, page 1246. Since then he has, however, changed his opinion with regard to a direct vascular connexion between the mother and the fetus; being convinced that his conclusions at that time were incorrect. See Lancet for 27th February, 1847.

(b) Northern Jour. of Med., Jan. 1846; and London and Edin. Monthly Jour., 1845-6.

latter after a gush of hemorrhage. Dr. Simpson accounts for it in a different way. He says: "One cause contributing to prevent hemorrhage after the total separation of the placenta is, the abstraction from the uterine vascular system of the derivative or sugescent power of the maternal circulation in the placental cells, and the consequent tendency of the blood to flow in the more direct and freely communicating channels that exist between the uterine arteries and veins. Besides, the general and direct forward current of the blood along the course of these larger uterine veins diminishes, and, in a measure, destroys the tendency which it might otherwise have, either to flow backwards, or to escape by any existing lateral apertures of the vessels. Among the other remaining means by which hemorrhage is more or less prevented after the detachment of the placenta, I may mention, first, the occasional presence of tufts of fetal vessels left in the orifices of the uterine veins, and forming not only immediate mechanical obstacles, but nuclei for the ready coagulation of the blood; second, the formation of coagula in some of the collapsed venous tubes and orifices; and third, the presence for some hours, or even days, after delivery, of the collapsed decidua over the apertures seen in the veins on the interior of the uterus."

I now leave it to the judgment of those who, from practical experience and correct anatomical knowledge, are able to decide whether we are to receive this new theory of Dr. Simpson's, and with it to adopt his new method of treatment, or not. For my own part, until stronger evidence is brought forward in corroboration of his views, I would rather persevere in the old established line of practice in this emergency, than adopt a plan so much opposed to our present state of anatomical knowledge and practical experience.

Mr. Newnham, of Farnham, has published in the Medical Gazette(a) the result of his experience in cases of placenta prævia. He met with thirteen cases of placenta prævia since

(a) London Med. Gaz. Nov. 1845, p. 1247.

the 1st of January, 1812, and of these, twelve mothers recovered. The fatal result in his thirteenth case, cannot be attributed to the operation of turning, although the woman only survived it two hours, for it appears he had recourse to it solely as a forlorn hope, the patient being exhausted from previous hæmorrhage before he saw her. It is also to be borne in mind that this was a midwife's case, where he was called in too late. The above thirteen cases were all that ever occurred to him: "they are not, therefore, selected cases, or taken from one class of life, but may be considered as a fair sample of country practice." He attributes his success in the foregoing twelve cases, "first, to his invariable rule in every case of doubtful hæmorrhage, to make himself perfectly certain as to the cause of the flow of the blood; secondly, having ascertained that it was from placental presentation, to lose no time in effecting delivery by turning; to turn at once, if the os uteri were sufficiently dilated or dilatable; and if not, to adopt every possible means to secure this object, and to turn as soon as it was obtained; and thirdly, to the possession of an extremely small hand, which enabled him to do all he had to do with less violence to the mother, and, consequently, with less present hæmorrhage, and less subsequent irritation."

The result of Dr. Lever's cases, also published in the *Medical Gazette*(a), affords a much higher average of mortality: for of thirty-four cases he lost seven mothers. Eighteen of these cases are stated to have been only partial; yet version was performed in thirty cases. In these thirty, seventeen children were saved.

I hope the profession generally will follow the good example shewn by Drs. Newenham and Lever, for it is only by our having the results of a large number of cases that we will be able to come to a conclusion as to the comparative mortality of cases treated by the ordinary mode at the present day, and by the practice of late advocated by Drs. Simpson and Radford.

(a) *London Med. Gaz.*, Dec. 1845, p. 1422.

In a paper read by the former before the Medico-Chirurgical Society of Edinburgh, Dec. 4, 1844, on the spontaneous Expulsion and artificial Extraction of the Placenta before the Child, in Placental Presentation, he contrasted the results of the practice generally followed with that of 120 cases collected by him ("some previously recorded, and others collected from private sources), in which the placenta had come away before the infant, either expelled by the natural efforts alone, or in consequence, in several instances, of the reputed bad management of the accoucheur."(a) Of these only eight mothers died, affording an average mortality of one in fifteen. Whereas, out of the former, amounting to 339 cases in all, treated by version and the ordinary rules of practice, 115 mothers died, or one out of every three. "The same cases also shew that, though much blood may have been escaping before the placenta comes away, yet as soon as the separation is complete, the hæmorrhage usually ceases, or becomes very trifling. A complete separation of the placenta is thus proved to be far less dangerous than a partial one,—a fact that at first may appear somewhat paradoxical, but which is readily explained by the structure of the fetal placenta. The hæmorrhage comes chiefly from the placenta itself. When it is only partially separated from the uterus, the blood enters freely by the adherent portions, and escapes as freely from the surface of the portion of placenta that is detached. From a consideration of these facts, Dr. Simpson was led, four years ago, to propose to the Obstetrical Society, whether, in cases of hæmorrhage from placental presentation, we should not sometimes adopt the practice of extracting the placenta, in order to arrest unavoidable hæmorrhage, leaving the fetus to be expelled by the natural efforts of the uterus, or otherwise." Dr. Simpson stated he had adopted this procedure in one case in autumn, 1844, with perfect success, the placenta having been extracted two hours before the birth of the child. "This method, he thought, would be found particularly

(a) *London and Edin. Monthly Jour.*, Feb. 1845.

applicable to those sets of cases in which turning or rupture of the membranes is inexpedient or impracticable; as, in cases where hæmorrhage occurs to an alarming extent, while the os uteri is still small and rigid; in unavoidable hæmorrhage in first labours; in placental presentations, when the patient's strength is already so sunk, from the flooding, as not to allow, without danger, of immediate turning or forcing delivery; in cases where the child is known to be dead, &c. &c."

Dr. Radford(a), of Manchester, limits the extraction of the placenta—1st, "Where the danger to the woman is so great from exhaustion, as to render the ordinary plan of delivery by turning the child hazardous. 2nd, Where there exists some obstacle to the extraction of the child, either from distortion in the bones of the pelvis, or tumours connected with it, or in its cavity, but connected with the soft parts. 3rd, Where the child is dead."

Out of the nine following cases of placental presentation that I have witnessed, only one was attended with fatal results, and in that the placenta was extracted. This was a case of unavoidable hæmorrhage at the fourth month, and its history, at least, is not such as to encourage us in a repetition of the practice, at all events, at such an early period of utero-gestation.

CASE I.—In December, 1842, I was requested to visit a poor woman, aged 40, residing in New-row, and in the fourth month of her second pregnancy, who was represented by the messenger to be bleeding to death. We found her in bed, where she had been obliged to lie down two hours before, on account of weakness produced by a profuse discharge of blood; labour pains had commenced that morning, and had continued all day, accompanied with hæmorrhage, but not such as to alarm herself or friends until 4, P. M. Her countenance was now ghastly pale and anxious, pulse quick and feeble, indicating the loss of a considerable quantity of blood. On examination, the os uteri was found dilated to the size of a crown-piece, with the pla-

(a) London Med. Gaz. 1845, p. 1291.

centa attached centrally over it, hæmorrhage profuse, and increasing with every pain. The placenta was extracted, and an attempt made to hook down the fetus with a finger, which failed. A slight draining continuing, a plug was then introduced, which checked it; and shortly afterwards ergot of rye was administered, without, however, producing any good result.

On the second day the plug was removed, and with it a portion of placenta which had been left; the os uteri was found, on examination, to be now nearly closed.

On the fourth day she complained of pain in her back, but not of such a character as to attract particular attention. Six days after this, her only complaint being weakness, she was ordered light nourishment, chicken broth, &c. No particular change occurred until the thirteenth day, when she first complained of her throat, and of inability to open her mouth; she could only swallow fluids, and even these with difficulty. An examination being instituted, the os uteri was found perfectly contracted and impervious; she had experienced severe pain in the back all night, with occasional spasms of the facial muscles. On the following day the jaws were completely locked, and the body bent backwards, in a state of opisthotonos: death finally put an end to her sufferings on the sixteenth day.

I think every one must admit, from the symptoms above noted, that this was a case of tetanus; and may we not pronounce it traumatic, when we consider the exciting cause to have been an injury inflicted on the cervix uteri by the forcible extraction of an adherent placenta.

CASE II.—The next case was a patient that a neighbouring practitioner requested me to attend for him, saying that he had another engagement at the time, and merely observing, in a cursory manner, as he left me, that I should go quickly, as the woman had lost some blood. On reaching the house a few minutes afterwards, I found her in a most exhausted state from hæmorrhage. The nurse produced a vessel containing a large

quantity of coagula, and said these were only a portion of what had been discharged within the last twelve hours. On examination, I found the os uteri not fully dilated, and the placenta presenting over it. There was no pulse at the wrist, at least that I could feel. Fearing to deliver her in the state she was then in, I plugged the vagina, and ordered some port wine. Dr. Ireland saw her shortly afterwards, and whilst making an examination, requested me to allow him to bring down the foot, which was then within reach, as he was afraid any further loss of blood might prove fatal. This he succeeded in effecting by means of two fingers introduced into the os uteri, and then charged me to be in no hurry in terminating the delivery, but merely to assist the expulsive efforts of the uterus, and in the intervals of the pains, to keep up constant gentle traction upon the limb, so as to make the thigh act the part of a plug. In this way delivery was not completed for three-quarters of an hour, by which time the patient had recruited under the continued administration of wine. The child was, of course, dead. The mother recovered, without any bad results.

I have been thus particular in detailing the management and history of this case, that it may prove as useful a lesson to those beginning the practice of midwifery as it was to me. I am convinced that, had I not attended to the judicious and practical directions I had received, but, on the contrary, had hurried the delivery, that in place of saving the woman's life, she must have, in all probability, perished from the effects of the sudden shock, in her then prostrate condition. As it was, we had the greatest difficulty in supporting her fast-ebbing strength, in the interval afforded us by the course pursued, which would undoubtedly have been speedily extinguished, had we followed a contrary mode of delivery. Now this is one of the cases where Drs. Simpson and Radford recommend the extraction of the placenta—"the danger to the woman being so great from exhaustion, as to render the ordinary plan of delivery, by turning the child, hazardous."

CASE III.—Mrs. W., of Corn-market, ninth pregnancy, was visited on the 12th of January, 1845, by Messrs. Evans and M'Murray, who, finding her in a dangerous state from loss of blood, came for me. On examination, I found the vagina filled with clots, the os uteri was well dilated, and the placenta presenting. With little difficulty I succeeded in passing my hand between the placenta and uterus posteriorly, and in seizing a foot, which having brought down externally, the hæmorrhage completely ceased. The delivery was shortly afterwards completed. This child was born alive. The mother recovered rapidly.

CASE IV.—Mrs. R., New-street, states that about a month since she was attacked with a shedding, without any apparent cause. This continued increasing, at intervals of ten days, until Tuesday, the 16th of June, when a quantity of fluid escaped, preceded for the first time by uterine pains. From this date until the commencement of her labour, a period of a week, there was a gush of blood during each pain, which amounted to about eight or ten in the course of the twenty-four hours. I saw her on Monday, the 22nd, at half-past nine P. M., and, on examination, found the os uteri dilated to the size of a shilling, the cervix still elongated, and the placenta presenting. The vagina was at once plugged with a sponge, which effectually stopped the hæmorrhage. About one, A. M., June 23rd, the sponge was removed, and the os uteri found to be dilated only to the size of half-a-crown. During each pain a gush of blood occurred; the sponge was therefore reintroduced, which stopped the hæmorrhage completely. At four, A. M., the os uteri was sufficiently dilated to admit of the introduction of the hand, by means of which a foot was brought down, and delivery effected of a small male child, alive. This woman recovered in the usual time, without the supervention of a single bad symptom.

CASE V.—I was sent for by the nurse of the Western Lying-in Hospital, at eleven, P. M., Nov. 6th, 1845, to see Mrs. L., of

Beresford-street, aged 30. This was her sixth pregnancy. Her previous labours had been all natural and rapid. By her own account the pains first commenced at three, P. M. At six o'clock, whilst sitting at tea, she felt a copious discharge coming away, which she supposed to be the waters, but on inspection, in place of water, it proved to be blood; the hæmorrhage came on with each pain. By the account of her attendants she had lost several pints of blood before I visited her at half-past eleven. She is stated to have fainted twice before they lifted her into bed. Skin cold and clammy; face ghastly pale; complains of faintness and thirst. On examination, the vagina was found filled with clots, the os uteri high up, undilated, and rigid; hæmorrhage to an alarming extent occurring with every pain. A sponge, soaked in vinegar and water, was immediately introduced into the vagina, and passed up to the os uteri, and small quantities of wine were occasionally administered. Under this treatment she soon began to rally, and the pains to recur more regularly, without any appearance of hæmorrhage. 7th, at one, A. M., a clot was forced out past the sponge, and half an hour afterwards a powerful pain expelled the plug, along with a large coagulum. The soft parts being now well dilated, I passed my hand up to the os uteri, and found the placenta completely covering its orifice, so it was with some difficulty that I was enabled to separate it posteriorly, and to carry my hand into the cavity of the uterus; a large quantity of liquor amnii at this time escaped. After passing the head, the first member that presented itself was a hand; avoiding it, I got hold of a foot, and, after about fifteen minutes, succeeded in delivering her of a full-grown male child, unfortunately past resuscitation. The placenta being removed, and the binder carefully applied, she was left under the charge of the nurse for the night. On visiting her again at two, P. M., I found her in a very exhausted state, after passing a sleepless night, the wet clothes about her never having been changed since my last visit. She was ordered an opiate at night. On the fol-

lowing day (the 8th) she complained of pain over the left side of the fundus of the uterus, which subsided under the usual treatment. On the 21st she was attacked with phlegmasia dolens, for which complaint she was removed to hospital, but ultimately recovered.

The third and fourth cases which I have related illustrate the great advantage to be derived from the use of the *tampon* when the soft parts are rigid and undilated, as by means of it you save the profuse loss of blood to the patient, which must otherwise take place before the os uteri is sufficiently dilated to admit of the introduction of the hand for the purpose of turning. I am aware that many object to the use of the plug in cases of unavoidable hæmorrhage at the full time, from the dread of internal hæmorrhage going on without the attendant being aware of it. Now, although I recommend its use in cases of rigidity, I would by no means have it used indiscriminately, and for the purpose of allowing the medical man to leave the house; on the contrary, I would have him never leave the bedside of his patient until he was perfectly certain that the hæmorrhage was arrested; this favourable result will soon be indicated by the pulse of his patient, and by her fast returning strength. I have been really astonished at the rapidity with which they recruit after its introduction; and not only that, but I have remarked they acquire a degree of confidence in their present state of safety, which materially assists the uterine contractions. For my own part, I cannot see any risk of internal hæmorrhage from the use of the plug in complete placental presentation, until full dilatation has taken place, which is all we recommend it for; of course, the attendant should be on the watch, and if he saw any appearance of sinking about his patient, he should immediately withdraw the plug, and ascertain distinctly the state of things. With these and other precautions, which must strike every well-educated accoucheur, I have no hesitation in adding my testimony to those who advocate the use of the plug in certain cases, and at

a particular stage of placental presentation. The plug, when properly introduced, acts the part of a compress against the bleeding mouths of the vessels (a). I prefer a soft sponge for the purpose, sufficiently large to fill the vagina. When introduced, after being steeped in cold vinegar and water, let the superior extremity, which should be the narrowest, be fairly brought into contact with the bleeding mouths of the cervico-uterine vessels.

CASE VI.—Mrs. Callaghan, aged 31, was admitted into the Western Lying-in Hospital, in labour of her second child, on the 4th of March, 1846; had enjoyed good health until the first of the month, when hæmorrhage commenced, and continued at intervals until this morning, when her friends applied to the hospital for aid. On admission the os uteri was found well dilated, with a lip of the placenta and an arm of the child presenting. It being decided to deliver immediately by turning, Mr. Speedy accomplished the delivery with little difficulty or delay. We were not successful in restoring the child to life, although we could distinctly see for a time the impulse of the heart's action against its chest. The mother recovered without a bad symptom.

CASE VII. was one of complete placental presentation. The woman was admitted into the Western Lying-in Hospital on the 12th of April, 1846, in a very exhausted state from loss of blood; the membranes were ruptured, which not effectually checking the hæmorrhage, Dr. Churchill, on account of her exhausted state, &c., eventually delivered her by the crotchet on the evening of the same day. This woman had also a good recovery.

CASES VIII. and IX.—The two remaining cases were pa-

(a) Taking this view, M. Negrier of Angers insists upon the introduction of the plug *obturant* as the best, or even the only means to be relied on, for arresting hæmorrhage after delivery, when the placenta has been attached to the cervix uteri, especially if assisted by external compression over the body of the uterus.—*Recherches par Negrier*, p. 131.

tients that I saw delivered safely in the Dublin Lying-in Hospital, when a pupil, some years ago. The first was a case of complete placental presentation, in which instance the foot of the child was brought down. The second was an example of partial placental presentation, where the only treatment adopted was rest and the application of cold. The membranes had been ruptured before her admission.

Dr. Churchill, in his *Midwifery*, states the extreme risk attendant upon all operations requiring the introduction of the hand into the uterine cavity, which is, in his opinion, followed by more or less untoward results in almost every instance. Case v. affords a good example of the justness of this observation, although I must say that I attribute the bad consequence, in this instance, to have been more owing to the neglect of the attendants, in not removing her wet clothes for twelve hours after the operation, than to any injury inflicted on the soft parts during the manœuvre of turning. Besides the risk here alluded to, Dr. Simpson's plan is liable to still greater objections; the forcible extraction of an adherent placenta through an undilated os uteri being, in my mind, a much more dangerous operation than even that of turning, leaving out of view the certain destruction of the infant, which must inevitably result from the former plan when put into execution. How Dr. Simpson can include cases of the spontaneous separation and expulsion of the placenta, in his *Table of Mortality*, with those cases where artificial separation was resorted to, is to me inexplicable; the first being an entirely natural process, the latter an operation requiring considerable manipulation, and, no matter how delicately performed, one which must be attended with more or less violence to the cervix uteri.

That there may be cases where, from great loss of blood previously, it might be useful to extract the placenta (provided it was separated sufficiently) in order to hasten the labour, and to allow the presenting part of the child to come into imme-

diate contact with the bleeding mouths of the uterine vessels, I would not positively deny; although I never saw such a case, where turning was not practicable with safety to the mother, and where the immediate extraction of the placenta afforded the best, if not the only chance of saving the mother.

Let us now take Dr. Rigby's forty-three cases of placental presentation, quoted by Dr. Simpson in his table of mortality, and inquire into the particulars of those attended with a fatal result.

Case VII. was one of placenta prævia complicated with distorted pelvis, and, in Dr. Rigby's own words, she "had lost an immoderate quantity of blood, was greatly sunk, and appeared to be almost dying." Is it therefore any wonder that this woman did die, when we find that before opening the head, which could not otherwise be drawn through the pelvis, such extractive force was used as to separate several of the cervical vertebrae? (See history of case, page 107, Rigby on Uterine Hemorrhage).

In Case x. the woman had been flooding two hours before Dr. Rigby saw her: "She had in that time lost a very great quantity of blood, and was so much sunk by it, that she died soon after I came into the room." So it appears nothing was done in this instance. He saw her too late. On examination, "the placenta was found situated upon the os uteri, and a partial separation of it, not bigger than a crown-piece, was the cause of this fatal hæmorrhage."

In Case xiv. the patient had lost an "astonishing quantity of blood, and had the most threatening appearance:" "her pulse was scarcely perceptible; her countenance was pale; her lips livid, &c.: the uterus was very little open." Turning was performed under these unfavourable circumstances: is it any wonder "she died about six hours after?"

Case xv. was bled by the surgeon who visited her first; and, when Rigby saw her, was so reduced by that, and from subsequent flooding, that "she seemed to be dying." "The

uterus was shut, though loose and relaxed;" yet turning was had recourse to as a forlorn hope. "She died in half an hour after delivery."

In Case xx. the woman died (under the care of a midwife) an hour before Dr. Rigby saw her.

His forty-seventh is the next case of placenta prævia, which proved fatal to the mother. This poor woman was under the care of a *midwife*. She had lost an "excessive quantity" of blood before he saw her, "and she was faint to an extreme." Version was effected without difficulty; but the placenta adhered so closely to the cervix uteri, that it took him an hour and a half to remove it. This woman died about twelve hours after.

Case LVIII. proved fatal several days after delivery; the woman being attacked with fever on the third or fourth day, and died a few days afterwards. A midwife had been in attendance on this case for several days before Dr. Rigby saw her, and when he arrived he "found her very much reduced by loss of blood."

Case LXXXI. "The patient was a poor woman, and had been a long while under the care of a midwife before the surgeon was sent for." "An excessive quantity of blood had been lost, and she was reduced to the last extremity." "Though the turning was effected without the least difficulty, she did not survive it more than half an hour."

Case LXXXII. "This poor woman was about eight months gone with child; was forty-two years of age; of a very weak constitution; and had been ill of a malignant fever more than a week." He "found her very ill, with a small but very quick pulse. She appeared drowsy, and took very little notice of what passed in the room; and this, though she had been faint from the loss of blood, appeared to be principally owing to the stupor which was characteristic of her fever." She "fell a victim to the disease before the end of the week." Turning and delivery were effected with ease. Is it likely any other mode of treatment would have proved more successful?

Case LXXXIX. "This was a very weak, delicate woman." "I was not called to visit her," he writes, "until she had lost a great quantity of blood." It appeared that she was attacked with fever on the third day after delivery, "which she did not long survive."

Case xcvi. is well worth the perusal of the reader; after which, I am sure, no candid person will attribute the melancholy result to the operation of turning, but to the miserable condition in which Dr. Rigby found her: he says, "she appeared to be almost expiring."

The above cases do not here require further comment; and I invite the reader who takes an interest in the subject to peruse their histories in full, and judge for himself whether I have not given a fair summary of the fatal cases. I find, furthermore, that Dr. Simpson gives only forty-two cases in his table as the result of Dr. Rigby's practice, out of which number, twelve were fatal. Now I make out forty-three in all, out of which number, after the most careful examination, I can only find eleven to have proved fatal, as the following summary abstracted from the total number of cases of hæmorrhage with their results (106), published by Rigby, will shew:

Of his forty-three cases of placenta prævia, thirty-two were successful, and eleven unsuccessful. The hæmorrhage in the other cases related by Dr. Rigby depended on accidental circumstances, such as the separation of the placenta from its normal situation: none of them proved fatal.

Dr. Collins reports eleven cases of unavoidable hæmorrhage, as having occurred during his Mastership of the Dublin Lying-in Hospital; of these, two mothers died after the child had been turned and delivered, "one from laceration of the uterus, and the other from the effects of the hæmorrhage both before and after the birth of the child." In both it was necessary to interfere under *unfavourable* circumstances. It is worthy of remark, that out of the eleven cases Dr. Collins saved six

children, and of the five still-born children two were putrid, and had evidently been dead for a long time^(a). The same author observes: "I know of no circumstance *so much to be dreaded* as the forcible introduction of the hand where the parts are in a rigid or unyielding state." Now, with these facts before us, and on the authority of a physician of such extensive experience, a prudent practitioner of the present day should hesitate before he attempts to turn under such circumstances. What, then, are we to do? I maintain that it is equally dangerous, under like circumstances, to extract the placenta, as recommended by Drs. Simpson and Radford. Dr. Samuel Cusack, after describing a case of complete placenta presentation, where turning was afterwards resorted to, observes: "The most remarkable feature in this case was the great advantage found to arise by plugging the vagina; the os uteri seeming in the first instance too rigid to allow of turning being performed with safety to the patient." Now this is the treatment I would pursue in all cases of rigidity of the os uteri, due attention being paid to the condition of the patient, and to the precautionary measures already suggested, when speaking of the use of the plug in a former part of this paper. It is a question more difficult of decision, whether the plug is ever admissible after delivery, when the hæmorrhage continues. On this point I would be sorry to hazard an opinion, not having ever had occasion to try it; but do not see why it might not be used as recommended by M. Negrier, the binder being first firmly applied, and by its means the uterus prevented from enlarging. Dr. Campbell of Edinburgh possesses a record of twenty-two cases of placental presentation, where version was the treatment employed, "and with success to the parent in all of them, with one exception, in which more than six pounds of blood were lost before the patient was visited."^(b)

In conclusion, I would suggest the following course of prac-

(a) Collins' *Practical Observations*, pp. 93, 100.

(b) *The Northern Journal of Medicine* for May, 1846, p. 258.

tice to be adopted in all cases of placental presentation, where the practitioner has been in attendance from the commencement of the hæmorrhage :

1st. In cases of partial placental presentation, he should avail himself of the earliest opportunity to rupture the membranes, and evacuate the uterus of all its fluid contents.

2ndly. In the same class of cases, after the escape of the liquor amnii, should vigorous uterine action not ensue, to encourage this desirable end by means of friction over the fundus uteri, the application of a binder, the administration of ergot of rye, or the use of galvanism, as recommended by Dr. Radford(a).

3rdly. In complete placental presentation, when the os uteri is rigid and undilated, never to attempt to extract the placenta through it in that state, but to plug the vagina carefully by means of a soft sponge, previously steeped in cold vinegar and water.

4thly. As soon as the os uteri has been sufficiently dilated to admit of the introduction of the hand, to seize a foot and deliver cautiously.

5thly. Should there be no doubt of the child's being dead, and the head presenting, it may be delivered by the crotchet, after lessening its head.

6thly. As I attribute the entire cessation of the hæmorrhage which occurred in Dr. Simpson's cases, and those of others, after the extraction of the placenta, to the fact of the uterus being thereby entirely emptied of its fluid contents, and allowing the presenting part of the child to be pressed against the bleeding orifices of the uterine vessels, that in certain cases the placenta might be pierced with a gum-elastic or silver catheter, and the liquor amnii thus allowed to escape. This operation is applicable to cases where the feet present, or where craniotomy is decided upon (in head presentations), either on account of distorted pelvis, or from the fact of the child being dead.

(a) Provincial Med. Jour., Dec., 1845; see also p. 300 of this Journal.

ART. XI.—*Observations on the recent Epidemic Influenza among Children*. By FLEETWOOD CHURCHILL, M.D., M.R.I.A., Lecturer on Midwifery and Diseases of Women and Children, in the Richmond Hospital School of Medicine.

TO THE EDITOR OF THE DUBLIN MEDICAL JOURNAL.

MY DEAR SIR,—I take the earliest opportunity of complying with your request, that I would give you a short sketch of the prevailing influenza among children, as it has come under my observation; premising two remarks,—first, that all the cases I have seen have been in private practice, and, consequently, among those in more or less comfortable circumstances, so that they cannot be taken as evidence of the character of the disease amongst the poor; and secondly, that the large number is to be accounted for by this being the disease most frequently met with lately, but especially by the fact of the greater part, or the whole, of a family of children being simultaneously or successively affected. Thus I saw this morning a family of six children, the whole of whom have been confined to bed with the influenza within the last week.

The number of cases, then, that I have seen within the last two months, and from which my remarks will be drawn, exceeds sixty; and they embrace children of all ages, from two months old to twelve or fourteen years. I may add, that, in addition to the children, in many cases, the parents or servants were similarly affected.

I think that, without exception, the younger the child the more severe the attack.

The mode of invasion varied a good deal. In some instances the whole family seemed to submit to the epidemic influence at once, and all were laid up; in others, one or two would present the epidemic character well marked, and the others complain merely of a slight cough, accompanied in a

day or two by feverish symptoms; whilst occasionally each child took sick successively, allowing the one first attacked to recover previously.

The characteristic features of the complaint, as in previous epidemics of influenza, have been affections of the chest, invariably accompanied by smart fever. Coughs and colds, without fever, are common enough, but I exclude them, as not true cases of influenza.

The fever sometimes precedes the cough, but more frequently comes on about the second, third, or fourth day. The child is heavy, dull, cross, and cold, creeping to the fire, and unwilling to exert itself, or to share in its usual amusements. The skin becomes hot, florid, and the pulse very quick, ranging from 120 to 160. There is, perhaps, rather less thirst than one would expect from the degree of fever, and the secretion from the kidneys is scanty, and sometimes high-coloured. The tongue is always foul, and loaded with white fur; sometimes, though but rarely, dry; the appetite is lost; and occasionally I have seen vomiting or diarrhoea, but generally both stomach and bowels are steady. In almost all cases the child has been restless and uneasy at night, sleeping little, and, in a few instances, slightly delirious.

As regards the local affection, I have observed three varieties, often quite distinct, but occasionally two occurring in the same child.

1. In the milder form of the disease, the primary bronchial tubes were the portion of the respiratory system affected, and this was most common among the elder children. The attack began by a frequent cough and a degree of hoarseness, indicating that the larynx and trachea were somewhat affected. The hoarseness often subsided, but the cough continued very troublesome, with free expectoration after the first day or two. In two cases of young children (i. e. under four years of age) the larynx was more seriously affected, and the disease began

by an attack of well-marked croup, which subsided in one case in ten or twelve hours, and in the other in two days, leaving behind it the form of influenza I am describing.

The cough gives a good deal of pain, and elder children describe it as scraping the chest. After a day or two the fever becomes marked and the cough not less troublesome, and for some days the child suffers great distress, until the fever subsides, the cough is less frequent, and the expectoration more abundant.

If the lungs be examined with the stethoscope, they will be found generally free from abnormal sounds, and the respiration vesicular and natural; but the respiration through the large bronchial tubes gives a rough and slightly sonorous sound. Percussion yields a clear and perfectly natural sound.

2. The second form of the disease affected children of all ages, and consisted of more or less intense bronchitis of one or both lungs, with great congestion of those organs. In these cases respiration was much more rapid, and performed with some difficulty, a wheezing being audible at some distance. The imperfect aeration of the blood shewed itself in the dusky red colour of the cheeks, which, in some severe cases, were nearly livid. The cough was incessant, the mucus abundant; but as little children do not expectorate, this rather added to the distress. The fever set in nearly as soon as the bronchitis, and, in some cases, ran very high. In some instances the attack was so severe that suffocation was imminent; but these, with some difficulty and delay, recovered.

When the chest was examined, its movements indicated considerable difficulty of respiration, and the respiratory murmur was lost in a variety of bronchitic rales, mucous, sibilous, and sonorous, varying according to the extent and intensity of the attack. Mixed with these is frequently heard a crepitus,—not the small, distinct crepitus of pneumonia, but larger, and more moist. Percussion yielded a pretty clear sound generally, with

a diminution of tone occasionally in different parts; mainly, I think, in those where the crepitus occurred.

In the progress towards convalescence the crepitus first disappeared; then the movements of the chest became less laboured, and the respirations less frequent; the distress diminished, and the fever subsided gradually. The bronchitic rales continued in a minor degree for a considerable time; and, what was very remarkable, in a great number of cases, as the general bronchitis diminished, I found the primary tubes, and even the larynx, became affected.

3. The third form which I observed the affection of the chest to assume was either simple pneumonia, or mixed with a moderate amount of bronchitis, and, I believe, this form occurred only in young children; I do not remember any case of it in children above five years old. Its commencement, in most cases, was very obscure. The child laboured under high fever, with very rapid breathing, but very little cough. It looked very like a case of remittent fever, and in one or two cases I believed at the first moment it was so, and examined the chest as a matter of duty, to make sure, rather than with any expectation of detecting serious disease. In these cases double pneumonia existed. The respiration in all was, as I have said, extremely rapid, with great action of the *alae nasi*, but without the laboured movements of the chest which occurred in the last variety; the face was flushed, with the centre of the cheek of a florid red colour; the pulse very frequent; the thirst considerable, with great restlessness. The usual crepitous rale of pneumonia, clear, small, and distinct, was present, mixed, in a few cases, with mucous or sibilous rales. The part of the chest affected was dull on percussion. Under the treatment adopted the signs of pneumonia gradually disappeared, and, in proportion, the fever subsided, the cough generally increasing for a time, the chest became clear, and the little patient slowly recovered.

Of course, this form of disease involved the greater danger; and of some of the patients I had but slender hopes, as they were children of weak constitution.

As to the treatment, it has been simple and successful. On the accession of fever in all the varieties of local affection, I have found it most advantageous to give an emetic of ipecacuanha in the two first, and of tartar emetic in the last, and to prolong the nausea for an hour or two. In the second and third varieties I have found leeches necessary when the attack was severe, the respiration hurried and difficult, the pulse quick and strong, and the child able to bear them.

In most cases, after these preliminaries, I have ordered a mixture of ipecacuanha wine, paregoric elixir, and almond milk, to be given at short intervals; but when pneumonia exists, the tartar emetic mixture is better, and if it should produce great depression, this may be corrected by ammonia. A small quantity of ammonia, in the former mixture, was advised by Dr. Stokes in some of the cases, and with immediate benefit; it seems to relieve the congested state of the bronchial mucous membrane as much as any thing I have tried; or, if it do not answer, from two to five drops of spirits of turpentine, in mucilage and water, every three or four hours, may be given; in several cases it was very beneficial. If these mixtures disagree with the stomach, or after they have produced their effect, or at the same time that they are exhibited, small doses of calomel, ipecacuanha, and James's Powder, may be given with advantage.

As to external applications, I have found it necessary, in some cases, to have recourse to blisters, but not very frequently, partly on account of the annoyance they are to young children, but principally because I found a very good substitute in poultices, which I think worthy of a more extensive use than they obtain. They are best made of linseed meal, and should be applied directly to the surface, warm, and very moist, changing them every two hours, or oftener. If irritation be

desired, a dessert-spoonful of the flower of mustard may be mixed with the meal.

Warm baths are exceedingly useful, and may be used every night, provided the child do not cry much; if it do, it will be better to bathe or foment the feet.

I have thus, very briefly, complied with your wish. The sketch I have given is slight, and necessarily incomplete, but it may elicit further communications of greater value in themselves, or which, when combined, may be more complete, and my object will thus be attained more effectually. Let me add, in conclusion, that as yet none of my cases have proved fatal, though some were very serious and threatening; so that we must conclude that, among children, although the epidemic is very general and severe, yet that the danger is not very great when properly attended to.

Faithfully yours,
FLEETWOOD CHURCHILL.

February, 1847.

ART. XII.—*Medical Problems*. By WILLIAM GRIFFIN, M. D.,
Physician to the County of Limerick Infirmary.

(Continued from vol. xi. p. 401, of former Series.)

WHEN miscarriage or premature labour takes place at fixed periods, from the influence of acquired habit, may not the periodical movements be prevented by such remedies as prevent the recurrence of an epileptic fit or a paroxysm of ague?

I was called on some years since to attend Mrs. C., a lady who was ill with the usual symptoms of miscarriage at the third month. She informed me, that she had had a miscarriage at the end of the third month of her first pregnancy. She reached nearly to her full time on the second occasion, fell into puerperal convulsions in her labour, and was delivered of a dead child. In her next pregnancy she had a miscarriage at three months; in her fourth at three months; and now in her fifth she

was again threatened exactly at the same period. She informed me that everything had been done to prevent it. She had been bled repeatedly, kept for weeks upon low diet, and was confined during the time entirely to the horizontal position. She lived, in fact, between the bed and the sofa. In this new attack some friends recommended her to send for me, with the hope of having some plan of treatment devised by which she might be enabled to go on to her full time. The amount of the hemorrhage was, however, so considerable, and the uterine pains so general and regular, I told her it was impossible to prevent the miscarriage, but if I was informed of her condition on any future occasion, when six weeks or two months should elapse, I might, perhaps, succeed. Miscarriage, I believe, took place on that night or on the next morning.

In three or four months afterwards I received an intimation from this lady that she was two months pregnant. On considering the probable causes of the previous miscarriages, I could not detect any very obvious one. Her health was excellent, her habits regular, her diet moderate. The extreme regularity with which the miscarriage always occurred at the end of the twelfth week rather confirmed the only conjecture I could form, that it depended wholly on the influence of an acquired habit; and the question necessarily arose, how was this acquired habit to be interrupted or controlled? All the ordinary measures had already been adopted, and the poor lady had been subjected for weeks to the most irksome and tantalizing restrictions, without the slightest advantage. In this difficulty it occurred to me, that as periodical attacks of epilepsy may often be prevented by a long course of any of the metallic tonics, the periodical movements connected with the action of the uterus might be also under their control. I therefore directed my patient to take two and a half grains of oxide of zinc, with two grains of extract of hops, three times a day, and after each pill, two table-spoonfuls of a mixture of valerian, aromatic spirits of ammonia, and infusion of snake root. She was also

ordered a box of pills, containing a grain of opium in each, one of which she was to take when pain came on, and to repeat the dose every hour until relief was obtained. As she was of a nervous habit, I thought, if my view of the case was a correct one, that both bloodletting and confinement to the sofa would rather tend to increase than lessen the danger, by weakening the general tone of the system, and rendering her more susceptible of slight impressions. I therefore advised her, instead of lying all day upon the sofa, to keep out in the open air on fine days as much as possible, without, however, fatiguing herself, and to live in the manner she usually found to agree best with her. Under this plan of treatment, she passed the twelfth week without the slightest threatening, to her very great joy and the gratification of her friends. Happening, however, in about a fortnight afterwards, to visit a sister who was very ill, she was so shocked at her appearance that she was immediately seized with the usual symptoms premonitory of miscarriage. She had a discoloured leucorrhœal discharge, which, in a few hours, was followed by uterine pains, being exactly the symptoms which had ushered in all her former attacks. She took the opium pills as I had directed her, and before morning the pains and discharge had all subsided, and in a day or two she was as well as she had been before. She then resumed the zinc and valerian for three or four weeks, after which period I did not consider it necessary to continue them. She went on to her full time without the slightest uneasiness, and was finally delivered of a fine child, which is now well and thriving.

Very soon after this lady had applied to me, and when I had just obtained strong presumptive evidence of the success of the treatment adopted, Mrs. H. consulted me with a view of obtaining advice as to the best means of preventing premature labour, which, she feared, was about to come on. It had already occurred to her four times successively; the infant dying in the middle of the sixth month, and her delivery of a dead child taking place at the end of it. She had now com-

pleted the fourth month of her pregnancy. On making some inquiries to ascertain whether she had had at any time a syphilitic affection, I could only glean, that she had suffered with soreness in the vagina for three or four months after her marriage, for which mercurials had been prescribed. This was obviously a very different case from the one already related. In the latter, hæmorrhage and pain came on first, and the child died as a consequence. In the former, the child died in the first instance, and premature labour followed. In Mrs. C.'s case the mere influence of habit, the tendency in the constitution to be influenced periodically, brought on labour. In Mrs. H.'s case the infant died through some unknown cause, and labour came on because of its death. There did not appear, therefore, to be any analogy which could suggest a treatment precisely similar. Taking into consideration the probability of the child's death being occasioned by some syphilitic taint in the habit, I therefore decided on giving calomel and opium in small doses, so as to affect the gums slightly; and subsequently with a view of preventing the accession of labour at the end of the sixth month, from the influence of habit, to adopt the same plan which had been pursued so successfully in the case of Mrs. C. After a fortnight or three weeks the gums became sore, upon which the calomel was suspended, and pills of oxide of zinc, with the valerian mixture prescribed for Mrs. C., were substituted. Under this treatment, Mrs. H. passed the usual period at which labour came on, and continued in good health to the 7th of July, when she was attacked with griping pains and slight flooding. These symptoms subsided by keeping perfectly at rest, and taking a few anodyne pills. On the 17th of the same month, when she had reached within four weeks of her full time, she was seized with threatenings of labour, and on the 19th was delivered of a living child, which died after some hours. This lady resided in the country, at a considerable distance from me, and could not receive that im-

mediate attention and advice, which, if she had been in town, would probably have enabled her to go to her full time.

About the same time these cases were under my care, I was consulted by Mrs. A., who had also been seized with premature labour, in consequence of the infant dying in the seventh month, for three successive years. In her last labour she was seized with violent puerperal convulsions, during which she was delivered of an infant, which had evidently been dead for many days.

I had not had the medical management in the earlier labours, and was merely called in a little before the lady's confinement; in the last I had, therefore, no opportunity of adopting any preventive treatment. When she was again pregnant, however, and approached the seventh month, I adopted the same treatment as I had done in the former cases, partly to counteract, if possible, any tendency to labour arising from acquired habit, and partly that I thought it not impossible the same influence which was capable of controlling a periodical movement in the system comprehending months, might also control causes tending to the death of the child. The lady took the oxide of zinc pills and valerian mixture, three times a day, for some weeks before the period when labour might be expected; and she had opium pills by her, one of which she was directed to take whenever she was seized with uterine pains. These last she had no occasion to take, having gone on remarkably well to her full time, when she fell into natural labour, and was delivered of a living child: it expired, however, almost immediately after. It was obvious here, that the treatment had actually accomplished both the objects I had in view; it had broken up the morbid habit, and it had so interfered with the poisonous influence which had heretofore so invariably, in the seventh month, caused the death of the child, that the latter was born alive. Its death so soon after birth, without any obvious cause, suggested the possibility of some

syphilitic taints in the parents, which led to very particular inquiries. The father, it appeared, had not had a syphilitic affection for ten years before his marriage, and never had one since. Acting, however, on the possibility that, even after that long period, some deleterious influence might have been communicated to the mother, and thus evinced itself in the feeble vitality of the offspring, I placed the lady, as soon as she was out of her confinement, under a mild course of calomel (one grain every night, until her gums became tender), and again, when she reached the dangerous period, resorted to the zinc and valerian. I had now the happiness of finding all my hopes realized; she went to her full time, and had a fine living infant, which has since been going on well.

In the first of the cases I have given, in which abortion occurred apparently from the acquired habit, the treatment was quite successful. The disposition to premature action in the womb was controlled exactly as the movements to a fit of epilepsy or of ague might have been arrested by some similar means. Quinine, carbonate of iron, or nitrate of silver, might have accomplished the object probably as well as the oxide of zinc and valerian. The latter were preferred chiefly because I believed they would be less likely to injure the fetus, but also because I had considerable confidence in the influence which both, and especially which large doses of valerian, possess over the nervous movements. In the second case, the lady, who had fallen into labour on four successive occasions at the sixth month, in consequence of the death of the child, carried her child to the eighth month, and it was born alive. This instance, however, can hardly be adduced as evidence of the influence of the zinc and valerian, as it seems probable the death of the child, and consequent premature labour, were owing to some syphilitic taint, which was removed by the mercurial treatment. In the third case,—that of Mrs. A. Z.,—the inference as to the truth of the principle assumed may be considered more satisfactory, as she reached her full time, and

had even a living child before the mercurial treatment was adopted.

These cases are so few in number that I offer them to the profession as evidence of the novel application of a principle long recognised in the treatment of epilepsy, ague, and other periodical diseases, with some diffidence. The legitimate manner, however, in which the analogy was inferred, and the remarkable success attending the remedial measures it suggested, were too striking not to make a deep impression on my own mind.

The extreme difficulty, too, which practitioners so often feel in the prevention of abortion and premature labour, as well as the deep interest which married people naturally attach to successful treatment in such cases, invest suggestions supported by even a very limited experience with some importance. The valerianate of zinc, which was not in use at the time these cases were under treatment, would have been a far more desirable preparation, and probably quite as effective. Where it is necessary to continue medicines of this class for a long period, it is a great object to be in possession of such an elegant substitute for so disagreeable a mixture as the valerian.

ART. XIII.—*Some Particulars respecting Swift and Stella, with Engravings of their Crania; together with some Notice of St. Patrick's Hospital.* By W. R. WILDE, M.R.I.A., with Communications from Dr. MACKENZIE and Mr. HAMILTON.

WHEN a great or a rich man dies, he is interred with pomp; case after case, of oak and lead, are provided to resist the ravages of decay,—their lining the softest swan's down, and their cover the purple pall. His elegy is written by his friends and admirers,—if not what he was, at least what he should have been. A mausoleum of the most durable materials is provided. The sculptured marble, or the graphic tablet, while it tells his virtues, points out his last resting-place; and if

genius, honour, or renown, have marked his course while living, the talent of subsequent ages is devoted to the task of his biography. Thus immortality has been gained by the great and good of all ages.

Not so the poor or mean man's death. His last sigh is breathed in an hospital, or some obscure cellar or garret; the frail shell that holds his corpse is procured at the expense of his country; he is followed to the grave by a few mourning friends, and laid without ostentation in the silent tomb; earth mingles with earth, and dust with its kindred dust; the clods rattle on his coffin, and the mound of greensward which covers it marks for a few years to come the only estate he was ever possessed of. His name is forgotten in a day. In process of time, when it is considered that he cumbereth the ground, the frail particles of humanity,—all that now remains of what was once "the human form divine,"—are again exposed to view; but, generally speaking, they are religiously restored by the sexton to their former occupancy. And yet, with all this, though he lives in misery, and dies in want, the beggar enjoys a rest which, in the present time at least, is not vouchsafed to the rich or distinguished, whose monument may be displaced, or whose tablet may be rudely hurled from its resting-place, at the dictate of a commission; and, if the person has been remarkable in life for great mental capacity, it is more than probable that, before many years elapse, some prying phrenologist will have ransacked his tomb, abstracted his cranium, and exhibited it at all the *soirées* in the neighbourhood during the next six months. This Vandal desecration of monuments is even now proceeding in this country. The skull of Pope is, we believe, at this moment, hawked about by an itinerant phrenologist; and to the indignity to which we have referred have the mortal remains of Swift and Stella been submitted nearly a century after their interment. To this portion of our subject we shall revert presently.

The accompanying letter, which we received from our esteemed friend, Dr. Mackenzie, of Glasgow, in autumn last, induced us to make some inquiries into the matter, the result of which will be found in the following pages. True it is, that some of the topics included in this somewhat discursive essay are not strictly medical; but while we do not acknowledge the narrow limits which are usually assigned to what is called medicine, or the medical sciences, we feel, in common with most of our friends, that any and every circumstance, no matter how minute or trivial, connected even remotely with that illustrious patriot, most accomplished scholar, and dazzling wit,—whose works, the purest specimens of our language, shall ever remain to charm the child and to instruct the sage, and to whose benevolence the medical profession in this country, and humanity in general, are so much indebted,—should be made known, and will be received by our readers without apology for their insertion here.

"DEAR SIR,—It is well known to those who have looked into the history of the celebrated Dean Swift, that from an early period of his life he was subject to attacks of what he himself and his biographers style vertigo. Whether these attacks were ever attended with other nervous symptoms, such as epilepsy, does not appear; although, from the expressions used by Mr. Monck Mason, that Swift 'was subject to a constitutional malady, of which he frequently experienced the ill effects,' and which he had reason to apprehend 'was in some degree hereditary,' this might be suspected. Swift himself attributed the origin of his disease to a surfeit of fruit,—'stone fruit,' says Sir Walter Scott,—'apples,' says Mr. Monck Mason. His temper, it is well known, grew, as life advanced, exceedingly irritable, till at length he became furiously insane, and ultimately fatuous.

"Dr. Beddoes(a) has hazarded the conjecture that 'one hy-

(a) Hygeia: or Essays Moral and Medical, vol. iii. p. 187. Bristol, 1807.

pothesis," and "but one," both unfolds the nature of Swift's ailment, and accounts for his extraordinary conduct towards Mrs. Johnson and Miss Vanhomrigh. The harsh supposition has been repelled with becoming indignation by Sir Walter Scott, who justly observes, that "until medical authors can clearly account for and radically cure the diseases of their contemporary patients, they may readily be excused from assigning dishonourable causes for the disorders of the illustrious dead."

"It appears from the testimony of Dr. Delany, that in October, 1742, after Swift's frenzy had continued several months, his left eye swelled to the size of an egg, and the lid was so much inflamed and discoloured, that the surgeon who attended expected it to mortify. The extreme pain of the swelling kept him waking near a month, and during one week it was with difficulty that five persons prevented him, by mere force, from tearing out his eyes. At length the tumour perfectly subsided, the pain left him, and he recognised his friends and medical attendants. The surgeon was not without hopes he might once more enjoy society; but in a few days he sunk into a state of total insensibility, slept much, and could not, without great difficulty, be prevailed on to walk across the room. This state, which lasted some years, was the effect of water in the head. Mr. Stevens, a clergyman of his Chapter, pronounced this to be the case, and often entreated the Dean's friends and physicians to have him trepanned and the water discharged; a proposal to which, of course, no regard was paid, although the diagnosis turned out correct.

"For three years after the affection of the eye Swift remained nearly silent, in a hopeless state of fatuity, with short and occasional gleams of sensibility and reason. Sometimes he would try, evidently with pain, to find words, but not being able, he would fetch a sigh and remain silent.

"On the 19th of October, 1745, he died without the least pang or convulsion, in the seventy-eighth year of his age.

"That the brain was loaded with water is the only circumstance stated by Dr. Delany of the inspection after death.

"My object in addressing you on the subject of Swift's case, is to beg the favour of a communication, through the medium of the Quarterly Journal of Medical Science, of any further facts which may be recorded respecting it, either in printed books or in authentic manuscripts, and known to you or to any of your readers. It is at once evident how exceedingly important in a pathological view are the symptoms and appearances already known, and how desirable it would be to possess a more minute account of both. That such may have been drawn up by the medical gentlemen who attended Swift during his life, or who inspected his head after death, seems not unlikely, and, if preserved, will certainly prove of great interest. The repositories of the Deanery or of Trinity College may, perhaps, contain documents on the subject.

"The points to which, it is to be hoped, attention was directed are:—First, the cause of the exophthalmos; and whether or not connected with the interior of the cranium. Second, the state of the encephalon; and especially of the dura mater over the left orbit. Third, whether there was any tumour or other diseased structure prolonged from the orbit into the cranium, or *vice versa*, or any absorption of the roof of the orbit.

"Should no further particulars be recovered, I trust the inquiry I have started will not appear altogether unreasonable, even at this length of time after the events to which it refers. Surely we have a better right to inquire, after the lapse of a century, into the real facts of his case, than the wit himself had to twit the doctors, and even anticipate their *post mortem* report of him, as he does in his 'Verses on his own Death:'

"The doctors, tender of their fame,
Wisely on me lay all the blame.
"We must confess his case was nice;
But he would never take advice.

Had he been ruled, for aught appears,
He might have lived these twenty years:
For, when we open'd him, we found
That all his vital parts were sound."

"I am, dear Sir, your's, &c.,

"W. MACKENZIE.

"Glasgow, August 15th, 1846."

Let us now briefly enumerate such of the symptoms of Swift's disease, mental and corporeal, premonitory and well-established, as the records furnished by himself and his biographers are capable of affording us.

It may, we are free to confess, appear at first view an almost impossible task to write the history of Swift's case upwards of a century after his death: nevertheless, we have no hesitation in asserting that the following detail of symptoms, given chiefly in the words of the patient, afford us one of the best described, and certainly the very longest case of cerebral disease which we have ever met with, extending over a period of fifty-five years! The very extensive epistolary correspondence of this great man, and his familiar style of writing, as well as the publication of letters which were never intended for the public eye, have greatly assisted us in collecting materials for the history of his malady.

We have made every possible exertion to discover Mr. Monck Mason's authority, or reasons, for supposing Swift liable to any "hereditary disease," such as epilepsy, to which we apprehend he alludes, but without effect; and we are strongly inclined to believe that, like most gratuitous non-medical opinions, it had no other foundation than a conjecture of the author's. The Dean himself, a better authority than either Sir Walter Scott, Dr. Beddoes, or Mr. Mason, took a more rational view of the matter. Writing to Mrs. Howard, in 1727, he thus describes the commencement of his complaint: "About two hours before you were born,"—consequently in 1690,—"I got my *giddiness* by eating a hundred golden

pippins at a time, at Richmond; and when you were four years and a quarter old, bating two days, having made a fine seat about twenty miles farther in Surry, where I used to read—and, there I got my *deafness*; and these two friends have visited me, one or other, every year since; and, being old acquaintance, have now thought fit to come together."^(a) Overloading the stomach in the manner described, and catching cold by sitting on a damp, exposed seat, were very apt to produce both these complaints,—neither of which, when once established, was likely to be easily removed from a system so nervous, and with a temper so irritable, and a mind so excessively active, as that of Swift's. From this period, a disease which, in all its symptoms and by its fatal termination, plainly appears to have been (in its commencement at least) *cerebral congestion*, set in, and exhibited itself in well-marked periodic attacks, which, year after year, increased in intensity and duration.

Lord Orrery says that "in compliance with the advice of his physicians, when he was sufficiently recovered to travel, he went into Ireland to try the effects of his native air; and he found so much benefit by the journey, that in compliance to his own inclination he soon returned into England."

In early life he was of remarkably active habits, and always exceedingly sober and temperate, if we except the instance of gluttony already related. From the date of his first attack he seems to have had a presentiment of its fatal termination; and the dread of some head affection (as may be gleaned from innumerable passages in his writings), seems to have haunted him ever afterwards, producing those fits of melancholy and despondency to which it is well known he was subject; while the many disappointments and vexations, both of a domestic and public nature, which he subsequently suffered, no doubt tended to hasten the very end he feared.

During his first residence at Sheen and Moor-Park, prior

(a) Letters of Swift. Dr. Hawkesworth errs in stating that it occurred in Ireland. Swift was then about twenty-three years of age.

to 1694, Scott says, "his studies were partially interrupted by bad health;" and then tells the story of the "surfeit of stone fruit," and the "coldness of stomach," &c., but on what authority, except this letter to Mrs. Howard, we are utterly at a loss to discover. The same biographer continues: "At one time he was so ill that he visited Ireland in hopes of experiencing benefit from his native air; but, finding no advantage from the change, he again returned to Moor-Park, and employed in his studies the intervals which his disorder afforded."

Various anecdotes illustrative of his eccentric habits and singular manner have been related of Swift; but as we do not think that they in any wise affect the present question, they are here altogether omitted. Moreover, these have been dwelt upon by some of his biographers apparently for the purpose of shewing how they led to the ultimate and melancholy fate which closed his "eventful history," and as exhibiting symptoms of incipient insanity; but, as we trust, a fair examination of his case will shew, Swift was not, at any period of his life, not even in his last illness, what is usually termed and understood as *mad*.

While living at his parish in Meath, enjoying the charms of a country life, engaged in the active exercise of his clerical duties, and consoled by the society of Stella and Mrs. Dingley, amidst the quiet of the willows of Laracor, and with his mind comparatively at ease, we do not hear of his making any complaint. But whenever he mixed much in society, especially in London or Dublin, he was subject to returns of his disease. Thus, in 1708, he writes to Archbishop King from Dublin: "I have been confined near two months this winter, and forbid pen and ink by my physician, though, thank God! I was more frightened than hurt. I had a colic about the year 1696^(a) that brought me to extremity, and all despaired of my life, and the newsletters reported me dead. It began at the same time of the year, and the same way it did then, and the winters were much alike; and I verily believe had I not had the

(a) This must be a typographical error, the 6 should be a 0. See p. 380.

assistance of my old physician, Sir Patrick Dun, I should have run the same course, which I could not have supported; but with a little physic, and the Spa and Bath waters, I escaped without other hardships than keeping at home." In another communication he writes: "I was then for a long time pursued by a cruel illness that seized me at fits and hindered me from meddling in any business."

From 1710 to 1713 Swift resided in London for some months, and while there mixed much in politics and other exciting subjects. In his *Journal to Stella* at this period many of his symptoms are accurately noted. Excess in late hours seems always to have aggravated and often produced the uncomfortable feeling in his head. On the 27th October in that year, after giving an account of a dinner with Congreve, Sir R. Temple, Eastcourt, and other choice spirits of the day, he writes: "But now my head continues pretty well; I have left off drinking, and only take a spoonful mixed with water," &c.

October 31st.—"This morning, sitting in my bed, I had a fit of giddiness; the room turned round for about a minute, and then it went off, leaving me sickish, but not very. I saw Dr. Cockburn to-day, and he promises to send me the pills that did me good last year, and likewise has promised me an oil for my ear that he has been making for that ailment for somebody else."

November 1.—"I had no giddiness to-day; but I drank brandy, and have bought a pint for two shillings. I sat up the night before my giddiness pretty late, and writ very much, so I will impute it to that; but I never eat fruit nor drink ale."

November 24th.—"I have had no fit since the first; I drink brandy every morning and take pills every night." Other casual illnesses, but not referable to the disease in question, occurred to him; these, however, it is unnecessary to mention.

December 1st.—"I have had no fit since my first, although sometimes my head is not quite in good order." 9th.—"I never was giddy since my first fit, but I have had a cold," &c.

He remained free till the 13th of January, 1711, when he writes: "Oh! faith, I had an ugly giddy fit last night in my chamber, and have got a new box of pills to take, and hope I shall have no more this good while." During the last four days of January he had a return of his symptoms. "My head," he continues, "is not in order, and yet it is not absolutely ill, but giddyish, and makes me listless. I walk every day, and take drops of Dr. Cockburn, and have just done a box of pills, and to-day Lady Kerry sent me some of her bitter drink, which I design to take twice a day, and hope I shall grow better. My riding in Ireland keeps me well. I am very temperate, and eat of the easiest meats, as I am directed, and hope this malignity will go off; but one fit shakes me a long time."

Feb. 1st. "I was this morning with poor Lady Kerry, who is much worse in her head than I. She sends me bottles of her bitter, and we are so fond of one another because our ailments are the same. Do not you know that, Madame Stell? Have not I seen you conning ailments with Joe's wife and some others, sirrah? I walked into the city to dine, because of the walk; but I walked plaguy carefully for fear of sliding against my will."

In this notice of Lady Kerry's and Stella's, and also of Mrs. Howard's and other's anxiety on account of the complaints of their neighbours, we find the germ of that passage in the memorable Verses on his own Death, written twenty years after:

"Yet should some neighbour feel a pain,
Just in the parts where I complain;
How many a message would he send,
What hearty prayers that I should mend;
Inquire what regimen I kept;
What gave me ease, and how I slept;
And more lament when I was dead,
Than all the snivellers round my bed."^(a)

(a) These verses were published the Wednesday after the Dean's death, in No. 157 of *The Dublin Courant* (October 23, 1745), a copy of which now lies before us.

February 4th.—“I avoid going to church yet for fear of my head, though it has been much better these last five or six days, since I have taken Lady Kerry's bitter.”

February 13th.—“I have no fits of giddiness, but only some little disorders towards it; and I walk as much as I can. Lady Kerry is just as I am, only a great deal worse. I dined to-day at Lord Shelburn's, where she is, and we con ailments, which makes us very fond of each other.” Throughout the entire period of his illness, active exercise, particularly walking, appears to have been of the greatest service to him. To this may be added rest, quiet, and avoidance of all excitement, as well as great abstinence in his regimen; while to the great mental excitement to which he was constantly subjected during his residence in London, at the period when he enjoyed the confidence of Harley, and engaged so actively in both politics and literature, may be traced several of his attacks; he himself, however, very justly ascribes several of his fits of giddiness and disorder of stomach to excess in eating and drinking. He dined with the minister on the 17th, and in his journal of the day following, he says: “My head has no fits, but is little disordered before dinner; yet I walk stoutly, and take pills, and hope to mend.” From this and many other similar expressions, it is evident that unsteadiness of gait was a constant and well-marked symptom of his disease. During the remainder of this month he continued much in the same state. “No fits, but a little disorder every day, which I can easily bear, if it will not grow worse.” We suppose his having so frequently used the word “fits,” is the reason why some of his biographers erroneously believed he was subject to epilepsy.

April 9th.—He dined with Sir John Stanley, to meet Mr. St. John and Mr. Ganville, but the company happening to be much larger than he supposed it would be, he says: “We were not as easy as I intended. My head is pretty tolerable, but every day I feel some little disorders. I have left off snuff since Sunday, finding myself much worse after taking a good deal

at the Secretary's. I would not let him drink one drop of Champagne or Burgundy without water, and in compliment I did the same myself.” It will be remembered that Harley was then but slowly recovering from the wound he received from Guiscard. On the 16th he “dined with Stratford, and drank tokay,” the effect of which he felt that night and all next day, yet it did not prevent his accepting invitations. On the 18th, however, he seems to have grown worse, and made some slight mistake in dating his journal, apparently the first symptom of that loss of memory of which he speaks so feelingly twenty-five years after. “I dined with Lord Anglesea to-day, but did not go to the House of Commons about the yarn; my head was not well enough. I know not what is the matter; it has never been thus before; two days together giddy from morning till night, but not with any violence or pain; and I totter a little, but can make shift to walk. I doubt I must fall to my pills again; I think of going into the country a little way.” 21st.—“My head, I thank God, is better, but to be giddyish three or four days together mortified me. I take no snuff, and will be very regular in eating little, and the gentlest meats. Well, we dined to-day according to appointment. Lord Keeper went away at near eight, I at eight, and I believe the rest will be fairly fuddled. Young Harcourt, Lord Keeper's son, began to prattle before I came away. It will not do with Prior's lean carcass. I drink little, miss my glass often, put water in my wine, and go away before the rest, which I take to be a good receipt for sobriety.” This advice he afterwards put in rhyme. Besides the pills ordered by Dr. Cockburn, the only medicine he appears to have taken was “some herb snuff, prescribed by Dr. Radcliffe.”

The deafness which attended his first attack did not, up to this period, form a symptom of his illness in 1710 and 1711; but on the 28th he writes: “My ears have been, these three months past, much better than any time these two years; but now they begin to be a little out of order again. My head is

better, though not right; but I trust to air and walking." He then took long walks every day, and, by the advice of Dr. Radcliffe, left off Bohea tea, which he had observed to disagree with him frequently before. Swift was on very intimate terms with Drs. Freind, Chamberlain, and Arbuthnot, but it does not appear that he consulted either of them. Dr. Cockburn was his general attendant. He was no great advocate for physic, as we may learn from a passage in one of his letters about this period: "Fig for your physician and his advice, Madame Dingley; if I grow worse I will; otherwise I will trust to temperance and exercise. Your fall of the leaf! What care I when the leaves fall? I am sorry to see them fall with all my heart; but why should I take physic for that?"^(a)

During the month of May he removed to Chelsea, and seems to have benefited by it. On the 23rd of that month he writes: "I thank God I yet continue much better since I left town; I know not how long it may last. I am sure it has done me some good for the present. I do not totter as I did, but walk firm as a rock, only once or twice for a minute. I do not know how; but it went off and I never followed it."

The summer of 1711 was excessively hot, and Swift suffered extremely from it, yet he does not appear to have ascribed his illness, as do so many patients of the present day, to "the change of the weather," but in the following passage certainly took a very correct and philosophical view of his case: "I never impute any illness or health I have to good or ill weather, but to want of exercise or ill air, or something I have eaten, or hard study, or sitting up; and so I fence against those as well as I can."

He returned to London in July; and here he details an additional symptom highly characteristic of his disease: "I

(a) The advice of Mrs. Dingley is still followed in many parts of Ireland. Several people not only take medicine but have themselves bled from one or both arms in spring and autumn. The country bleeders make a considerable income of this.

fear I shall have the gout; I sometimes feel pain about my feet and toes. I never drank till within these two years, and I did it to cure my head. I often sit evenings with some of these people, and drink in my turn; but I am now resolved to drink ten times less than before; but they advise me to let what I drink to be all wine, and not to put water in it."

September 1st.—"My head is pretty well, only a sudden turn at any time makes me feel giddy for a moment, and sometimes it feels very stuffed; but if it grows no worse I can bear it very well." This letter was written from Windsor, where he then resided, the air of which, as well as the walking exercise, both there and at Kensington, appear to have been of much service to him.

Swift's deafness was at first in but one ear; he thus alludes to it in a communication of the 7th of the same month. "Did I ever tell you that the Lord Treasurer hears ill with the left ear, just as I do? He always turns the right; and his servants whisper to him in that only. I dare not tell him that I am so too, for fear that he should think that I counterfeited to make my court." Upon the 8th he writes: "God be thanked that ugly numbing is gone: my head continues pretty well."

October 21st.—"My head has ached a little in the evenings, but it is not of the giddy sort, so I do not much value it." Again, on the 24th: "I had a little turn in my head this morning, which, though it did not last above a minute, yet, being of the true sort, has made me as weak as a dog all this day. 'Tis the first I have had this half-year. I shall take my pills if I hear of it again."

November 4th.—"I plainly find I have less twichings about my toes since these ministers are sick and out of town, and that I don't dine with them. I would compound for a light, easy gout to be perfectly well in my head." During the next three months it does not appear that he had any serious return of his disorder, although his head was not quite free for some days in the beginning of February. From an expression in

one of his letters at this period, we are inclined to think that he had occasional attacks of hæmorrhoids, the hæmorrhage from which may have acted beneficially on his head. Upon the 8th he writes: "My disorder is over; but blood was not from the p—les."

February 24th.—"I dined with the Secretary, and found my head very much out of order, but no absolute fit; and I have not been well all this day. It has shook me a little. I sometimes sit up at Lord Masham's, and have writ much for several days past; but I will mend both."

On the 29th of March, 1711–12^(a), he had a severe attack of what at first appeared to be acute rheumatism, but which ended in a cutaneous eruption not unlike eczema. His own account of the matter is very full: "I am plagued with these pains in my shoulder; I believe it is the rheumatism." He dined out, and drank three or four glasses of champagne "by perfect teasing, though it is," he adds, "bad for my pains; but if it continues I will not drink any wine without water till I am well. I never would drink any more of it were it not for my head, and drinking has given me this pain. I will try abstemiousness for a while." He applied Hungary water to his shoulder. On the 30th the pain removed to his neck and collar-bone, and he seems to have suffered severely. From the first seizure of the disease till the 8th of April he writes: "I have been extremely ill, though I twice crawled out a week ago; but am now recovering, though very weak. The violence of the pain abated the night before last. The pain increased with mighty violence in my left shoulder and collar-bone, and that side my neck. On Thursday morning appeared great red spots in all those places where any pain was, and the violence of the pain was confined to my neck behind, or a little on the left side; which was so violent that I had not a minute's rest, nor hardly a minute's sleep, in

^(a) The style had not then been altered; we have, however, with this exception, reduced the dates to the modern new style.

three days and nights. The spots increased every day, and red little pimples, which are now grown white, and full of corruption, though small: the red still continues, too, and most prodigious hot and inflamed. The disease is the shingles. I eat nothing but water-gruel, am very weak, but out of all violent pain. The doctors say it would have ended in some violent disease if it had not come out thus. I shall now recover fast. I have been in no danger of life, but miserable torture. I must purge and clyster after this."

On the 24th of April he writes again: "This day, just a month since, I felt the pain on the tip of my left shoulder, which grew worse, and spread for six days; then broke all out by my collar and left side of my neck in monstrous red spots, inflamed, and these grew to small pimples. For four days I had no rest, nor nights, for a pain in my neck, then I grew a little better; afterwards, where my pains were, a cruel itching seized me, beyond whatever I could imagine, and kept me awake several nights. I rubbed it vehemently, but did not scratch it; then it grew into three or four great sores, like blisters, and run: at last I advised the doctor to use it like a blister, so I did with melilot plasters, which still run, and am now in pain enough, but am daily mending."

May 10th.—"My pain continues still in my shoulder and collar; I keep flannel on it, and rub it with brandy, and take a nasty diet drink. I still itch terribly, and have some few pimples. I am weak, and sweat, and then the flannel makes me mad with itching; but I think my pain lessens. A journal while I was sick would have been a noble thing, made up of pain and physic, visits and messages; the two last were almost as troublesome as the two first. One good circumstance is that I am grown much leaner. The doctors say they never saw anything so odd of the kind; they were not properly shingles, but *herpes miliaris*, and twenty other hard names. I can never be sick in the common way; and as to your notion of its coming without pain, it neither came, nor stayed, nor

went, without pain, and the most pain I ever bore in my life." Again, in answer to an inquiry of Stella's, he writes: "No, simpleton, it is not a sign of health, but a sign that if it had not come out some terrible fit of sickness would have followed. I drink nothing above wine and water."^(a)

"My left hand is very weak, and trembles, but my right side has not been touched."^(b) On the 31st he writes: "My pains continuing still, though with less violence." In the beginning of June he removed to Kensington, and writes from thence on the 17th: "My shoulder is a great deal better; however, I feel violent pain in it, but I think it diminishes, and I have cut off some slices from my flannel."

While he remained in the country it was necessary, for his own personal projects, that he should still mix in the society of the Court, but he freely acknowledges its ill effects upon him. Dr. Cockburn advised him to take a little wine. Several allusions to this teasing complaint will also be found in Swift's correspondence with Archbishop King; but expressed in nearly the same terms as those contained in the journal to Stella. This attack of herpes left him exceedingly weak, and his convalescence was very much prolonged. In addition, he suffered from another fit of giddiness while at Windsor, in September, for which he took emetics. "I have eat," he says, "mighty little fruit, yet I impute my disorder to that little, and shall henceforth wholly forbear it."

October 9th.—"I have left Windsor these ten days, and am deep in pills with assafoetida, and a steel bitter drink; and I find my head much better than it was. I was very much discouraged, for I used to be ill for three or four days together, ready to totter as I walked. I take eight pills a day, and have taken, I believe, a hundred and fifty already." On the 28th

(a) The term "simpleton" in this passage was but an expression of endearment, as may be gleaned from the context of his Journal to Stella.

(b) It will be remembered that it was his left eye that was subsequently affected.

his journal continues: "I have been in physick this month, and have been better these three weeks. I stopped my physic, by the doctor's orders, till he sends me further directions." During the next three months he remained free from any serious attack.

Towards the end of January, 1713, he tried the Spa waters; but they did not agree with him, they seemed to increase his vertigo, and produced œdema of the legs. The preparation of aloes, which he commenced, seemed to agree better with him. In part of his correspondence at this period he acknowledges that his memory had become impaired, and he constantly forgot appointments. By the advice of Lady Orkney he tried the preparation which we now know as the Pulvis Aloes c. Canella, toward the end of March, and says of it: "It is hiera picra, two spoonfuls devilish stuff!" In the beginning of May he was appointed Dean of St. Patrick's, and returned to Ireland the end of that month. And here the journal to Stella ends.

In the foregoing, and in part of the subsequent history of Swift's case, it may be said that there are many repetitions and much tautology of expression. With regard, however, to the former, we have the authority of the report of cases constantly published in books and periodicals, where the repetitions which occur in the daily notes of cases are fully as numerous, and that too of persons in whom the public and the profession take no more interest than what arises from the peculiarity of their diseases: and as to the latter, we have chosen rather to give the words of the illustrious patient himself, than to attempt any paraphrase of our own.

During the few days which the Dean passed in Dublin he had an attack of his old complaint; he proceeded, however, as soon as possible, to the country, from whence, after his installation in the Deanery, in 1713, he says: "I was at first horribly melancholy, but it begins to wear off, and change to dulness." Writing to Archbishop King, on the 16th of July, he continues:

"I have been so extremely ill with the return of an old disorder in my head that I was unable to write to your Grace." He was confined to his room at this period for a fortnight, but appears to have recovered his health by a short sojourn at his former parish where Stella then resided.

In his *Imitations of Horace's Epistles*, he thus humorously, but, in all probability, truly, describes his appearance after this attack:

"But was so dirty, pale, and thin,
Old Read would hardly let him in."

The gloomy shadows of the future perpetually crossed his path: his new locality in Kevin-street,—the disagreements of his Chapter,—the loss of his friends and companions in the stirring scenes he so lately left,—all tended to produce discontent, and acted most injuriously on his desponding imagination. He speaks of seeing his "life so fast decline,"—

"Removed from kind Arbuthnot's aid,
Who knows his art, but not his trade;
Preferring his regard to me
Before his credit or his fee."^(a)

These attacks continued during the remainder of that year and part of the next. From 1714 to 1719, we have but scanty means of ascertaining his state, for the correspondence during this period, which has come down to us, is chiefly of a business character, and does not enter into those personal details from which the state of his health may be gleaned. It is scarcely possible, however, to conceive that his head remained free for so long a time.

In December, 1718, Dr. Arbuthnot writes to him: "Glad at my heart should I be if Dr. Helsham^(b) or I could do you

(a) Dr. Arbuthnot, physician to Queen Anne, was a native of Scotland, a very elegant scholar and writer, and greatly attached to Swift.

(b) Dr. Helsham, a distinguished physician in this city in the time of Swift, to whom, it appears, he was medical adviser after the death of Sir P. Dun, which occurred in 1717. He was also a very elegant scholar and writer,

any good. My service to Dr. Helsham; he does not want my advice in the case. I have done good lately to a patient and a friend in that complaint of a vertigo, by cinnabar of antimony and castor made up into boluses with confect. of alkermes. I had no great opinion of the cinnabar, but trying it amongst other things, my friend found good of this prescription. I had tried the castor alone before, not with so much success. Small quantities of *Tinctura Sacra* now and then will do you good."

From the 6th of January to the 19th of February, 1719, he was confined by a severe attack. In May, he writes to Lord Bolingbroke: "My health is somewhat mended, but at best I have an ill head and an aching heart."

In 1720 circumstances of a political nature occurred, which, by occupying the mind of Swift, and again engaging his powerful energies, appear to have acted salutarily with respect to his bodily health. Literature, politics, and the society of his friends, dispelled for a time his melancholy. His deafness at this period was not the least distressing portion of his malady: "What if I should add," he says, "that once in five or six weeks I am deaf for three or four days."

In May he had a severe attack of ague, which even incapacitated him from writing. It continued for a whole year, although, he writes to Mr. Cope, "I am still under the discipline of the bark to prevent relapses."

In September, 1721, he removed to Gaulstown for the benefit of his health, from whence he writes to Mr. Worrall, his sub-dean: "I have now and then some threatenings with my head; but have never been absolutely giddy above a minute, and cannot complain of my health, I thank God."

and several of his verses have been published, along with those of Sheridan and Delany, in Swift's works.

The *Tinctura Sacra* mentioned by Arbuthnot consisted of aloes, cardamoms, ginger, and Spanish white wine. It has not been known under this name for half a century at least.

In the correspondence with Vanessa there is very little allusion made to his illness. About this period the following notices, however, should not be omitted. Writing to her from Gaulstown, on the 15th of July, 1721, he says: "If you knew how I struggle for a little health, what uneasiness I am at in riding and walking, and refraining from every thing agreeable to my taste, you would think it but a small thing to take a coach now and then and converse with fools and impertinence, to avoid spleen and sickness."

In the summer of 1722 he removed to the country for the benefit of the air;—and some of his letters to Vanessa at this period contain notices of his state of health, but they allude more to the condition of his mind than the precise state of his bodily ailments. Thus, in his letter from Lough Gall, on the 13th of July, he writes: "I fly from the spleen to the world's end." Coffee, it seems, was a favourite beverage with both, but it produced too much excitement in the Dean to be often resorted to. "The best maxim I know in life is to drink your coffee when you can, and, when you cannot, be easy without it. * * I am not cheerful enough to write, for I believe that coffee once a week is necessary to that. * * I gave all possible way to amusements, because they preserve my temper as exercise does my health; and without health and good humour I would rather be a dog. I have shifted scenes oftener than I ever did in my life, and I believe have lain in thirty beds since I left the town."

Gay, the poet, writing to him, in February, 1723, entreats of him to come to England for change of air; and continues, Dr. Arbuthnot "thinks, that your going to Spa, and drinking the water there, would be of great service to you, if you have resolution enough to take the journey." The death of Vanessa occurred in this year, and the memorable instance of his outburst of passion, the last time he saw this lady, can scarcely, we think, be attributed solely to the effects of temper, but must, in part at least, have been caused by disease.

Three years later, after Stella's first illness, Sir Walter Scott, generously accounting for "the unrestrained violence of his feelings," writes: "To this must be added his personal health, broken and worn down by the varying attacks of a frightful disorder; his social comfort destroyed by the death of one beloved object, and the daily decay and peril of another."

Writing to Lord Carteret, in September, 1724, Swift says, "being ten years older than when I had the pleasure to see your Excellency last, by consequence, if I am subject to any ailments, they are now ten times worse; and so it has happened; for I have been this month past so pestered with a return of the noise and deafness in my ears, that I had not spirit to perform the common offices of life." In this letter he likewise regrets his inability to change the climate, which, he seems to think, would do him good. In the April following he complains bitterly of these two symptoms, but by removal to his friend Delany's place, at Quilca, he appears to have recovered for the time being. In the August of this year he writes: "My deafness has left me above three weeks, and therefore I expect a visit from it soon; and it is somewhat less vexatious here in the country, because none are about me but those who are used to it."

In the August of the same year, he informs Mr. Tickell, in a letter which relates to the trial of Mr. Proby, son to the Surgeon-General of that time, that he had been tormented with an old vexatious disorder of a deafness and noise in his ears, which, he continues, "has returned, after having left me above two years, and makes me insupportable to others and myself." It left him, however, during the month of September, but returned again in October, so that he says, "I am fit for nothing but to mope in my chamber."

In November, 1725, he writes to the same person: "I have got slowly out of a favourite disorder that hath confined me these ten days." Upon the 13th of the month, however, he was able to enjoy society with a few select friends.

In 1726 Swift visited London, but his correspondence at

this time is so fully occupied with the illness of Stella^(a), which then assumed a very threatening aspect, that we are unable to glean anything of his own state of health from it, except those expressions which speak of his great dejection of spirits. After Stella's first recovery, while returning to Ireland, he suddenly got rid of his giddiness at Holyhead.

He again returned to London, and writes to Dr. Sheridan, in June, 1727: "My stomach is pretty good, but for some days my head has not been right; yet it is what I have been formerly used to." The next month, however, he had a decided attack, brought on by partaking of "cider, champagne, and fruit." In August his deafness increased to a greater extent than he had ever before experienced, accompanied by the giddiness and tottering, to which we have so often alluded, owing to which he was unable to write for any length of time. The letter to Sheridan, which is our authority for this attack, contains the following prophetic passage: "I believe this giddiness is the disorder that will at last get the better of me." By removing to his friend Pope's residence, at Twickenham, he got somewhat better; but the sad accounts of Stella's last and fatal illness quite unmanned him, and aggravated both his bodily and mental sufferings. "My weakness, my age, my friendship, will bear no more." And again: "I walk like a drunken man, and am deafer than ever you knew me. * * * These are the perquisites of living long: the last act of life is always a tragedy at best, for it is a bitter aggravation to have one's best friend go before them." These, and such like expressions, tell better than any word of our's his state of mind and body. His friends in Ireland, becoming alarmed about his state, wrote upon the subject to Pope, who then watched him with the warmest solicitude, and who, as well as Arbuthnot, saw him daily, and endeavoured to soothe his excited feelings.

(a) The poetical names of Stella and Vanessa have now become so much better known than those of Miss Johnston and Miss Vanhomrigh, that we have employed them in this paper.

On learning the sad tidings about Stella, and not wishing, perhaps, that Pope (with whom he was residing), and other friends, should witness his despair, he walked into London, and shut himself up in private lodgings. To this most natural expression of feeling, Johnson, the most malevolent of all Swift's biographers, labours to assign other motives; but Pope's correspondence on the subject sets the matter in its true light. He was unable to leave London till the beginning of October. The day before he left the English capital, he again, however, suddenly recovered his hearing at an inn in Aldersgate-street; on which circumstance Gay and Pope, in a joint letter which they wrote to the Dean, congratulating him on his improved health, remark: "No doubt, your ears knew there was nothing worth hearing in England."

"Upon the approach of winter, Swift," says Mr. W. Monck Mason, "formed a design of passing that season in the South of France: he hoped the air of that mild climate would mitigate the symptoms of his recurring disorder; and was actually upon the point of carrying his resolution into effect, when the unexpected news of the King's death caused him to part from it."

During the few months which intervened between his return to Ireland and the death of Stella, which occurred on the evening of the 28th of January, 1728, Swift, in his correspondence, speaks little of himself, though it may be gleaned that he was several times confined to his chamber. "Swift was now," says Sir Walter Scott, "in a manner alone in the world, afflicted by many of those varied calamities with which, to use his own words, the Author of our being weans us gradually from our fondness of life, the nearer we approach the end of it. Disease and decay of nature,—the death of many friends, and the estrangement or ingratitude of more,—a want of relish for earthly enjoyments, with a general dislike for persons and things daily increasing upon him,—passions too readily irritable, and the keen sensations of remorse after having extrava-

gantly indulged them,—all these evils combined to darken his future prospect; and the gleams of cheerfulness and enjoyment which yet occasionally gilded his way grew fewer and more languid as his path tended downwards, until he reached the sad point beyond which all was 'second childishness and mere oblivion.'

Gay, writing to him on the March following the death of Stella, says: "I am extremely sorry that your disorder has returned; but as you have a medicine which has twice removed it, I hope, by this time, you have again found the good effects of it." What this medicine was we have not been able to discover; but that it was a recipe of some kind, and not change of air, we learn from Mrs. Howard's having requested a copy of it. During the spring and summer he passed most of his time in the county of Armagh; writing from whence to Dr. Sheridan, on the 18th of September, he says: "My continuance here is partly owing to indolence, and partly to my hatred to Dublin. I am in a middling way, between healthy and sick, hardly ever without a little giddiness or deafness, and sometimes both,"—natural expressions in a man who had so lately suffered the bereavement which Swift did, and who was then without society or amusement in the dull village of Market-hill, where he remained till the beginning of the following year, when he had another very severe attack, which continued during the month of January. In a communication to Mr. Worrall, of this date, he says: "I have been now ill about a month, but the family are so kind as to speak loud enough for me to hear them; and my deafness is not so extreme as you have known, when I have fretted at your mannerly voice, and was only relieved by Mrs. Worrall." Nevertheless, he was well enough to enclose in this letter the manuscript for an *Intelligencer*.

Pope, in writing to Dr. Sheridan about this time, says that the *Dunciad* "had never been writ but at his request, and for his deafness; for, had he been able to converse with me, do you think I had amused my time so ill?" He left Sir Arthur

Atcheson's, at Market-hill, and returned to Dublin in February, having been altogether away about eight months, during which time he had half-a-dozen returns of the giddiness and deafness, each of which lasted about three weeks. "This disorder," he states, "neither hinders my sleeping, nor much my walking; yet," he complains, in common with all deaf persons^(a), "it is the most mortifying malady I can suffer. When it is on me, I have neither spirits to write or read, think or eat, but I drink as much as I like, which is a resource you" (Mr. Pope) "cannot fly to when you are ill; and I like it as little as you, but I can bear a pint better than you can a spoonful." From this it would appear that Swift was not, in later life, as abstemious as he had been years previously, or as, indeed, the progress of his malady required he should be.

Some months now elapsed without any decided attack, yet his head was never quite free from giddiness, which generally increased towards night, but for half a year he had no return of his deafness. He again had recourse to horse exercise, which, no doubt, had a great effect in improving his health. This improved condition continued till 1730, when, from the following paragraph in Dr. Arbuthnot's letter, received the 13th November, we suppose he had another attack: "The passage in Mr. Pope's letter, about your health, does not alarm me: both of us have had the distemper these thirty years. I have found that steel, the warm gums, and the bark, all do good in it. Therefore, first take the vomit A; then, every day, the quantity of a nutmeg, in the morning, of the electuary marked B; with five spoonfuls of the tincture marked D. Take the tincture, but not the electuary, in the afternoon. You may

(a) The morose, discontented, and unhappy temper of some persons affected with deafness, particularly if they have not much resource within themselves, is frequently expressed in their looks. The contrast in society between the frown of the partially deaf and the smile of the totally blind is very remarkable; there are, however, bright exceptions to the contrary in persons of superior understanding, and in those who, being completely deaf, are not annoyed by hearing only a portion of the conversation.

take one of the pills marked C, at any time when you are troubled with it; or thirty of the drops marked E, in any vehicle, even water. I had a servant of my own that was cured merely with vomiting. There is another medicine not mentioned, which you may try; the pulvis rad. valerianæ sylvestris, about a scruple of it twice a day. How came you to take it in your head that I was queen's physician? When I am so, you shall be a bishop, or anything you have a mind to. Pope is now the great reigning poetical favourite.

"I recommended Dr. Helsham to be physician to the Lord Lieutenant. I know not what effect it will have. My respects to him and Dr. Delany.

"A.—℞. Pulv. rad. ipecacuanæ, ʒj.

"B.—℞. Conserv. flavedin. aurant. absynth. Rom. ana ʒvj. rubigin. martis in pollin. redact. ʒiij. syrup e succo kermes, q. s.

"C.—℞. As. foetid. ʒij. tinctur. castor. q. s. M. fiant pilule xxiv.

"D.—℞. Cortic. Peruviani elect. rubigin. martis ana ʒj. digere tepidè in vini alb. Gallic. lb. ij. per 24 horas: postea fiat colatura.

"E.—℞. Sp. cor. cerv. sp. lavendul. tinctur. castor. ana ʒij. Miscel.^(a)

Notwithstanding the very extensive correspondence of Swift, greater than that of any other writer we are acquainted

(a) In a note to this prescription of Arbuthnot's we found the following in Scott's edition: "As these receipts may possibly be useful to some persons troubled with the Dean's complaint of giddiness, Dr. Arbuthnot's receipt of bitters, for strengthening the stomach, is added.

"Take of zedoary root, one drachm; galangal and Roman wormwood, of each, two drachms; orange peel, a drachm; lesser cardamom seeds, two scruples. Infuse all in a quart of boiling spring water for six hours; strain it off, and add to it four ounces of greater compound wormwood water.—H."

We have copied all these prescriptions exactly as they were printed.

with, which has been collected and published by his several biographers, there are still many letters and several poems of his which have never been printed. Among the former we may enumerate his correspondence with Knightly Chetwode, Esq. (which ranges between 1714 and 1731), from whose descendant^(a) we have received the following passage, contained in a letter dated Dublin, 23rd November, 1727: "You tell me that, upon my last leaving Ireland, you supposed I would return no more, which was probable enough, for I was nine weeks very ill in England, both of giddiness and deafness, which latter being an uncomfortable disorder, I thought it better to come to a place of my own than be troublesome to my friends or living in lodging, and this hastened me over, and by a hard journey I recovered both my ailments." In another letter to the same gentleman, dated at Quilca, July 19th, 1725, he writes: "I came here for no other business but to forget and be forgotten. I detest all news or how the world passes. I am getting again into a fit of deafness; the weather is so bad, and continues so beyond any example in memory, that I cannot have the benefit of riding, and am forced to walk perpetually."

In addition to his bodily ailments, Swift evidently sank in spirits after the year 1730; and of this his friends seemed quite aware. Lord Bolingbroke, writing to him in January, 1731, thus alludes to this circumstance: "I begin my letter by telling you that my wife has been returned from abroad about a month, and that her health, though feeble and precarious, is better than it has been these two years. She is much your servant, and as she has been her own physician with some success, imagines she could be your's with the same. Would to God you was within her reach. She would, I believe, prescribe a great deal of the *medicina animi*, without having re-

(a) Edward Wilmot Chetwode, Esq., of Woodbrook, Portarlington. We wish our friend could be persuaded to publish this interesting correspondence: it is a debt he owes his ancestor, his country, and himself.

course to the books of Trismegistus. Pope and I should be her principal apothecaries in the course of the cure; and though our best botanists complain that few of the herbs and simples which go to the composition of these remedies are to be found at present in our soil, yet there are more of them here than in Ireland; besides, by the help of a little chemistry, the most noxious juices may become salubrious, and rank poison specific." And again, in his own letter of the 12th of June, 1731, to Pope, we read the same: "I doubt habit has little power to reconcile us with sickness attended by pain. With me the lowness of spirits has a most unhappy effect. I am growing less patient with solitude, and harder to be pleased with company, which I could formerly better digest, when I could be easier without it than at present. * * * I grow every day more averse from writing, which is natural; and, when I take a pen, say to myself a thousand times, '*Non est tanti*.' My poetical fountain is drained, and, I profess, I grow gradually so dry, that a rhyme with me is almost as hard to find as a guinea; and even prose speculations tire me almost as much."

"For poetry, he's past his prime,
He takes an hour to find a rhyme."^(a)

The Dean, however, it must be remembered, was then in his sixty-fourth year.

On the 29th of this month he writes to Mr. Gay: "The giddiness I was subject to, instead of coming seldom and violent, now constantly attends me more or less, though in a more peaceable manner, yet such as will not qualify me to live among the young and healthy." This latter alludes to an invitation to visit the Duchess of Queensbury, near Bristol. The poor Dean was quite conscious at this time (as may be gleaned from his correspondence) of his increasing peevishness of temper, as well as those outbursts of passion related by his biographers. Yet neither in his expressions, nor the tone of his writing, nor

(a) Verses on his own death, written two months later.

from an examination of any of his acts, have we been as yet able to discover a single symptom of insanity, nor aught but the effects of physical disease, and the natural wearing and decay of a mind such as Swift's,—hastened, perhaps, by disappointed ambition,—the bereavement of his friends,—public ingratitude,—the want of those companions, with tastes and habits suited to his own, with whom he had so long enjoyed the most friendly intercourse,—and the collapse ensuing upon the retirement from those exciting political, as well as literary matters, in which he had previously engaged. "*Vertiginosus, inops, surdus, male gratus amicus*," was an expression in which he often indulged. Neither the character of this paper, nor the space which we are enabled to allot to it, permits us to allude to the tone or style of his writings at this period; but certainly, although they do not, during the few following years, exhibit the same mental vigour as some of his earlier productions, they certainly in no wise countenance the opinion that any aberration of intellect had taken place.

In the November of 1731 he wrote the memorable and prophetic verses on his own death. Some of these are so descriptive of his condition at this time that we cannot refrain from quoting them here:

"See how the Dean begins to break,
Poor gentleman, he droops apace,
You plainly find it in his face;
That old vertigo in his head
Will never leave him till he's dead;
Besides, his memory decays,
He recollects not what he says."

That Swift was well aware of the disease under which he laboured, and fully expected the very conclusion to which it arrived, there can be no manner of doubt. The following notable instance of this is well authenticated: Dr. Young, the author of the *Night Thoughts*, relates, "that walking out with Swift and some others about a mile from Dublin, he suddenly

missed the Dean, who had stayed behind the rest of the company. He turned back, in order to know the occasion of it, and found Swift at some distance, gazing intently at the top of a lofty elm, whose head had been blasted. Upon Young's approach he pointed to it, saying, 'I shall be like that tree; I shall die first at the top.' (a) This occurred many years previously. Byron had a similar feeling, and more than once spoke of "dying, like Swift, at the top first." (b)

In the early part of 1732 Swift hurt his leg, and the lameness alluded to in several of his letters at this period was owing to this cause.

In February, 1733, he writes to Lord Oxford: "I am just recovering of two cruel indispositions of giddiness and deafness after seven months. I have got my hearing; but the other evil still hangs about me, and, I doubt, will never quite leave me until I leave it." And this continued until the 20th March, so as to prevent his engaging in any business, or even answering his letters; and the death of Gay, which occurred shortly before this, served materially to increase his lowness and despondency. He again resumed his drops and bitters towards the end of the month, but completely gave up dining out. "I humdrum it either on horseback, or dining, or sitting the evening at home, endeavouring to write, but write nothing, merely out of indolence and want of spirits." The Dean used to walk at this time a great deal, and occasionally got into excessive heats by so doing. In one of his letters to Mr. Forde he complains of having lost half his memory, and all his invention; and to Pope he says: "When I was of your age I thought every day of death; but now every minute: and a continual giddy disorder, more or less, is a greater addition than that of my years." All his friends at this time endeavoured to persuade him to go to Spa or Bath, but he seems to have lacked energy for the undertaking, and says, in answers to pressing invitations from

(a) Nichols's edition of Sheridan's *Life of Dr. Swift*, vol. I. p. 284.

(b) "The Infirmities of Genius," by R. R. Madden, M. D., vol. II. p. 157.

his English friends, "I declare my health is so uncertain that I dare not venture among you at present." This condition of health remained permanent during all the summer of 1733. The Dean occasionally resorted to emetics when his attack of giddiness came on, although at this period it does not appear to have been produced by derangement of the stomach as much as formerly. "Those sort of disorders," says Mr. Forde, in his letter to him in November, "puzzle the physicians every where; and they are merciless dogs in purging and vomiting to no purpose when they do not know what to do. I heartily wish you would try the Bath waters, which are allowed to be the best medicine for strengthening the stomach." During the last months of this year, Swift's gloom and despondency increased; and he had scarcely a friend about him whose society he could enjoy. Sheridan and Delany had both left Dublin, and his principal amusement in the evening was playing backgammon with Mrs. Worrall.

The two most pressing symptoms of his disorder (a) now scarcely ever left him; but in the spring of 1734 he again improved in health, spirits, and appearance. Still his indolence and apathy increased. His regimen was remarkably simple: his breakfast consisted in a bowl of rice-gruel; and he adds, in a letter to Miss Hoadly, daughter to the Archbishop of Dublin,

(a) The following curious prescription was found endorsed in the Dean's handwriting:

"R. Nov. 3d, 1733. *Dr. Ratcliff's Rec^d for Deafness, sent by my Lady Monastell.*

"Doctor Ratcliff's prescription for a noise in the head and deafness, proceeding from a cold moist humor in the head.

"Take a pint of sack whay, make very clear, halfe sack and halfe water, boyle in it sum plain reuel sage, and a sprige of Rossmery; take it growling to rest, with thirty or forty drops of spirit of hartshorn, continue it as long as you find benefit by it, expectly the winter seson; he may sweten or not with sirop of Cowsep. He orderd alsoe a spice capp: to be made of clowes, masse, and pepper mingled finely, powdered, and put between too silke, and quieted to wear next the head, and for a man to be sowld within side his wig."

"I am wholly a stranger to tea and coffee, the companions of bread and butter." The concluding portion of this letter is so apposite to the present times, that though it does not bear upon the subject in hand, we here insert it. "I hope and believe my Lord Archbishop will teach his neighbouring tenants and farmers a little country management. And I lay it upon you, madam, to bring housewifery in fashion among our ladies; that by your example they may no longer pride themselves on their natural or affected ignorance."

The tottering which first attacked him in the year 1711, returned again in November, 1734: and, to increase his misfortunes, his eyesight at this period began to fail, and from some whim Swift had a great dislike to the use of spectacles. Two of the avenues both of knowledge and amusement being thus shut out, need we wonder that the poor Dean's temper increased in fretfulness, and occasionally induced him to give way to those outbursts of passion which have been related of him. His *Medicina Gymnastica*, as it was termed by his friends, no longer alleviated his malady, or afforded him amusement. He well knew from experience the beneficial effects of active exercise upon his distressing complaint, and when he was not able to go abroad, he sometimes enjoyed it by chasing his friends up and down stairs, and through the large apartments in the deanery, "till he had accomplished his usual quantity of exercise." This anecdote has been related by some writers upon his character for the purpose of proving incipient insanity, but with what force we are utterly at a loss to discover, particularly as his writings and correspondence at this period exhibit a perfectly unimpaired mind.

The following quotations from the Dean's memorable letter to Mr. Blashford, gives the reader so good an idea of its author and his habits, that we here transcribe them:

"There is an inhabitant of this city, of whom I suppose you have often heard. I remember him from my very infancy, but confess I am not so well acquainted with him as in pru-

dence I ought to be; yet I constantly pretend to converse with him, being seldom out of his company, but I do not find that our conversation is very pleasing to either of us. His health is not very good, which he endeavours to mend by frequent riding, and fancies himself to find some benefit by that exercise, although not very effectual. He intended, in the pursuit of health, to have gone a long northern journey, and to have stayed there a month; but his friends (who are very few), hearing that the place where he proposed to reside was not proper for riding, diverted him from it. * * * By these incitements, he seems determined to quarter himself upon you for three weeks at least, if he can have your consent, or rather that of your lady, although I find he never had the honour to see her. He travels with two servants, and consequently three horses; but these latter are at hack, and the former at board-wages, so that neither of them will trouble you. As to the person himself, he every day drinks a pint of wine at noon, and another at night; and for the trouble he gives the house, he will allow one bottle more every day for the table; but not one drop for foreigners, who are to drink on your account."

Pending the answer to this, he rode to Howth Castle, and as he was getting on horseback he was seized with a severe fit of giddiness, which obliged him to lie down for two hours before he was able to proceed into town;—this prevented his visiting Wicklow, as he intended.

In March, 1735, writing to Alderman Barber, he thus describes his state:

"As to myself, I am grown leaner than you were when we parted last, and am never wholly free from giddiness and weakness, and sickness in my stomach, otherwise I should have been among you two or three years ago, but now I despair of that happiness. I ride a dozen miles as often as I can, and always walk the streets, except in the night, which my head will not suffer me to do. But my fortune is so sunk, that I cannot afford half the necessities or conveniences that I can

still make a shift to provide myself with here. My chief support is French wine, which, although not equal to your's, I drink a bottle to myself every day. I keep three horses, two men, and an old woman, in a large empty house, and dine half the week, like a king, by myself. * * You see by my many blotings and interlinings, what a condition my head is in." His writing at this time, apparently from his defect of vision, was greatly blotted, and very difficult to read. He fell off greatly in flesh during this year, and was, therefore, unable to ride any distance; he was also unable to attend church "for fear of being seized with a fit of giddiness in the midst of the service."

He designed to pass the winter of this year with his friend Sheridan, at Cavan, and set out upon the 3rd of November, but only reached as far as Dunshaughlin that night, from whence his journal to Mrs. Whiteway commences. He reached Cavan the fourth day, greatly fatigued, but apparently improved in spirits from the society of his old and dear friend. His leg, which had again ulcerated, prevented his taking his usual quantity of exercise, and made him exceedingly fretful and uneasy while he remained in Cavan. And Mrs. Whiteway, who seems to have been very much alarmed at his state at that time, writes to him: "I conjure you, dear Sir, not to trust any longer country helps; your appetite and your health is in the greatest danger by sitting so much as you must be obliged to do till it is well." His attendants in Cavan were an "apothecary and a barrack surgeon." His appetite continued good, and in the beginning of December the leg healed. He returned to Dublin before the end of the year.

The February of 1736 again saw the Dean laid up with a severe attack; and in April, by one of his letters to Pope, he acknowledges that his illness utterly disqualified him from any conversation. During the summer of this year he enjoyed but little comfort, his spirits and his flesh both wasted, till scarcely any of either remained, but he was still able to write to a few select friends.

It is remarkable that several of Swift's friends suffered from symptoms somewhat similar to his own. Thus Harley, Gay, Mrs. Barber, Pope, Mrs. Howard, Lady Germain, Arbuthnot, and others, all suffered from what is popularly termed a "fulness of blood to the head." And now

"Tis after tie was loosened from his heart;"

and, with the exception of Pope and Bolingbroke, all his early friends and acquaintances had been removed.

In November of the year 1736 Sheridan congratulates Mrs. Whiteway "upon the recovery of our dear friend, the Dean;" and we believe it was during this interval of ease that he commenced his last literary production, "The Legion Club," which, from a sudden attack, he was obliged to leave half finished.

We have already mentioned his great wasting and loss of flesh: the two following quotations upon this subject may, we think, be here inserted: "Among his singularities," says Dr. Hawkesworth, "were his resolution never to wear spectacles, and his obstinate perseverance in the use of too much exercise. His want of spectacles made it difficult to read, and his immoderate exercise wasted his flesh and produced a poorness in his blood, as he was often told by his friends and physicians." Again, the Dean writing to Pope, on the 2nd of December, 1736, says: "I have not been in a condition to write: years and infirmities have quite broke me; I mean that odious continual disorder in my head. I neither read nor write, nor remember, nor converse: all I have left is to walk and ride; the first I can do tolerably; but the latter, for want of good weather at this season, is seldom in my power; and having not an ounce of flesh about me, my skin comes off in ten miles riding, because my skin and bone cannot agree together. But I am angry because you will not suppose me as sick as I am, and write to me out of perfect charity, although I cannot answer."

Delany, in that most unworthy and unphilosophical attempt
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to explain the so-called "decay in his understanding," when he says his *friend*(a) "reason gradually subsided as his passions became predominant," thus remarks upon his state at this period of his life: "And to this end another cause also contributed; an obstinate resolution which he had taken never to wear spectacles,—a resolution which the natural make of his eyes (large and prominent) very ill qualified him to support. This made reading very difficult to him; and the difficulty naturally discouraged him from it, and gradually drew him, in a great measure, to decline it. And as he was now at a loss how to fill up that time which he was before wont to employ in reading, this drew him on to exercise more than he ought; for that he over-exercised himself is out of all doubt.

"His physicians and friends, Dr. Helsham and Dr. Grattan, frequently admonished him of his doing so; but he paid no sort of regard to their monitions.

"The truth is, his spirit was formed with a strong reluctance to submission of any kind; and he battled almost as much with the infirmities of old age as he did with the corruptions of the times. He walked erect; and the constant and free discharges by perspiration, from exercise, kept him clear of coughs and rheums, and other offensive infirmities of old age. But he carried this contention, as he was apt to do every other, too far.

"This incessant and intemperate exercise naturally wasted his flesh, and exhausted the oil of his blood; and his lamp of life was then in the condition of an ill-tempered candle, which frets and flames at once, and exhausts itself in proportion as it frets.

"He was himself very sensible of his condition, and takes notice of it in a letter to Dr. Sheridan, May 22, 1736. He tells him: 'Your loss of flesh is nothing, if it be made up with spirit. God help him who hath neither!—I mean myself. I believe I shall say with Horace, *Non omnis morior* (I shall not all die), for half my body is already spent.'

"But although he was reduced to that emaciated condition, yet he had no more mercy on the half that remained than he before had for the half that was exhausted.

"The truth is, he was weary of life, and, therefore, under no solicitude to prolong it. Present health was his great concern, and he imagined, although erroneously, that his course of exercise contributed to it; and, in that persuasion, resolutely continued it."^(a)

The poor Dean, it seems, though not "with spectacles on nose," had now fairly shifted

"Into the lean and slippered pantaloons;
His youthful hose, well saved, a world too wide
For his shrunk shank; and his big, manly voice
Turning again towards childish treble, pipes
And whistles in its sound."

The vein of peevishness and discontent, partly mental, and partly owing to physical causes, and the ordinary and gradual decay to which flesh is heir,—yet aggravated, no doubt, by the loss of two of those most valuable senses by which man holds communication with external nature,—which we perceive in the latter years of Swift's correspondence, is not to be wondered at, although it has been endeavoured to be exaggerated into insanity by Orrery, Delany, Dr. Warton, and others.

In answer to a recommendation of Mr. Pulteney's on the subject of physicians, the Dean, in his answer of the 7th of March, 1737, writes: "I have esteemed many of them as learned and ingenious men: but I never received the least benefit from their advice or prescriptions. And poor Dr. Arbuthnot was the only man of the faculty who seemed to understand my case, but could not remedy it. But to conquer five physicians(b), all

(a) Observations upon Lord Orrery's Remarks, &c., by J. R. p. 100. This work, to which we shall again refer, is known to have been written by Dr. Delany.

(b) We know of at least eight medical men who attended Swift at different times, viz., Sir Patrick Dun, Drs. Arbuthnot, Radcliffe, Cockburn, Helsham, and Grattan, and Surgeons Nichols and Whiteway.

eminent in their way, was a victory that Alexander and Caesar could never pretend to. I desire that my prescription of living may be published (which you design to follow), for the benefit of mankind; which, however, I do not value a rush, nor the animal itself, as it now acts; neither will I ever value myself as a Philanthropus, because it is now a creature (taking a vast majority) that I hate more than a toad, a viper, a wasp, a stork, a fox, or any other that you will please to add."

Writing to Alderman Barber, the end of March, this year, he says: "I am forced to tell you my health is much decayed; my deafness and giddiness more frequent; spirits I have none left; my memory is almost gone. The public corruptions in both kingdoms allow me no peace or quiet of mind. I sink every day, and am older by twenty years than many others of the same age." And to Sheridan, ten days later, after having recapitulated his various bodily infirmities and hourly apprehensions from his giddiness, which were almost enough of themselves to render him insane, he adds: "Besides I can hardly write ten lines without twenty blunders, as you will see by the number of scratchings and blots before this letter is done. Into the bargain I have not one rag of memory, and my friends have all forsaken me, except Mrs. Whiteway, who preserves some pity for my condition, and a few others, who love wine that costs them nothing."

Both Sheridan and Mr. Richardson strongly pressed him to visit them in the country, but his increasing decay of physical energy and mental spirit prevented his accepting either invitations. To the former he adds: "I have not an ounce of flesh or a dram of spirits left me; yet my greatest load is not my years but my infirmities. In England, before I was twenty, I got a cold which gave me a deafness that I could never clear myself of. Although it came but seldom, and lasted but a few days, yet my left ear has never been well since: but when the deafness comes on, I can hear with neither ear, except it be a woman with a treble, and a man with a counter-tenor. This

unqualifies me for any mixed conversation: and the fits of deafness increase; for I have now been troubled with it near seven weeks, and it is not yet lessened, which extremely adds to my mortification."

The same excuses were made to Pope in return for his invitations to Twickenham. Towards the middle of summer he recovered, however, somewhat, so that he was occasionally able to enjoy the conversation of his few remaining friends.

That Swift was not, however, at any time, even during the most violent attacks, at all insensible, or in any way deprived of his reasoning faculties, may be learned from the fact, that when Sergeant Bettesworth threatened his life, and "thirty of the nobility and gentry of the Liberty of St. Patrick's waited upon him," and presented him with an address, engaging to defend his person and fortune, &c., it is related by the most veritable of his biographers, that, "When this paper was delivered, Swift was in bed, giddy and deaf, having been some time before seized with one of his fits; but he dictated an answer in which there is all the dignity of habitual pre-eminence, and all the resignation of humble piety."

In January, 1738, in one of his letters to Alderman Barber, he writes: "I have, for almost three years past, been only the shadow of my former self, with years of sickness, and rage against all public proceedings, especially in this miserably oppressed country. I have entirely lost my memory, except when it is roused by perpetual subjects of vexation."

So desponding was the Dean at times, and so great was his fear of the loss either of his memory or his reason, that he used to say, on parting with an intimate friend in the evening: "Well, God bless you! Good night to you; but I hope I shall never see you again."—"In this manner," says Mr. Deane Swift, "he would frequently express the desire he had to get rid of the world, after a day spent in cheerfulness, without any provocation from anger, melancholy, or disappointment." Upon the occasion of a large pier-glass falling accidentally on the

very part of the room in which he had been standing a moment before, and being congratulated by a by-stander on his providential escape: "I am sorry for it," answered the Dean: "I wish the glass had fallen upon me!" Lord Orrery mentions that he had "often heard him lament the state of childhood and idiotism to which some of the greatest men of this nation were reduced before their death. He mentioned, as examples within his own time, the Duke of Marlborough and Lord Somers: and when he cited these melancholy instances, it was always with a heavy sigh, and with gestures that shewed great uneasiness, as if he felt an impulse of what was to happen to him before he died."

In the commencement of this article we stated that Swift was, in early life, a man of abstemious habits, and this we believe to be a fact. While he mixed in the free and exciting society of London life during his middle age, we observed that he occasionally committed excess in wine, which was forced upon him more by the society in which he moved than owing to any liking of his own. Of its injurious effects, however, he seemed perfectly conscious, and generally resorted to extreme abstemiousness when he had a return of his giddiness. It would appear, however, from his journal and his correspondence, that he had been recommended by his physicians, not only to drink some wine in an undiluted state after dinner, but also to take a little brandy or spirits in the morning, probably in accordance with the opinion which most of his medical men seem to have entertained, that his disorders chiefly proceeded from the state of his stomach. The diseases of the liver, the spleen, and the other viscera, have had their day, and we believe the stomach was the organ to which all our ills were referred about the beginning of the last century.

Notwithstanding that none of his biographers have alluded to the subject, nor have his greatest enemies ever been able to say that the Dean was once seen intoxicated, or in any wise affected with liquor, it is quite evident that he took more wine

and spirituous liquors in his latter life than his medical men would now have recommended him; but whether from liking, habit, the advice of his physicians and friends, or as a stimulant or resource in those hours of gloom or despondency to which he was then subject, it is now difficult to say. Writing to Miss Richardson, he alludes to the kindness of her uncle in the following terms: "Hearing that my ill stomach, and a giddiness I was subject to, forced me in some of those fits to take a spoonful of usquebagh, &c., he sent me a dozen bottles," &c.

All the worst symptoms enumerated in the foregoing recital continued without intermission during the year 1738, so that it was thought by his friends that he could not long survive. Yet, notwithstanding his many infirmities, that was the year in which he achieved most for humanity in this City, and arranged that his property should, after his death, be applied to the erection of the hospital that now bears his name.

At the conclusion of this year another friend and relative, Mr. Harrison, was removed from him. And his correspondence on this subject shows, that although bowed down by the weight of years and infirmity, his intellect was still as clear, and his affections warmer than is usual with persons at his time of life. His correspondence was now very limited, and his letters very short and concise, and chiefly to his intimate friends.

The winter of 1739 was remarkably severe, and the Dean felt it greatly. Lord Castledurrow endeavoured to carry him off to Delany's, but without effect; he remained chiefly wrapt up in his own gloomy meditations at home, unwilling even to see those who might minister to his comforts or enjoyments.

On the 29th of April, 1740, he writes to Mrs. Whiteway: "I find that you and I are fellow-sufferers almost equally in our health, although I am more than twenty years older. But I am and have been these two days in so miserable a way, and so cruelly tortured, that can hardly be conceived. The whole last night I was equally struck as if I had been in Phalaris's brazen bull, and roared as loud for eight or nine hours. I am at this

instant unable to move without excessive pain, although not one-thousand part of what I suffered all last night and this morning. This you will now style the gout. I continue still very deaf." Yet he was able to give a dinner party within a fortnight after, so changeable was his malady; he used, however, to forget the names of his friends, even of those who visited him twice a week. We particularly mention this latter circumstance, because his subsequent increase of this defect has been enumerated by his biographers among the proofs of the insanity of a man past 73!

As his memory decayed and his deafness increased, and, perhaps, we should add, his feelings and affections became blunted, his bodily health somewhat improved, a circumstance not uncommon in such cases; and in the summer of this year "his health," says Mrs. Whiteway, "is as good as can be expected, free from all the tortures of old age; and his deafness, lately returned, is all the bodily uneasiness he has to complain of." And she adds, in her communication to Pope, from which we extracted the foregoing: "As I saw a letter of your's to him, wherein I had the honour to be named, I take the liberty to tell you (with grief of heart), his memory is so much impaired that in a few hours he forgot it; nor is his judgment sound enough, had he many tracts by him, to finish or correct them, as you have desired." Still, we must confess, we cannot read *insanity* in even this. That the excessive pain of which he complained in the spring was attributed, at least by his friends, to an attack of gout, may be inferred from the following passage in Mr. Pulteney's letter of June 3rd: "I had, some time ago, a letter from Mr. Stopford, who told me that you enjoyed a better state of health last year than you had done for some time past. No one wishes you more sincerely than I do the continuance of it; and, since the gout has been your physie, I heartily hope you may have one good fit regularly every year, and all the rest of it perfect health and spirits."

His approaching sad condition may be learned from one of his notes at this time: "I have been very miserable all night, and to-day extremely deaf and full of pain. I am so stupid and confounded, that I cannot express the mortification I am under both in body and mind. All I can say is, that I am not in torture; but I daily and hourly expect it. Pray let me know how your health is and your family. I hardly understand one word I write. I am sure my days will be very few; few and miserable they must be. If I do not blunder, it is Saturday, July 26th, 1740. If I live till Monday I shall hope to see you, perhaps, for the last time." (a)

The last two documents in the Dean's hand-writing, and, probably, the last he ever penned, are his address to his Sub-Dean and Chapter on the subject of the choir, and a note to Mrs. Whiteway, concerning her health: the former dated the 28th and the latter the 13th of January, 1741. Occasional entries in his account books were, however, made as late as 1742.

We must now conclude the history of this memorable case from the information bequeathed to posterity by his friends; for we regret to add that his medical attendants have not left us any thing to quote from. Therefore the recitals of others, and the opinions of his non-medical biographers,—none of whom, with the exception of Orrery, Deane Swift, Delany, and Faulkner, ever saw him at this or any other period of his life,—and it appears that only one of these saw him during the last three years of his life,—must be received by the profession with caution, and be accurately collated with the foregoing history of his symptoms, in order to arrive at a just conclusion as to his precise condition.

In the year 1742, the Dean is said to have given way to an outburst of passion, and committed violence upon the person of one of his clergy, Mr. Wilson; but the opinion of those who lived at the time, and were cognizant of the facts, is con-

(a) To Mrs. Whiteway.

clusive to the contrary. From this period, however, may be dated his complete loss of memory, and inability of managing his own affairs, so that proper guardians^(a) were obliged to be appointed to take care of him,—when

"Last scene of all,
That ends this strange, eventful history,"

we find him in

"Second childishness and mere oblivion:
Sans teeth, sans eyes, sans taste, sans everything."

This is at least the most that can be said of his "outrageous madness," "complete insanity," "dribbling fatuity," and "total imbecility," &c., as it has been termed by his biographers, and those who have attempted a description of his character. Faulkner says, that "in the beginning of the year 1741 his understanding was so much impaired, and his memory so much failed, that he was utterly incapable of conversation. Strangers were not permitted to approach him, and his friends found it necessary to have guardians appointed to take proper care of his person and estate. Early in the year 1742 his reason was wholly subverted, and became absolute lunacy." This account, and that in synonymous terms by Dr. Hawkesworth, who, be it remembered, never saw Swift, was chiefly derived from the information contained in the letters of Mrs. Whiteway and Deane Swift, Esq., published by Lord Orrery a few years after the Dean of St. Patrick's death; both of which very much exaggerate the account of the poor Dean's state at this time, as is shown by the manuscript notes appended to a copy of Hawkesworth's work by Dr. Lyon, who was the principal guardian of Swift at this time, and who must have enjoyed constant opportunities of seeing him.

As, however, the most complete, and, indeed, the only

(a) Dr. King was one of those named in the commission; but the care of the Dean was chiefly confined to the Rev. D. Lyon. Is the legal document of this commission still in existence; and on what account was it granted?

authentic account of the last few years of the Dean's life, and that from which all the biographers have gleaned their information, is contained in the two letters just alluded to, we here make a few extracts from them bearing upon the subject. Mrs. Whiteway's letter is dated November 22, 1742: "I told you, in my last letter, the Dean's understanding was quite gone, and I feared the farther particulars would only shock the tenderness of your nature, and the melancholy scene make your heart ache, as it has often done mine. I was the last person whom he knew; and when that part of his memory failed, he was so outrageous at seeing anybody that I was forced to leave him; nor could he rest for a night or two after seeing any person, so that all the attendance which I could pay him was calling twice a week to inquire after his health, and to observe that proper care was taken of him, and durst only look at him while his back was towards me, fearing to discompose him. He walked ten hours a day; would not eat or drink if his servant stayed in the room. His meat was served up ready cut, and sometimes it would lie an hour on the table before he would touch it, and then eat it walking." As the following account of his ophthalmic affection is the only one which is given from an authentic witness, and as it is somewhat fuller than that copied by Dr. Mackenzie from the work attributed by Scott to Delany, which, by the way, appears to have merely paraphrased Mrs. Whiteway's letter,—we here insert it as it was originally published by Lord Orrery in 1750: "About six weeks ago, in one night's time, his left eye swelled as large as an egg, and the lid Mr. Nichols (his surgeon) thought would mortify, and many large boils appeared upon his arms and body. The torture he was in is not to be described. Five persons could scarce hold him, for a week, from tearing out his own eyes; and for near a month he did not sleep two hours in twenty-four. Yet a moderate appetite continued; and, what is more to be wondered at, the last day of his illness he knew me perfectly well, took me by the hand, called me by my

name, and showed the same pleasure as usual in seeing me. I asked him if he would give me a dinner? He said: 'To be sure, my old friend.' Thus he continued that day, and knew the doctor and surgeon, and all his family, so well, that Mr. Nichols thought it possible he might return to a share of understanding, so as to be able to call for what he wanted, and to bear some of his old friends, to amuse him. But, alas! this pleasure to me was but of short duration; for the next day or two it was all over, and proved to be only pain that had roused him. He is now free from torture, his eye almost well, very quiet, and begins to sleep, but cannot, without great difficulty, be prevailed on to walk a turn about his room; and yet, in this way, the physicians think, he may hold out for some time."

We have quoted this letter at length, not only on account of its authenticity, and the greater credit in every way to be attached to it, but because it is undoubtedly from this document *alone*, which they have quoted *almost verbatim*, that all the biographers of Swift, from Faulkner, Delany, and Hawkesworth, down to the present time, have derived their information. And upon this conjecture of Mrs. Whiteway's, as to the effect of pain in awakening his dormant faculties and restoring his reason, Hawkesworth and Orrery have thought fit to ground some most erroneous notions with regard to the effects of pain upon insanity.

During the following year we really have no authentic account whatever of the Dean's state transmitted to us by any of the persons then about him; and, unfortunately, none of his medical attendants have in any way described it. Delany, and after him Faulkner and Hawkesworth, but we are not quite sure which first, give the following account of this year, 1743: it is, however, of little consequence to which the priority belongs, as the passage in the work of the former of these differs from that in the latter only in the transposition of one word, and the alteration of the tense of another. "After the Dean had continued silent a whole year, in this helpless state

of idiotcy, his housekeeper went into his room on the 30th November, in the morning, telling him that it was his birth-day, and that bonfires and illuminations were preparing to celebrate it as usual. To this he immediately replied: "It is all folly! they had better let it alone." That his silence was not, however, the sullenness of insanity, may be learned from the following account, said to have been given by Delany: "He would often attempt to speak his mind, but could not recollect words to express his meaning; upon which he would shrug up his shoulders, shake his head, and sigh heartily." In this very remarkable passage, which details anything but a state of insanity, we have, perhaps, the true account of Swift's actual condition. That he had not lost the sense of smell may be presumed from the fact that a little girl having blown out a candle in his chamber, the smell of which always offended him, he appeared very angry, and said: "You are a dirty little slut!" Both Faulkner's and Hawkesworth's accounts contain the following incongruous passage, in allusion to this circumstance: "Some other instances of short intervals of sensibility and reason, after his madness seemed to prove that his disorder, whatever it was, had not destroyed, but only suspended, the powers of his mind."

Lord Orrery, having heard of several expressions which he is said to have uttered with reference to himself, such as, "Oh, poor old man!" on seeing his face in a glass, &c., wrote to Mr. Deane Swift to inquire into the actual state of his illustrious relative, and received a letter in reply, dated 4th April, 1744, which, as it is the only authority for all the lengthened description of his biographers, we here insert, as it was first published in London, in 1751:

"As to the story of O poor old man! I inquired into it. The Dean did say something upon his seeing himself in the glass, but neither Mrs. Ridgeway nor the lower servants could tell me what it was he said. I desired them to recollect it by the time when I should come again to the Deanery. I have been there since, they cannot recollect it. *A thousand stories*

have been invented of him within these two years, and imposed upon the world. I thought this might have been one of them; and yet I am now inclined to think there may be some truth in it; for, on Sunday the 17th of March, as he sat in his chair, upon the housekeeper's removing a knife from him as he was going to catch at it, he shrugged his shoulders, and, rocking himself, he said: 'I am what I am, I am what I am,' and, about six minutes afterwards, repeated the same words two or three times over.

"His servant shaves his cheeks and all his face, as low as the tip of his chin; once a week, but under the chin and about the throat when the hair grows long it is cut with scissors.

"Sometimes he will not utter a syllable, at other times he will speak incoherent words; but he never yet, as far as I could hear, talked nonsense, or said a foolish thing.

"About four months ago he gave me great trouble: he seemed to have a mind to talk to me. In order to try what he would say, I told him I came to dine with him, and immediately his housekeeper, Mrs. Ridgeway, said, 'Won't you give Mr. Swift a glass of wine, Sir?' he shrugged his shoulders, just as he used to do when he had a mind that a friend should not spend the evening with him. Shrugging his shoulders, your Lordship may remember, was as much as to say, 'you'll ruin me in wine.' I own I was scarce able to bear the sight. Soon after he again endeavoured, with a good deal of pain, to find words to speak to me; at last, not being able after many efforts, he gave a heavy sigh, and, I think, was afterwards silent. This puts me in mind of what he said about five days ago. He endeavoured several times to speak to his servant (now and then he calls him by his name); at last, not finding words to express what he would be at, after some uneasiness, he said, 'I am a fool.' Not long ago the servant took up his watch that lay upon the table to see what o'clock it was; he said, 'bring it here,' and, when it was brought, he looked very attentively at it. Some time ago the servant was breaking a large stubborn coal, he said, 'that's a stone, you blockhead.'

"In a few days, or some very short time after guardians had been appointed for him, I went into his dining-room, where he was walking; I said something to him very insignificant, I know not what, but, instead of making any kind of answer to it, he said, 'go, go,' pointing with his hand to the door, and immediately afterwards, raising his hand to his head, he said, 'my best understanding,' and so broke off abruptly, and walked away." Now these two letters are really, after all, the only account of the last three years of Swift's life that has come down to us.

From this period, it is said,—but not, it must be remembered, by any person who saw him,—that he remained perfectly silent till his death, which occurred at three o'clock in the afternoon, upon Saturday, the 19th of October, 1745, in the seventy-eighth year of his age. With regard to the manner of his death, two very opposite accounts have been published. Lord Orrery says, it "was easy, without the least pang or convulsion. Even the rattling in his throat was scarce sufficient to give any alarm to his attendants, till within some very little time before he expired." This has been copied almost *verbatim* by Delany and Hawkesworth; but Faulkner, the only one of the four who was in Dublin at the time, says, he "died in very great agony, having been in strong convulsive fits for thirty-six hours before." Both accounts are probable. From the following circumstance we are, however, inclined to think that his death was not quite undisturbed. Mr. Samuel Croker King, one of the first surgeons in Dublin toward the end of the last century, was the apprentice of Mr. Nichols, the Surgeon-General, who, with Dr. Grattan, was Swift's attendant at the time of his death; and Mr. King's son informs us that his father was dining with his master, when he was suddenly sent for to see the Dean, who was taken very ill, the night before his death.

A *post mortem* examination was made by Mr. Whiteway, his relative, but all we are able to learn is, "that he opened the skull, and found much water in the brain." (a) Dr. Lyon,

(a) Works of Swift, vol. ii. p. 291. Dublin: Faulkner, 1763.

revising this work, has altered the expression to "the sinus of his brain being loaded with water." What other pathological appearances presented at the autopsy it is now difficult to say. Thus past from amongst us the greatest genius of his age, and one of the brightest ornaments of our country.

The Rev. David Stevens, one of the Dean's Chapter, had, it is related, several times expressed a desire to his friends and physicians, that the Dean should be trepanned, from an opinion which he entertained that he laboured under water on the brain; and to a certain degree his diagnosis proved correct.

Faulkner's Dublin Journal, for Tuesday, 22nd October, 1745, thus records the Dean's decease:

"Last Saturday, at three o'clock in the afternoon, died that great and eminent patriot, the Rev. Dr. Jonathan Swift, Dean of St. Patrick's, Dublin, in the seventy-eighth year of his age; who was born in the parish of St. Werburgh's, Dublin, the 30th of November, 1667, at his uncle, Counsellor Godwin Swift's house, in Hoey's Alley, which in those times was the general residence of the chief lawyers. His genius, works, learning, and charity are so universally admired, that for a news writer to attempt his character would be the highest presumption; yet as the printer hereof is proud to acknowledge his infinite obligations to that prodigy of wit, he can only lament that he is by no means equal to so bold an undertaking."

The Dublin Courant, published the Wednesday after the Dean's death, contains the following passage: "For some years past he has been entirely deprived of memory, and by degrees fell into a perfect insensibility."

Finding that this paper has already very much exceeded the limits to which we originally supposed it would extend, we think it better to take advantage of the natural division of the subject that here presents, and continue it in our next Number.

THERMO-THERAPEIA:

THE HEAT CURE:

OR, THE TREATMENT OF DISEASE
BY IMMERSION OF THE BODY
IN HEATED AIR.

BY

ERASMUS WILSON, F.R.S.

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THE THERMO-THERAPEIA

THE HEAT CURE

BY MR. URQUHART

LONDON: 1851

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THE THERMO-THERAPEIA: THE HEAT CURE.

THE THERMO-THERAPEIA: THE HEAT CURE.

For a knowledge of thermo-therapeia, medical science is indebted to Mr. Urquhart.

Thermo-therapeia is the application of atmospheric air at a high temperature to the surface of the body, for the relief of pain and disease. The poets use the expression, "bathed in light"; if we adopt the same language in reference to air, we may style the process a bathing in hot air or a hot air bath; but in no other sense does the term "bath" apply to its use.

Mr. Urquhart became acquainted with the construction and uses of the thermæ in the course of his travels in various parts of the world, and found it almost universal in cold and temperate climates, but absent in the tropics. By the people among whom it is found, the thermæ is employed as a luxury and a religion, the religion of physical purity, but not as a remedy against disease; it was left to Mr. Urquhart to apply highly heated air as a medicine for the relief of pain and disease, and with the most signal benefit.

The capacity of the human body for bearing dry air at a very high temperature is a matter of common observation; we see it in the daily occupations of copper-smelters, steel-pourers, the stokers of steam-engines and gas-ovens, of glass-blowers, porcelain-burners, and in a variety of manufactures and trades. And in a well ventilated thermæ, a temperature of 190° and

thence upwards to the temperature of, and above, boiling water, is not only bearable but absolutely soothing and agreeable.

If we inquire into the medical history of the men employed in the fiery occupations to which I have just referred, we shall find that they enjoy a state of health and longevity above the average of other men. Look upon them, and you perceive them to be strong, well built, muscular men, with that exact proportion of integument and muscle which denotes the nearest approach to the standard of manly beauty and health. The perspiration is streaming over the surface of their naked skin; they aliment the flowing tide, from time to time, with deep draughts of cold water or thin gruel; they frequently pursue their labours in open sheds exposed to a thorough draught of cold air; or, after enduring extreme heat for awhile, they emerge from the atmosphere of the furnace into the open air, naked as they were born, to cool their bodies in the refreshing breath of a north or an east wind. Our over-clothed and pampered skin creeps and shivers in sympathy with the seeming risk and danger of their exposure. But ask these men if they ever take cold, and they will tell you that they do not know the meaning of the word.

Our every-day observation, therefore, teaches us that the human body can bear and labour in high temperatures, not only without inconvenience or distress, not only without the danger of chill from subsequent exposure to cold air; but, on the contrary, with an increase of health, of strength and of condition; in other words, that the body derives from this process those special advantages of condition and power of endurance which are commonly sought for in the process of "training;" in truth, are acquired in no other way than by a systematic training. What a race, marvellous for power and strength and endurance, might not Britons become, exclaimed Mr. Urquhart on a recent occasion, if this kind of training were universal; if the *thermae* were to become an institution of common life.

The capabilities of the *thermae* for the purposes of training have already been recognised and applied. The readers of the *Field* are prepared to see the barbarous, the injurious, the exhausting process of training by the old method entirely discarded, and to behold the simpler, more natural, and more perfect operations of the *thermae* take its place. Not only is the thermal process of training the most advantageous for human beings, but it is also applicable, and has been applied with the most successful results, to animals.

I will endeavour to retrace my own experience, on my first introduction to the *thermae*, now sometime back. It was the winter time, the season bitterly cold; my inception as a "companion of the bath," took place in the private *thermae* of my esteemed friend Mr. George Witt, of Princes Terrace, Hyde Park. As an example of simplicity of construction, Mr. Witt's *thermae* may be usefully taken as an illustration. He had at the back of his house, a room twenty feet long by ten feet in breadth and twelve feet high, with a window looking out upon a lead-flat, such as is common in London houses. To convert this room into a *thermae* he divided it into two compartments by means of a wall which crossed it at about one third from its further end. He had, thus, two apartments; an outer one, the cooling room or *frigidarium* of the Roman *thermae*; and an inner one, entered by two small doors (inner and outer) in the partition wall, the *caldarium*, *calidarium* or *sudatorium*. To secure the detention of heat in the *calidarium*, a lath and plaster lining was placed inside and at the distance of a few inches from the wall and the space filled in with sawdust, and the floor was paved with earthen tiles bedded on concrete. Outside the room, on the lead-flat, an opening was cut through the wall for the construction of a common furnace; the furnace encased with brickwork entered the *calidarium* and its flue was carried around the apartment close to the floor. Having completed the circuit of the room it was made to ascend a few feet, then carried transversely across the end of the room above the

furnace, and subsequently permitted to escape at the corner of the ceiling into an outside chimney. The entire length of the flue was thirty-five feet, and as it was propped from the floor by means of a brick placed at short distances and a space left between it and the wall, the whole of its external surface was free to radiate its heat in all directions and communicate its temperature to the air of the apartment. A thick plate of glass let into the outside wall gave light to the room, and four holes, two below and two above, piercing the wall and furnished with movable plugs, afforded sufficient ventilation. Add to this description a wooden seat supported on the flue; a platform, which afforded additional sitting room over the masonry of the furnace; and a wooden couch, the *darchum* of the Romans, and the calidarium is complete.

Having left my garments in a portion of the outer apartment which served as a *vestiarium*, and girt around the loins with a *cummerbund*, the kilt of oriental nations, I entered the calidarium: the temperature was delicious, such a contrast with the exterior world. The wind and snow were raging without, while here was a paradise of 135 degrees of Fahrenheit. Within this hallowed nook anxiety and care and fatigue, like the burden of Banyan's Christian, seemed to fall from my shoulders; I stretched forth my limbs in peace and enjoyment; the brain seemed to think more lightly and pleasantly and my ideas flowed brightly and calmly. I longed to compare my sensations with those around me, for I was not alone; that day I was the seventh or ninth "companion of the bath," I scarcely remember which; but I called to mind that the greatest wisdom often lies in silence, and I yielded the pleasure of speaking for the greater pleasure of listening.

My friend, Mr. Witt, in the course of a few minutes was streaming with perspiration, which ran down his face in rills and dripped from his elbows and finger-ends in continuous drops, while my skin was as yet dry. He explained to me that this facility of perspiration distinguished the practised bather

from the unpractised, the educated from the uneducated skin; and he reminded me by that remark, how little opportunity the skin has, in this climate, of performing its normal function thoroughly and therefore healthily, and that the function of the skin in the majority of the inhabitants of this island is a dormant function and its purpose as an emunctory to the system almost entirely undeveloped.

I was struck also with the rich and healthy complexion of his skin; it took its hues from the free circulation of the pure arterial stream through the capillary plexus of the derma; as he drew his fingers forcibly across his chest, the white traces left by their pressure were instantly replaced by the glowing vermillion of the arterial flood. There were no gorged capillaries in that skin; no venous transformation in that cutaneous plexus; no deposits of unhealthy colouring matter either in the cuticle or in the tissues beneath; no pallor; no excess and no deficiency of fat; no choked pores; no wrinkles from loss of elasticity and contractility of the fibrous and muscular structures of the corium; no abnormal or deficient sensibility of the nerves; all was, as nature made it, perfect and beautiful. I looked for the first time in my life on a really healthy skin.

How very curious and striking was the difference between my friend's skin and that of everyone present; one gentleman, a finely-built handsome man, with a remarkably capacious chest, had too great a preponderance of adipose tissue, while the hue of the skin in an oblique light was a bright golden yellow. In another, the muddy tinge of the skin discovered the impure and muddy condition of the blood. The habitual use of the *therma* removes these discolorations, these indications of imperfect elimination, by drainage through the perspiratory system, and while it gives beauty to the skin, bestows health on the entire economy.

Seeing the perspiration flowing in such wonderful abundance from my friend's skin, and observing that he encouraged its quantity by taking frequent draughts of cold water; and led

into the same channel of thought by the state of my own skin which was now perspiring actively, I ventured to remark that we were literally supplying the means of washing the body from our inward selves. "It has always been a theme of wonder, in the exploration of the *thermae* of the Romans, as also in the examination of the writings of different translators and commentators," replied my friend, "how the Romans could have obtained a quantity of water sufficient to supply all their baths and the vast numbers of bathers who availed themselves of their use; but, it is evident, as you see, that a very small quantity of water for each person to rinse the body, after ablution in its own perspiration, would be all that is needed."

Another inference from these remarks is self-evident, but not the less important. Among our various medical remedies for procuring diaphoresis, a list which embraces antimony, guaiacum and ipecacuanha, hot air must take a prominent place. But how different its mode of action! If we ourselves were the subjects of treatment, how infinitely more agreeable should we find it, to convey ourselves bodily into the pleasant and agreeable temperature of the *calidarium*, than to consign the above nauseating medicines to our stomach. Moreover, the latter may fail; the former cannot fail. The former we can regulate to a nicety: we can procure as much perspiration as we will, we can suspend it when we will; but the antimonial may not do its duty sufficiently, while we dare not give more. The antimonial may be hours before it responds, may need encouragement, assistance; the *calidarium* breaks down all restraints in a few minutes and needs no second help.

After a free perspiration of half-an-hour's duration I was anointed with soap and had a rub down with a wisp of white fibre called *lyf*, the fibre of one of the palm trees commonly used in the east for the purpose to which it was now being applied. To the friction with soap succeeded a shower of warm water, then a douche of cold water, after which I was

made to sit still for some minutes until the warmth of the skin was restored. In Mr. Witt's *thermae* the ablutory process is performed in the *calidarium*, but where space permits, a closet or small apartment is devoted to the purpose and constitutes the *lavatorium*. Not unfrequently, the *lavatorium* is warmed by a part of the fire of the *calidarium* and then performs the double office of *lavatorium* and *tepidarium*. Where a proper *tepidarium*, having a temperature of 98° exists, it supplies an atmosphere which is intermediate in warmth between the *frigidarium* and *calidarium*, and serves as a transition between the two; preparing the skin, by a gentle warmth, before its exposure to the higher temperature on the one hand, and mitigating the extreme of depression of temperature, on quitting the *calidarium*, on the other.

To invalids, the transitional temperature of the *tepidarium* is of importance, and suggests one of the precautions necessary to be taken in employing the *thermae* as a medicine for the treatment of disease; but where the *thermae* is used for the purposes of cleanliness, maintenance of existing health, training, or luxury, then the absence of the *tepidarium* is of little consequence.

From the *calidarium* I passed therefore to the *frigidarium*, on this occasion, mid-winter, and a piercingly cold snowy day, truly deserving its name. I was then clothed in a sheet taken from one of the pigeon-holes of the *columbarium* standing in the corner of the room, my cummerbund was allowed to drop on the floor, and I was made to recline upon a cane couch immediately under the open window. How cool and pleasant were the puffs of wind that played over my face and limbs; how different their impression on my skin to what they had been an hour before. I needed not the assurance of my friend that there was no fear of catarrh or bronchitis; my own feelings told me that I could resist any amount of cold, and I was obliged to suppress a longing to walk out upon the leads with no other covering than my sheet, into the midst of the sheet

and wind; had the lead flat been a terrace or a lawn I could not have resisted the temptation.

To a person prone to take cold on exposure to slight draughts of air, this instinct of defiance of cold seemed very strange—one of the phenomena of the *therma*. I was reminded how the inhabitants of countries colder than Great Britain, for example, *Tierra del Fuego*, go about naked; and I also called to remembrance that our forefathers of England and Ireland, as well as the "naked savages" of Scotland, were equally without covering. The climate is still the same; the difference between the people of those times and these is therefore clearly nothing more than one of habit. The face, which is always uncovered and exposed to every alternation of temperature, still represents our original state of nakedness and endurance, but the rest of the body is swathed in the close folds of a heating clothing, and remains for ever etiolated and unnaturally sensitive to painful impressions, while its appreciation of agreeable impressions is proportionately destroyed. I lately saw a child, four years and a-half old, who had been brought up in the constant use of the *therma* and who had never worn clothes. He is a sturdy, healthy little fellow, graceful in his figure and movements, and has the independence of deportment of an Indian chieftain. Blows and outward injuries do not affect him painfully as they would other children; and being met one day playing naked in the snow he was asked whether he was cold: "cold?" said the boy, touching with his finger his chest and cheek, "yes, I think I am cold." It required that he should pass his finger over his body as he would have done over a marble statue to become aware that the surface of his skin was, in external sensation, cold.

"How is it," inquired the Rev. David Laing, "that in my visits among the very poor, I so rarely meet with consumption or serious consequences resulting from exposure to cold." I could not answer that question then, but now, I should have no hesitation in replying that the exposure of the poor to cold

air gave endurance to their skin and enabled them to resist the influence and the effects of cold. "In my early life," said Miss Jane Porter, one day when we were conversing on a kindred subject, "in my early life I was extremely sensitive to the impression of cold; if any part of my skin, however small, beyond the limits of my face, were exposed only for a few minutes to a draught of cold air, I was immediately seized with catarrh. I longed that my skin should become *all face*, for then it would have had the power to resist the cold." How suggestive these observations are when they are ranged side by side with the remarkable phenomena which are presented to us in following out the operations of the *therma*.

After awhile I exchanged the horizontal position on the couch by the open window, to a sitting posture; the sheet was thrown off from my back and limbs; the moisture of the surface was dried up, no wiping, excepting of the head and face was practised or required, the skin felt smooth and warm, and I was permitted to dress, but with the injunction that I was to dress leisurely, lest the perspiration, which had ceased, should again be excited. It is worthy of notice, that great attention is paid to the temperature of the skin during the curriculum of the *therma*; after the cold douche, we return to the *calidarium* to recover any waste of heat; and in the after cooling of the body in the *frigidarium*, the whole of the moisture must be dried off the skin, and perspiration must be wholly suppressed, as indicated by a peculiar smoothness and polish of the surface, before we are qualified to resume our dress. All clamminess of the skin must have ceased entirely before we resort again to our usual coverings.

Sometimes the fire of the furnace, instead of being admitted into the *calidarium*, as in Mr. Witt's *therma*, is made to travel under the pavement of the room, making a series of traverses from side to side and representing the *hypocaustum* of the Romans. In this arrangement, the floor is frequently excessively hot, too hot to be trodden by naked feet, and the use of

wooden shoes becomes necessary. The *therma* of Mr. Stewart Erskine Rolland, one of our highest authorities on the Bath after Mr. Urquhart, is constructed in this manner. I had recently the gratification of testing the merits of Mr. Rolland's *therma*; the temperature was 160°; the air, being perfectly dry, did not feel otherwise than pleasantly warm; the wooden couches, arranged around the room and covered with soft Turkish sheets, afforded most agreeable reclining and lounging places, and upon these we stretched ourselves at ease while the perspiration burst forth from its seven millions of pores. I then went into a small closet, wherein the temperature was ten degrees higher, the sensible heat being very much increased above that point by the introduction of vapour: and from the hot closet I stepped into the lavatorium, and, after luncheon with soap, was greeted with a douche of alternate hot and cold water for the space of some minutes. The sensation of this alternate douche is beyond everything delicious.

Mr. Rolland, like Mr. Urquhart, is an Eastern traveller; his *frigidarium* is a divan furnished with reclining couches of the most approved oriental character; door and windows were open, to gain as strong a current of air as possible; and here, in the most graceful, because the most natural attitudes of quiescent repose, we sip our sherbet and cool our glowing limbs. Struggler in the sun and dust of hot July, how you envy our enjoyment! Toiler in the mud, the slush, the biting winds and blinding sleet of the wintry world without, what would you not give to change places with us!

But quitting the construction and appliances of the *therma*, the mechanical means, let us inquire, firstly: What are its physiological properties? secondly, what are its medical properties? With its psychological and moral properties we have at present nothing to do; albeit it would not call for much argument to prove that both are elevated and exalted. All agree that the brain never works more pleasantly than in the *therma*;

the mind seems cleared of its physical impurities; the godhood of our nature is elicited by the body's purity.

Physiologically we find that a grateful feeling of warmth pervades the entire skin, whatever its previous condition of temperature, of dryness, or moisture; secondly, the skin appears to soften, to become ductile and pliant; thirdly, minute drops of water, gradually becoming larger, stand upon the skin like crystal beads. "I shall tell my friends," said a gentleman to a 'companion of the bath,' a doctor of divinity who was noting this phenomenon, "that I beheld a clergyman of the Church of England, while sitting in the *therma*, piously counting his beads." And soon, these limpid beads, swollen beyond their bound, trickle downwards to the earth. The skin, likewise, loses its accustomed paleness, and becomes more or less reddened; it is clear that the blood is sent more actively to the surface and in larger quantities. The skin of the face and hands is more suffused than the rest of the body and the conjunctivæ are also reddened.

It is evident that the high temperature of the atmosphere of the *therma* is a stimulant of the circulation, of the heart's action in fact; the pulse becomes frequent, and after a time the heart also is felt to be quickened; sometimes a sense of oppression, of giddiness, of faintness, and sometimes, though rarely, of sickness occurs, and the novice is constrained to seek the fresh air of the *frigidarium*. These effects of the *therma* are perfectly natural, perfectly physiological, are exactly what would be predicted by any physiologist to whom the problem were submitted: What would be the effect upon the animal system of an excessively heated temperature? His ready answer would be; the pulse will be accelerated, the heart's action rapid, and according to the degree of temperature or the constitutional susceptibility of the individual, there will be more or less distress of the nervous system. But the same answer applies to a heated state of the body, however induced, whether by extreme heat, as in the Indian camp, during the

late campaign, where the thermometer in the tents often reached 140° degrees of Fahrenheit; whether in a sultry day in our own climate; whether in hot rooms; under hot bed-clothes; from active exercise; or from the use of diaphoretic medicines.

These remarks are intended to show that the *therma* is not to be trifled with; it is a medicine, a great and a powerful medicine; and can only be applied with safety and advantage by those whose vocation it is to study the physiology of man and to treat his diseases. In the judicious hands of the essentially practical medical man of Britain I look to see *thermo-therapies* occupy an useful and a dignified place; and I trust that in a short time, in every small village and hamlet in England, wherever a medical man is found, there also will be found a British *therma*. The medical man will be too happy to make himself the subject of his first experiments, to apprentice himself to an art wherein all is enjoyment; to learn by his own impressions how far he may push the remedy in the treatment of his patient, and how often he may apply it. In his own person he will reap a rich reward; after the cares and anxieties of the day, his *therma* will give him rest and renewed life; his moral atmosphere will be brightened, his spirits revived, his power and usefulness enhanced.

It is one of the first, as it is an hourly matter of duty to the medical man, to reduce to practice the simple problem:—*Given a powerful remedy which may be employed in excess, how shall it be regulated?* It matters not whether the remedy be an aperient or a saline medicine, brandy, tobacco, laudanum, diet, or hot air. It is the business of the medical man to effect this regulation, and he is equal to the task. If the calidarium be too hot, cool it; if the patient be too susceptible, let him retire to the tepidarium; if he cannot support so high a temperature for one hour, let him abide in it for only half or a quarter of the time. I cannot conceive any difficulty on this head, and I cannot realise to my mind any constitution or age repugnant

to the remedy if properly and judiciously applied. I am not to be told that because the remedy stimulates the heart, it is not to be used. Every remedy that produces perspiration stimulates the heart, and it is one of the virtues of the hot air that it does stimulate the heart. Nor am I prepared to admit that in cases of disease of the heart the *therma* would be inapplicable. I believe just the contrary, that many diseases of the heart may be cured by a judicious use of the *therma*; and in the very worst cases it would prove to be the best remedy that could be employed.

The natural remedy for accelerated action of the heart, particularly when excessive, is the open air; a few chestfuls of air calms the heart's action and all uneasiness passes away; but to prevent the possibility of this inconvenience, the thermal chamber should be sufficiently ventilated. There should be an abundance of oxygen present in the atmosphere and a constant current of fresh unrespired air should be secured. In this respect a large and lofty calidarium has an advantage over a smaller one; but the small calidarium may be rendered equally fresh, by making several perforations through the wall and adapting the means of opening or closing them according to circumstances.

The essence of the quality of a high temperature of air is its dryness. While the human body can support a temperature of 90° and 400° of Fahrenheit in dry air, hot vapour is scalding at 130° and water boils at 212°. A gentleman whom I had frequently the pleasure of meeting at Mr. Witt's, wrote to his friend, in corroboration of the account which had been given him of the heat of the *therma*:—"I have been at Mr. Witt's bath; all that he told us is true. I cooked a mutton chop on my knee! and in eating it afterwards, the only inconvenience that I experienced, was in the matter of the bread; it became toast before I could get it to my mouth!" A dash of water thrown into the thermal chamber is instantly dissipated in

subject that here presents, and continue it in our next number.

vapour, but the temperature although actually reduced becomes sensibly hotter.

The expression "dry air" must necessarily be held to be relative; the air cannot be perfectly dry in an atmosphere traversed with a continuous current of air from without. Each time that the door of the thermal chamber is opened, a rush inwards of cold and moist air takes place; and the body of the entering man gives off its moisture so rapidly, that in a short time, if there be several inmates, the moisture of the air must be considerable. It has been suggested that the highly heated air inhaled into the lungs must prove an irritant to those organs. I have seen no such effect, and can hardly believe it possible; the lungs and fauces are so abundantly supplied with moisture that the air must lose all its dryness before it can reach the bronchial tubes, and I should imagine, even the glottis. But I must confess to have had no experience in the application of the *thermae* to susceptible or diseased lungs. If I might predicate its influence, I should declare in favour of its special adaptation to diseased states of those organs, on account of its powerful derivative action on the skin. If consumption is to be cured, the *thermae* is the remedy from which I should anticipate the best chance of success.

But supposing that an instance does occur in which dry air properly ventilated, having a temperature of 130° and upwards does produce irritation of the lungs; how easy to introduce a watering pot and dash a shower through the air. Surely no man could be so unreasonable as to suggest the abandonment of an useful and powerful remedy because in one case, or in one class of diseases, it was inapplicable. My own experience however points to the heart and increased activity of circulation as the real origin of any inconveniences that may be felt in the *thermae*; that this increase of circulation may act secondarily upon the lungs as well as upon the brain and nervous system, if allowed to continue, is of course perfectly possible.

But these are matters of detail; not of principle; if the prin-

subject that here presents, and continue it in our next number.

ciple be good, be worthy of adoption, experience will soon teach us to adjust it to circumstances, to regulate its application. It is for this we are philosophers of medicine; and in the present instance we have to determine the plus or the minus of temperature; the plus or the minus of ventilation; the minus or the plus of watery vapour. If we require high temperatures to act upon the blood of the cutaneous circulation, to seek out and eliminate hidden and deep-seated morbid changes, it is clear that we must have a minimum of moisture in the atmosphere.

I must again advert to the modifying influences which regulate the temperature. On entering the thermal chamber, the skin feels cold to the touch, it gradually becomes warm, but its warmth never reaches a high altitude; it is moderated by the evaporation from the surface and kept at a genial heat. On the first few occasions the perspiration does not so readily obey the call as it does subsequently; the skin requires practice to bring it into a perfectly respondent state, to cast off the torpor of a life-time and to perform its function healthily. Hence the feelings of uneasiness which occasionally oppress the novice on his first visits to the *thermae* gradually diminish and at last finally cease. But when they do cease he has the satisfaction of knowing that his whole organisation has become strengthened, that the weak heart has become a strong heart, and that his active vitality is augmented.

The first physiological effect of the *thermae* is, therefore, to perfect the perspiratory or eliminant function of the skin; to give us in fact an organic skin instead of the mere, threadbare, dirty, unwholesome, and almost useless garment of the body that goes by that name. The second physiological effect is to make the skin more apt for the performance of a highly important function, the imbibition of oxygen, a function that renders the skin a breathing organ. The third physiological effect of the *thermae* is to regulate the nervous capabilities of the skin; to enable it to feel truly and not mendaciously; to distinguish

between real and unreal sensation. A fourth physiological effect of the thermæ is to promote those changes in the structure of the skin which result in its perfection as a healthy organ.

It is common to associate the idea of profuse perspiration with weakness, and to imagine that the effect of abundant perspiration must be the lowering of the system. This idea probably takes its origin in the observation of the exhausting sweatings of fever, of consumption, or debility from whatever cause induced; but it has no abiding place among the true phenomena of the thermæ. The perspiration of the thermæ is a tonic emunctory process of the skin, acting under and supported and kept up by the stimulus of heat. The body feels lighter after these sweatings, as though it had lost something which oppressed it; which is the fact. It represents those other processes of the animal economy, under the influence of which, effete and often irritant matter is conveyed out of the system. Mr. Urquhart, Mr. Holland, and Mr. Witt, pass frequently many consecutive hours in the thermæ perspiring the greater part of the time and renewing the lost moisture of their bodies by the imbibition of copious draughts of water.

In reference to the second physiological effect, I apprehend that there can be no doubt that, in its healthy condition and exposed to the atmosphere, the law of endosmosis which rules over the destinies of the whole of nature, acts upon the human skin as well as upon all other created things, both organic and inorganic. But while I am convinced of the imbibition of oxygen by the skin in a state of health, I am also aware that that action must be immeasurably weakened in the state in which we commonly find it, partially atrophied, excluded from the light and air; and prostrated in tone and power by hot and relaxing coverings. In cutaneous diseases the oxygen of the atmosphere plays a mischievous and vexatious part, and if it be susceptible of absorption in disease it must also be capable of traversing the cutaneous tissues in the state

of health. Endosmosis operates its results on the human body by a combined electrical and vital agency, and a healthy electrical condition of the skin is amongst its most important properties.

In its function of a breathing organ and a transmitter of oxygen, the blood is the principal agent engaged, and the degree of absorption of oxygen will be determined by the freedom and abundance of circulation through the capillaries of the skin. Now, one of the first effects of a high thermal temperature is to augment the circulation of arterial blood through the skin, to carry the arterial stream into capillaries that have long been inactive, and to bring the circulating blood nearer to the periphery and nearer to the oxygenising element. Therefore the use of the thermæ must tend directly to the oxygenisation of the blood and to the perfection of those nutritive and vital processes that are due to the appropriation of oxygen. The lungs, which are the great oxydisers of the blood are in structure very little different from the skin, the differences between them being more those of position than organisation; the mucous membrane of the lungs is an inverted skin, while the skin may be regarded as an everted lung.

The third physiological effect of a thermal temperature, namely, the restoration of the skin to its normal sensibility, is illustrated remarkably in the example of the little boy brought up in the state of nudity and in the constant use of the thermæ: *his skin was all face*. In ourselves, from the habitual use of clothing from our earliest infancy to one part of the body and its absence from another, we are enabled to contrast the power of resistance and endurance of the face with the opposite qualities of the skin of the rest of the body. We are accustomed to regard the skin of the covered parts of the body as more sensitive than the skin of the face; but if we look closely at the matter we shall find that the sensitiveness only applies to its weakness. It is more sensitive to pain and suffering; but less sensitive to ordinary healthy and appreciative sensations; while the skin

of the face feels more truly and is less easily excited by painful impressions. When I was invited by Mr. Rolland to enter his hot closet, to pass from an atmosphere of dry air of a temperature of 160°, into one of moist air at 170°, I stepped back for an instant with a feeling of scalding; but it was not the weak and sensitive skin of my body that detected the extreme heat, but the more seasoned and appreciative skin of the face and hands. The experiment, simple as it was, convinced me at once, that from constant covering with clothing, the skin becomes weakened as to its nervous influence and nervous sensibility, possesses a low nervous tone and exhibits a first step towards paralysis of power.

The fourth physiological effect of the thermæ is to strengthen the skin as an organ, independently of improving its function. That the function of an organ must be improved by the perfection of the structure of the organ is obvious, but I now wish to draw attention to an improvement in tone of the organ itself. It is well known that some persons bruise more easily than others; and that the skin is sometimes apt to be bruised by a very trivial cause, the extent and depth of colour of a bruise being no test of the severity of the injury, but simply indicating the softness and weakness of the skin of the individual. We occasionally meet with a deep black bruise as the result of mere pressure without any blow, and an ecchymosed stain from a pinch or grasp is among the commonest phenomena of civilised, or perhaps I may be permitted to say, of *well-dressed* life. Now, ecchymosed stains and the discolorations of bruises disappear very quickly by the use of the thermæ, and the skin acquires so much and so healthy a firmness that they soon cease to be produced by trivial causes. In the thermæ the skin acquires colour, freshness, firmness, and elasticity; it loses the muddy and faded hues of ill health; and it loses equally the parched and arid dryness and wrinkled aspect of infirmity and age.

subject that here presents, and continue it in our next number.

We have thus presented to us as the effects of a thermal temperature applied to the skin:—

1. An improvement of organic structure.
2. An improvement of secreting function.
3. An improvement in circulation and respiratory power.
4. An improvement of innervation and sensation.

Now these are extraordinary and unexpected physiological results; but results that admit of no doubt or question, and they serve to clear the way to the consideration of a still more important series of phenomena, namely, such as belong to the treatment and removal of disease.

Looking at the skin in relation to the other organs of the animal economy, we recognise it as one of the great excretories or scavengers of the body; and we may fairly place it by the side of those other great excretory organs, the liver, and the kidneys, and probably, the lungs. But taking it in conjunction with the liver and kidneys, and regarding it as one of the three great scavengers of the animal system, we have the following considerations brought before us for reflection. In the climate of Britain, the skin, in many persons, is not brought into exercise for six months of the year; in many, not for nine months; in many, as in women and persons of sedentary habits, scarcely once in twelve months.

Now, this being the case, an increased amount of duty is thrown on the liver and kidneys. These latter organs are called upon to perform their own office as well as that of the skin; and for a number of years they succeed more or less well. But after a time, say about the mid period of life, the over-worked organs begin to show signs of failure; we hear complaints of the liver or of the kidneys; the liver becomes enlarged; fat accumulates in the abdominal region; hæmorrhoids are developed with congestion of the pelvic organs, and symptoms of plethora abdominalis are established. After the abdominal excretory organs, come the heart, the lungs, the brain, and the organs of sense, sight and hearing. So that, originating from a mere

deficiency of function of one organ in the first instance, a whole series of disorders are engendered, which involve in succession the most important organs of the body.

It is an axiom in medicine that the first step towards the cure of a disease, is the removal of its cause; and if this doctrine be applied in the case that I have just stated, we have only to restore the skin to its healthy tone and function, to bring back to their allegiance the organs whose function has become disordered by its impairment. The thermal treatment, by unlocking the pores of the skin, gives to the liver and kidneys the opportunity of recovering their tone and resuming their healthy function; and the whole of the excretories, acting in harmony, gradually lead the way to the restoration of the entire system to health.

But suppose the mischief to have gone further; and that the disorder of function of the excretory organs has left behind in the blood a considerable quantity of irritant matter, the product of indigestion and malassimilation. These morbid materials are moved hither and thither with the tide of the circulation, they communicate a sadness to the blood and with the blood to the entire organism; they discolour the skin; they give pains and aches to the nerves; heaviness and distemper to the brain; and they rack the joints with gout and rheumatism. Here is a catalogue of diseases all taking their rise in malassimilation, all dependent on the presence of impurity in the blood. How, then, are they to be removed? We resort to the excretories,—the liver, the kidneys, the skin. For the liver and kidneys we prescribe the accustomed remedies; but for the skin directly and the liver and kidneys indirectly, what remedy is there so simple and yet so powerful as the *therma*?

It must not be supposed that I advocate the *therma* as capable of superseding other remedies. My present aim is directed to the illustration of the uses of the *therma*, and therefore I recur to it frequently. I would employ the *therma*, not always as a primary means, but often as an adjuvant, more than re-

spectable both in character and power. An increased action of the skin empties from the system a large quantity of water, with the water there pass away saline and effete substances in a state of solution, a fresh addition of water drunk during the perspiratory process also comes away rapidly, until the blood may be said to be washed clean of every impurity; poisons that have crept unbidden into the blood are drained out, as also are the broken and dissolved particles of organic transformations of a morbid type. This operation renders the absorbing powers of the system more than usually active; accumulations of fat are removed; nutritive matters are taken up, and medicines find their way more quickly and more abundantly into the blood, and therefore act with greater energy. Herein we have the explanation of an apparent paradox. We reduce fat by the *therma*, because fat is an excess, a redundancy, and a result of defective excretory power. We fatten and bring into condition those that are lean by the same means, because we render nutrition more active and facilitate the absorption of nutrient material from the digestive system.

During my short experience of the *therma*, I have seen the infant and the aged subjected to its influence, the strong and the infirm, the healthy and the diseased. I have been struck by observing the ease with which the young, and the old especially, glide into its use. If any difficulty arise, it occurs more constantly among the middle-aged than at either extreme of life; and more frequently among women than among men. There are reasons for these peculiarities which these accustomed to the *therma* will immediately recognise.

Among my fellow subjects of the *therma*, I have seen numerous examples of relief from painful affections dependent on morbid composition of the blood. Several were cured of gout, of rheumatism, of neuralgia. A clergyman and Doctor of Divinity who resorted to the *therma* to reduce redundancy of adipose accumulation suffered habitually during the winter season from catarrh, bronchitis, and neuralgia, and was often

laid up for weeks together with these affections. Since he has adopted the use of the thermæ, which he enjoys excessively, he has diminished in bulk; he has lost all proneness to catarrh and bronchitis, and no longer experiences the pangs of neuralgia. Recently I was much interested in seeing a case of eczema of the face treated throughout by the thermal process alone; the patient lived in the thermæ for several days, he used very high temperatures and he succeeded completely in curing his disease. It was curious, he remarked, to observe the patches of eruption; they yielded no perspiration and looked like so many parched up islets in the midst of the surrounding copiously-perspiring skin. At about the same time, a medical friend consulted me for prurigo senilis. "You know Mr. Witt; go and ask him to admit you to his thermæ," was my counsel. The next time I paid a visit to my friend's thermæ, there was my elderly patient, luxuriating in the fulness of enjoyment. That day he left his prurigo senilis behind him in the calidarium, and I believe has had no reminder of it since. He went back to his home on the coast, and now offers a seat in his own thermæ to his curious or suffering friends.

How often since my first acquaintance with the thermæ have I longed to prescribe it to those who have been suffering from some forms of cutaneous disease. How important it will prove in a large group of diseases which have their origin in defective vitality and defective nutrition of the skin; prurigo among these; acne and its allies of torpid function; chloasma and its associated discolorations. I have now under treatment two cases of the ancient leprosy, elephantiasis graecorum, that have been much benefited by the thermæ. Mr. Urquhart has met with a case of chronic psoriasis which was cured by the thermal treatment alone.

I have hinted at the curative effects of very high temperatures; and both Mr. Urquhart and Mr. Rolland have mentioned to me important results from this process. It occurred to Mr. Urquhart's mind that as fever-heat was represented by 112°, he

should be able, could he create a temperature higher than fever-heat, to supersede the stage of fever at once. Thus, taking the beginning of the cold stage, which nature seemed to struggle painfully to overcome; he was enabled by a high thermal temperature to cut it short at once and to pass over it and the hot stage to that which nature seemed desirous of reaching, namely, the sweating stage. He believes that at a certain temperature he can put a stop to the fermentative process of zymotic diseases; and, at a higher temperature still, destroy animal poisons. He suggests, moreover, a curious and important inquiry, namely, the influence on the chemical composition of the blood circulating through the capillary plexuses of the skin, of hot air having a temperature of 160° of Fahrenheit. Not so much its influence on the healthy blood as on the blood of persons in a state of disease.

A member of Mr. Urquhart's family, a child, was accidentally burnt; the burn was distressingly painful; various applications had been made without relief; the child was accustomed to the thermæ and desired to go into it; it was carried into the thermal chamber and the pain of the burn was immediately assuaged. Mr. Urquhart, himself, received a severe scald, he betook himself to the thermæ; there, in a heated atmosphere, he directed upon the injured part a blast of air hotter than the temperature of the apartment; the pain became lessened, the process of effusion which results in the production of a blister was arrested; to use a popular expression "the heat had drawn out the heat."

In an earlier page I have said that the active function of the skin, by removing all excess of fluids from the blood, by inciting in the blood a desire for fresh fluids, becomes an important agent of nutrition. Let us suppose that the fluids which are removed by the process of perspiration, contain in solution the old and worn out material of the body; while the fluids with which we supply their place are highly nutritious; it is clear that we shall nourish the blood, and through the blood we shall nourish

the body. I am here supposing a simple physiological process, which although unseen, is in constant operation in the animal organism. The necessity for nutrition is proportioned to the loss of material; the waste creates the necessity for supply.

In the retort house of our gas factories, where perspiration is excessive and is continued through the entire day, the men are allowed a certain quantity of oatmeal which is made into thin gruel, and drank largely as often as the waste of fluids occasions thirst. The men are the gainers by the exchange, they give out waste water and used up solids, and they receive in exchange fresh water and nutritious solids. It is needless to say that by this process they get into high condition both of structure and health.

If we have a weakly and ill-nourished child, or a thin and emaciated adult, in whom there is no organic disease, but simply a powerless condition of the nutritive functions, may we not hope by means of the *therma* to bring about a more active and healthy nutrition and thereby change that which is weak into strength; that which was skin and bone, into flesh and blood and their usual concomitants.

The same argument applies to disease in all its protean forms; we must apply ourselves to the hope of improving nutrition, of draining away that which is bad, and supplying its place with that which is good. It is here that our pharmacopoeia will afford us important auxiliaries, and those auxiliaries will be placed on the best footing for developing their most useful properties. Viewing the operation of the *therma* in this way, we are imperceptibly led to the conclusion that every morbid process, of whatever kind, must be relieved by its use, and we ask ourselves, not, what disease will be benefited by the *therma*? but, what disease can resist its power?

Looking at the *therma* in a social and political point of view, we find that it is wonderfully adapted for the preservation in health of large bodies of men, combining in itself the respective advantages of air, exercise, and ablution. The Romans were

so impressed with its importance, that they carried with them the genius of their *therma* wherever they migrated, and they put it in operation wherever they were located even for a short period of time. Thus we discover vestiges of the *therma* in all their temporary encampments as well as in their cities; and by its means they kept themselves in health even when hemmed in and surrounded by warlike enemies.

Adopted by our own army, there cannot be a doubt that it would very considerably reduce the rate of sickness and death and add to the efficiency of the men. It is applicable also in all cases where numbers of persons are collected together, as in barracks, prisons, poorhouses, factories, and schools; in large business establishments where a considerable number of young men or young women are assembled; or in places of temporary meeting as the House of Commons and clubs. It must always be borne in mind that the *therma* not only offers advantages as respects physical health, but it also conduces to moral vigour. Those who have recourse to it would be more likely than others to shun vicious excesses of all kinds, particularly of stimulants, and be disposed to respond in their hearts and lives to the beautiful sentiment of the poet Thomson:—

"Even from the body's purity, the mind
Receives a secret sympathetic aid."

But the usefulness of the *therma* has even a wider sphere; the Londoner, or the inhabitant of a large city, would live as healthily immured within his city walls as the rustic amidst the fields and meadows of the country. His *therma* would be to him in the place of a country house, of a horse, it would give him air, exercise, freshness, health, and life.

I might add very materially to the long list of conditions to which the *therma* might be applied with advantage, but I limit myself to a single one more; it is that of extensive works, employing a large number of men, either in operations in themselves unsalutary, or in unhealthy localities. The importance of preserving a body of working men in a state of health,

and in the best condition for the performance of their duties, must strike every one, and is an object worthy a moderate sacrifice on the part of proprietors or owners. There are many localities in which miasmatic fevers abound, and constantly incapacitate the working force of large operative establishments. I believe that a few pounds expended in therms would correct this evil; would put the men into condition to resist the miasmatic influence, and to eject the poisonous elements from the blood when they had already found admission into the organism.

In conclusion, I feel that I cannot do better than leave the important questions raised by this communication in the hands of the members of the British Medical Association, from whom, I feel assured, they will receive all the attention and practical consideration which they deserve.

subject that here presents, and continue it in our next number.

without wincing. This happened on one occasion to myself. My friend received me with all the honours—he received me as he would a phoenix or a salamander: “Heap high the coals, fellow,” cried he to his stoker; “for a passed Grand Master of the Bath cometh to stow with me to day.” I was expected to say, when I entered the bath:—“Behold, my brother, this is good!” and I did say so. But what was my brother’s reply? “Dost thou find it warm enough, for it is barely 108°.” To which I could do no other than answer:—“Passably warm, brother, it may be better another day.” But alack! in good sooth, I was not sorry to escape with an unblistered hide; but I would not have shown my suffering, and would not have lost my reputation as an experienced bather for the world. “I kiss your feet, brother; I perspire well; may you never perspire less.”

Of the practice of the Romans, as regards temperature, there is, I believe, no record; but viewing the therms as it at present exists in the east, after its migration from the Tiber to the Bosphorus, we should be led to infer that a low temperature—that is, one not exceeding 120° or 130°—is that which was preferred; and I am quite of opinion, that for most purposes, at the present time, that temperature would be the most desirable. In the case of invalids, it might be still further reduced—say to 110°, 115°, or even 105°. And for persons in health, while they are novitiates or incipient candidates for the honours of the bath, 120° would be a proper heat. After being accustomed to that heat for awhile, they might take a higher and even a higher degree, until they acquired, if they chose, the dignity of real salamanders.

The great purpose to be arrived at, as far as temperature is concerned, is to obtain one which shall be agreeable to the sensations; which shall slowly expand the pores of the skin; which shall produce perspiration gently and slowly and without effort; so that it may be continued for an indefinite length of time. The temperature of 135° or 140° is very agreeable to the sensations; but in me it excites a perspiration which is too profuse; the energy of perspiration occasions a feeling of exhaustion; and the exhaustion is succeeded by quickened action of the heart, throbbing pulse, a sensation of faintness, of oppression, which makes it necessary that I should quit the caldarium for a few minutes. It is true, that these unpleasant

sensations quickly pass off; but they are again renewed after a time, as often as I return to the caldarium. It is easy to see why these disagreeable sensations occur; it is easy to understand that the blood, suddenly robbed of a considerable proportion of its watery fluid, must for the moment occasion a physiological change in the whole economy. But we must do more than explain them to our own mental satisfaction, we must stop them; and the way to stop them is, I believe, to use lower temperatures.

Again, high temperatures clearly frustrate the purpose of the bath; by producing excessive perspiration, they shorten the period passed in the bath; they bring it to a too sudden and too rapid conclusion. Profuse perspiration is an excess of function, and excess of function cannot exist without fatigue and consequent injury to the organ so excited; together with more or less disturbance of the whole economy. I have had many complaints of the bath made to me, which have been clearly referable to the use of high temperatures at the beginning of treatment; and the abuse is so plain, that I wonder, having once occurred, it could again be repeated. These were examples of direct inconvenience resulting from too high a temperature. But in another case, the function of the liver was considerably disturbed; and many days elapsed before the digestive organs were restored to their normal condition.

These remarks all point to the importance of a tepidarium when a tepidarium can be obtained; the time passed in the tepidarium may be considerable, the body undergoing a gradual process of warming, of softening, of perspiration; and at the end of this process, being transferred for a few minutes only to the caldarium.

C.—TIME OF TAKING THE BATH.

The best time for taking the Roman bath, and, indeed, every form of bath, is that which is least likely to interfere with the process of digestion; for example, *before a meal*. But at this point it is necessary to draw a line of distinction between the Roman bath and all other kinds of bath: the Roman bath abstracts from the system a proportion of its solid constituents, more or less considerable, while it makes only a gasiform

return in the form of oxygen. All other baths abstract little or nothing; and therefore, in this particular, there is a wide and important difference between them. It is as needful to take the sea bath before a meal as it is the Roman bath; but the sea bath may be taken before breakfast, which I should in no wise advocate in the case of the Roman bath. I do not mean, that to those who can bear it and who approve of it, the Roman bath might not be suitable on first rising in the morning; but the generality of mankind will find the most advantageous time for taking it from three or four, to five or six hours after a meal. At that time there will be that in the economy which nature can spare, and often with benefit to the health, the waste of the digestive process, the detritus of nutrition; whereas, before breakfast, there is or ought to be scant matter for giving off from the blood by way of perspiration. Invalids may take the Roman bath three hours after breakfast; or three hours after the midday meal or lunch; while the man of occupation may advantageously devote to its rites the hour and-a-half or two hours which immediately precede dinner; and the more engaged may probably, with equal advantage, take it in the evening, after the dust and toil of the day are at an end, and shortly before bedtime.

D.—FREQUENCY OF TAKING THE BATH.

We are continually asked; How frequently may we take the bath? We answer the question by reminding the interrogator, that the bath is employed for various purposes; and according to the purpose to be attained, must the bath be taken more or less frequently. Where maintenance of existing health is the object, once or twice a week may be sufficient. I can conceive the bath to be made a part of the process, known as "dressing for dinner"; and then it may be taken as often as we dine. Medically, its frequency of repetition must be left to the medical man; and in every case the amount of effect produced must regulate its repetition. "Little and often," I would suggest as a maxim applicable to the bath as to some others of the enjoyments of life; and much to be preferred to the opposite position, "seldom and much."

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E.—SHAMPOOING.

Shampooing is friction and pressure and stretching. We shampoo our hands and face in the act of washing them; and we shampoo our body and limbs while basking in the warmth and moisture of the tepidarium and caldarium. The friction of the surface with soap and with the lyf or the khesah, is also shampooing. If a companion of the bath, or a bath attendant, give us a rub down, with a pull upon our limbs, and a squeeze, and a pinch of our flesh, this also is shampooing. Carry this simple process a little further, and we may magnify it to an art; but it is still no more than an artistic application of pressing and squeezing, of stretching and friction. Suppose we have a rheumatic joint or a rheumatic limb; we shampoo with more care; we rub more diligently; we endeavour to straighten the bent limb; we knead the thickened muscle; we press the oedematous skin. This is shampooing; and shampooing may be dexterous or it may be clumsy; it may be pleasant or it may be painful; and this constitutes the difference between the real shampooer and the pretender. And this view of the nature of shampooing may determine whether the operation is to be considered necessary or otherwise. To the healthy man it may be very pleasant to have the skin gently rubbed, with a circular movement, to have the muscles squeezed from end to end, to have the soft pressure of the fingers carried lightly along the course of the vessels and the nerves, but it is not necessary to his well-being; while to the invalid or to the sufferer it may be an important means of restoration to health. All I wish to inculcate under this head is, that there is no secret process concealed under the extraordinary term shampoo; and that if it be practised naturally and earnestly, and with moderate alacrity, it may be as well accomplished by an ordinary attendant, as when performed by the most distinguished chaste-lan and posture master.

subject that here presents, and continue it in our next number.

F.—ROLLS OF CUTICLE.

It is not customary, neither is it pleasant, to hear men boasting of their own dirt; and yet to see how travellers will sometimes dilate upon the dirty mess of rolled-up filth which the shampooer displays to their astonished eyes in the bath, one would think that their chief virtue was that of a dung-hill. But these travellers, as they say is not uncommon with travellers, commit a grave physiological error. There are no rolls of exfoliated cuticle to be rubbed up on the skin of the bather; it is only on the hide of the non-bather that the accumulation takes place; and it is certainly remarkable in how short a time—and in some skins more than others—a stratum crops forth beyond the range of organic vitality, and admits of being softened and rubbed up into the fat bloated maggots which have been so often described. The accumulation is naturally greatest where the cuticle is thick, and especially on the feet. Travellers, it is true, may not have the opportunity of a good soak for many weeks, and then a very microscopic film of hourly formation has to be magnified by many days; indeed, our travellers in general do not speak of the bath—the Turkish bath this time—as an usual practice, but as an occasional freak; and then, heaven knows, the cuticle may be thick indeed.

It has been thought that the Roman *strigil* was intended for the removal of the softened cuticle in the bath; and so it was, but not as is usually supposed. If the Romans took the bath frequently, as they doubtless did, there could be no such accumulation of cuticle on their skin, as the *strigil* was adapted to remove. But the *strigil* would be very useful in scraping the thickened cuticle of the feet; and it would be particularly suitable for removing the stratum of grease and dust with which the competitors in the public games were wont to cover themselves; and also for the removal of the dust and dirt which, from the very nature of their games, would settle and accumulate on a skin anointed with oil, in order to secure its more perfect flexibility.

G.—VENTILATION OF THE SKIN.

I have assumed for the skin the rank of a respiratory, of a breathing organ; and have endeavoured to show that the cooling and drying operations of the frigidarium are an important part of the bath, as their performance is associated with the exposure of the skin to the atmosphere. Mr. Witt urges the prolongation of this period of the bath to as lengthened a degree as possible; and he delights to tell his auditors, dispersed around him like Roman senators in the forum, and with no other garment than a cotton scarf, variously and negligently twined around their bodies—that this was the period when Pliny betook himself to his garden, and in the full light of the sun, and refreshed by the sweet breath of the unfettered winds of heaven, walked in pleasant contemplation on a terrace carpeted with a beautiful little moss of velvet softness. We read that Sir Walter Scott indulged in this kind of atmospheric bath; we recognise in it the special charm and much of the value of the river bath and the sea-shore bath; and we are not startled when we hear from the mouth of an advocate of the Roman bath, Dr. John Le Gay Brereton, in a lecture delivered in Sheffield in 1858, that—"After leaving the hot room in our Bradford bath, bathers were in the habit, last winter, of jumping into a bed of snow which had been collected for the purpose. I have myself spent the whole night in the woods at Blarney, without any clothing save the bath sheet, after coming out of Dr. Barter's bath at that place. This was after a ball, when, with several other gentlemen, we had retreated to the bath for the sake of refreshment from fatigue. So delightful was the cool air, that when far away from any dwelling, we threw aside even our sheets, to enjoy the morning breeze at day-break. You need not then fear exposure to the air, after the bath; it is not so much for the sake of cooling that this process is necessary, as to keep up the action of the bath by exposing the skin to air; it is to compel the skin to breathe."

subject that here presents, and continue it in our next number.

H.—MUSCULAR RELAXATION IN THE BATH.

How many are the instances of spasm which come under the observation of medical men. Spasm of the stomach, of the bowels, of the ducts of the liver and kidneys, of the muscles. How needless to remind my brethren of their infinite variety; of their fearful agony; of our poverty of means for their relief. But here, again, the Roman bath cries out emphatically: "Behold, we bring succour!" Without going more gravely into the matter, let us smile over the paragraph which I have just cut out of the *Cork Examiner*. As physiologists, we recognise the point and the value of the illustration; as philosophers, we appreciate the lesson, and become the wiser for its gift. "One day last week, a boy, employed in Messrs. Simpson and Baker's biscuit factory, was ascending to a loft, when one of the workmen below called him; and, in turning his head quickly to answer the call, he got a crick in the neck of such severity, that the head lay almost flat on the shoulder. The poor boy was going home in great agony, when he was met by Mr. Hegarty, the proprietor of the City View Turkish Bath, in the neighbourhood of Blarney, who, on learning what was the matter with him, sent him to take a bath. When the boy was inside about a quarter of an hour, and perspiration had set in, he was placed under a tepid shower-bath, and as soon as the water commenced to fall on him, the neck began to straighten, and in a short time the head had recovered its natural position, to the great delight of the poor lad, and rather to the astonishment of the other parties in the bath, who did not expect so speedy a cure. The boy was still suffering from a pain in the neck; but a second bath the next morning removed that, and he returned to his work immediately."

What remedy so potent for that dislocation and spasm of the fibres of the sterno-mastoid as the relaxing warmth of the caldarium. How many who read this will call to mind hundreds of cases in which its efforts to the untaught mind would be equally amazing. We may dare to balance its merits against those of chloroform. We may discover in it a valuable aid in the reduction of dislocations; in the relief of strangulated hernia; or in soothing the wasted pangs of parturition.

L.—TRAINING CAPABILITIES OF THE BATH.

In employing the bath as a means of training, we must have clearly before us the powers of the bath, on the one hand, and the precise objects which we wish to attain, on the other. The bath will abstract the old material from the system, and will thereby render the system more ready to take up and more capable of appropriating new and strengthening nutritious matter which may be given to supply its place. In other words, it will do the sweating part of the process excellently, without fatigue, without wear and tear to the economy. But this, although a necessary part of the process of training, is only a part of the process. Other means are required to direct the new nutritive matter to the organs which especially require it, the organs of locomotion, and the principal of these means is exercise. The racehorse must still have his muscles trained by exercise; the prize-fighter, prize-runner, or prize-rover, must still pursue a systematic course of exercise; but the exercise in both instances is only that which is required to educate the muscles, to give them power, precision, facility of action, and to strengthen the breathing function; the exercise for the abstraction of unnecessary matter, for the removal of fat, is no longer requisite; for that the bath will amply and sufficiently provide.

K.—ADAPTATION OF THE BATH TO THE PRESERVATION OF THE HEALTH OF THE HORSE.

My friend G., who has had much and the best kind of experience in the management of horses, tells me that for more than twenty-five years he has been in the habit of having his horses washed whenever they returned to the stable in a state of perspiration, and with the result that his stable was remarkable for the health and condition of the animals. His process was as follows:—the horses were thoroughly sponged over with warm water; then with tepid water; and, lastly, with cold; the water was then scraped out of their coats with a scraper (*strigillem*), and they were well wiped down with a leather. After this they were covered with a cotton sheet, and their legs

were bandaged with cotton rollers. In fifteen or twenty minutes the sheet was raised gradually, first at one corner, then at another, until it was completely removed; the uncovered portion being thoroughly wiped before the next was proceeded with, and the process being continued until the animal was completely dry. After this treatment, there was no fear of any subsequent *breaking out*, and however sharply the horses had been worked, frequently after a run of ten miles in half an hour, they were ready and willing for a double feed of oats.

How different this picture from that of the common condition of horses under similar circumstances; breaking out into a profuse and often a succession of profuse perspirations after being put into the stable, and unable to eat their corn from faintness and exhaustion. But how curious the parallel with the stages of the Roman bath: the exercise is the *sudatorium*; then the operations of the *lavatorium*; firstly, the warm affusion, then the cold douche and the *strigil*; and, lastly, the *frigidarium* and the sheet. Nay, the parallel permits of being pushed even one stage further. My friend W. says:—"I have no objection to see a friend in the bath, or invite him to dinner; but not both on the same day, for the bath makes him so hungry, that my cook threatens to give me warning."

L.—VENTILATION OF THE SKIN OF THE HORSE.

The importance of ventilating the skin is illustrated in the process of clipping and singeing, as applied to the horse. The thickening and lengthening of the coat of the horse in the autumn season is a change obviously adapted to prepare them for the coming severity of the winter; and however natural to the animal in his wild state, is ill suited to his condition as the useful and obedient servant of man. As autumn advances, and after a few cold days, the coat of the horse appears as if "broken up" into plots, and the individual hairs stand out roughly, or in technical language, the coat "*staves*". Accompanying this change in the appearance of the skin, the animal becomes weak and languid, loses his spirit, breaks out into sudden and abundant perspirations upon slight exercise, and shows himself unequal to his work. Now, the ready remedy

for this state of things is the removal of the excess of hair; and the exposure of the skin to the action of the atmosphere. If the coat be clipped close to the skin or singed, or better still, be shaven, the animal preserves his strength and vigour, and is equal to all the labour that may reasonably be imposed upon him. Of the three processes, shaving is the best, then clipping, and lastly singeing. As to the latter, it is not quite clear whether its inferior position in rank to the others is due to the less complete exposure of the skin to the action of the air, or to the sealing of the ends of the hair by the act of burning. It is not improbable that the cut ends of the hair in shaving and clipping may serve as breathing pores for the inhalation of air; an advantage to the oxygenisation of the circulation in the skin that is lost in the contraction and obliteration of the cells of the hair which ensues after singeing.

Another curious concomitant of clipping is the change in the colour of the coat, a change which seems to indicate that the colour of the hair produced in the winter time is different from that of the summer.

In the Press.

THE ROMAN BATH: its Nature and Uses; with especial reference to its powers of Preserving Health, and Preventing and Curing Disease. By ERASMUS WILSON, F.R.S.

T. RICHARDS, 17, GREAT QUEEN STREET.

subject that here presents, and continue it in our next number.

A
DISCOURSE
ON
HOSPITALS, PAST AND PRESENT,
DELIVERED AT THE
BRISTOL INSTITUTION
FOR THE
ADVANCEMENT OF SCIENCE, LITERATURE AND ART,
MARCH THE 17TH, 1862,
BY
SAMUEL MARTYN, M.D., M.R.C.P.,
Physician to the Bristol General Hospital.

" . . . Well disposed persons may run into great perplexities, and great mistakes too, by being over-solicitous in distinguishing what are the most proper occasions for their charity, or who the greatest objects of it. And therefore, as on the one hand we are obliged to take some care not to squander that which, one may say, belongs to the poor, as we shall do, unless we competently satisfy ourselves beforehand, that what we put to our account of charity will answer some good purpose; so, on the other side, when we are competently satisfied of this, in any particular instance before us, we ought by no means to neglect such present opportunity of doing good, under the notion of making further enquiries; for of these delays there will be no end."—BISHOP BUTLER.

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MDCCLXII.

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WORKS TO WHICH REFERENCE HAS BEEN MADE.

- Hist. de la Soc. Royal de Médecine, 1777.
 IBERTI; Obs. générales sur les Hôpitaux, 1788.
 WALKER; Hosp. of Scotland, 1847.
 FOSBROOKE; British monachism, 1802.
 VIRCHOW; Archiv. xviii, xix, xx.
 BECKMAN; Hist. of Inventions, 1814.
 STOW; Survey of London, Ed. of 1633.
 Hieron. Epistol. et Epitaph. PAUL.
 Anatomie of Abuses; Reprint of 1836.
 M.S. Cott. CLAUD. B. vi.
 BUTLER; Lives of the Saints.
 M.S.S. Harl.
 Lives of ye Primitive Fathers, 1640.
 PRINGLE, Sir J., on the Dis. of Armies, 1764.
 Hospitallers; Camden Society.
 Edin. Med. Journ., vols. 56, 57.
 London Med. Gaz., Oct., 1839.
 Med. Chir. Rev., April, 1860.
 BLACKWOOD'S Mag., vol. 1.
 Encyc. Brit., 8th Ed.
 Report of Army Commiss., 1858.
 Notes on Hospit., FLORENCE NIGHTINGALE, 1859.
 ROBERTSON; On the Defects, &c., 1856.
 Additional Suggestions, ib., 1858.
 PARKES; Report on Renkioi, 1857.
 ESSE; Die Krankenhäuser, 1857.
 Gazette Médicale, Janvier, 1862.
 OFFERT; Die Einrichtung v. Krankenhäusern, 1859.
 The Times, Feb., 1862.
 Liverpool Training School for Nurses, Prop. Plan.

A
 DISCOURSE ON HOSPITALS.

THE subjects to which I propose to draw your attention are these:—Hospitals, or Infirmaries, for the Sick, their origin in former ages, their development to the state of importance familiar to us at present, their usefulness at home and abroad, their defects remediable or inevitable, and their probable future.

During the last few years there has been a revived and rapidly growing interest felt in so-called philanthropic objects, a very generally diffused interest, something of popularity; so that we have lately seen this tendency taking the form of a system, and *Social Science* is already a household word. Within the walls of this Institution, whose chief object is avowedly the promotion of Literature, Science and Art, our subject will not, I think, be underrated. Taking its place with Science mental and physical, Science "Social" has gained votaries everywhere; its annual meetings have attained a well deserved celebrity, and

their importance is universally recognised. Even should many of its projects prove to have been but phantoms, or mere pursuits of fashion, this great fact will remain that there did arise in these days a belief stronger than before that while the noblest *study* of mankind is man, his noblest *activity* is the search for, and enunciation of, the laws under which men live together in this life, and the application of those laws to ameliorate human conditions. It is to be devoutly hoped that "Social Science" is not one falsely so called, and that neither the self-interest of its friends, nor the self-conceit of its detractors, will shake a foundation which is laid in truth itself.

Hospitals for the Sick occupy a very large section of the practical philanthropist's horizon; but the existence of these Institutions amongst us has become such a matter of course that many of us have almost ceased to enquire about them. In the United Kingdom there are no fewer than 253 Hospitals and Infirmaries, properly so called; and, as the number of sufferers capable of being accommodated therein, at any given point of time, is about 21,000, we see at once with what a gigantic national Institution we have to deal. From another point of view, calculating their cost, on an average which is as near the truth as may be, at £30 a year per bed, the annual revenue of these establishments cannot be less than £630,000. It is assuredly right

to ask ourselves whether all this is going on well? These are, in England, voluntary Institutions, and we who as a nation maintain this great charity are responsible for a due consideration of its working. Is our idea of a Hospital for the Sick clearly defined? Are the arrangements as good, is the economy as great, are the results as satisfactory as should be the case considering the outlay? These are questions which urge themselves on our willing or unwilling attention.

Very shortly the great metropolitan Hospital of St. Thomas is to be removed, and the amount of discussion thereby provoked is incredible. This was, as we shall presently see, one of the five original Royal Hospitals. Well endowed at first, its present fixed income has reached the sum of £32,000 a year, and will probably have doubled within this century. This income will maintain more than 600 beds—a number which, if each bed be occupied ten times, would represent relief provided (in the house) for 6000 seriously diseased persons in one year. At the present time, when the difficulties of working such an establishment with a partially old structure and in a locality daily becoming more densely crowded have become greatest, the southern lines of railway require the site; and, after more or less of litigation as to time, the removal of St. Thomas's is to be. Here then is an opportunity, nay a necessity, for opening all

the sanitary questions; now if ever we can begin anew, satisfy all requirements, and show the world how these things should be managed.

But the instant the discussion opens it is evident that there are as many opinions as counsellors; some regard solely the neighbourhood originally intended to profit by the presence of a Hospital, some have peculiar notions as to the right size and construction of Hospitals in general, some know of, some, alas! possess, pieces of land most adapted for its situation. In the midst of all this Babel of talk an energetic voice has been heard in a memorial from the Medical Staff (it appeared in the *Times* this day last month). "The Physicians and Surgeons of St. Thomas's Hospital respectfully desire to address the Governors of the Hospital on the approaching crisis in the affairs of this noble charity;" and then, having traced the history, and recapitulated the extensive benefits of their Institution, the memorialists submit very urgently that nothing should be rashly decided on, but hope that "every individual Governor of the Hospital will give his time and attention to the subject."

While discussions like these, to the most interesting elements of which I shall presently allude, are taking place in England, another circumstance has brought the subject in a new aspect from across the Channel. The French Academy of Medicine

has just been the scene of a very singular discussion on the relative merits of the sanitary arrangements in French and English Hospitals. The disclosures there made materially affect the settled convictions of most Hospital reformers,* and by placing beyond a doubt the defective hygiene of French Hospitals, contribute to the interest which, as I have already shown, is so generally felt in the Hospital question at the present time.

In turning to history for any account of the origin of Hospitals we soon become aware that they are essentially phenomena of the Christian Era, previous to which there are but scanty records of systematic charity afforded to the sick. "In Babylon," says HERODOTUS, "the sick persons were carried to the squares and places of public resort that they might be interrogated by passengers and obtain advice as to the cure of their complaints." In that great commercial city the travelling merchant might know of foreign remedies, and hence this custom. We may see in this very rudimentary arrangement something in which no doubt a human sympathy must have had a share. Amongst the Greeks we happen to know that there were

* "The English plans prove that we have hardly yet begun even to study this branch of knowledge" (*Hospital Hygiène*).—*Notes on Hospitals*.

asylums for aged women of Delos built on the Island Rhene; and I should think that the similarity between the temples of Esculapius and our Hospitals, though sometimes alluded to, has been understated. These temples, prominent amongst the glories of antient Greece, while dedicated to a special worship, must have been at the same time most agreeable resorts for purposes of cure from disease. They were built, to the number of 20 at least, throughout the country of Greece, in the healthiest sites, often on hills outside the towns, and always at springs, if possible of warm or mineral water. The ruins of these temples still attest their beauty; the most important, that of Epidaurus, was surrounded by shady groves; and near them were chambers provided for lodging the numerous sick. The priests were of course the physicians, and to one of these the patient came after a preparatory season of fasting and purification, during which there was demanded of him a firm faith in the processes about to be adopted. Then the priest, surrounded by the cabalistic symbols, influenced the patient's mind, partly by mysterious gestures and partly by reciting the cures recorded on the votive tablets and hung round the temple. So the sick man fell into a prophetic sleep, in which some remedy was revealed to him, or if not the revelation might occur to the priest after sacrifices and prayers; in either case he had to interpret the

dream, but if all failed this was attributed to the patient's want of faith. Two thousand five hundred years have rolled away, and we can still parallel the delusions of that day with our spirit rappings, clairvoyance and mesmerism. And those Asclepiades were not always wrong, far from it; they cared for wounds as we know from the siege of Troy, they studied the virtues of herbs, and they placed the greatest reliance on the value of exercise, fresh air, cleanliness and temperance. A strong faith, with such auxiliaries, might well result in numerous cures. The temples and the worship of Esculapius were introduced to Rome in the year 293 before the Christian Era, and we know that there were *poor* people as well as rich amongst the crowds of applicants, for there is an edict of CLAUDIUS which decrees freedom to any slaves who having been abandoned at the temple on the island in the Tiber, might ultimately recover. Connected with the Roman Circus there was always a sort of Hospital, in which the wounded gladiators were carefully tended.

In the East, scattered through Syria, and at least a hundred years before the Christian Era, we find that remarkable sect of mystics, the Essenes; we know that they existed in considerable numbers; that certain of them, called "practical" Essenes, devoted themselves to good works, curing the diseases of the poor with herbs, and that

they had small Hospitals for lodging pilgrims and for the care of outcasts. Their name of *Therapeutæ* (healers) bears witness to this, and it is worthy of note that they did not share the censures pronounced on other sects, as the Saducees and Pharisees.

Beyond these few cases I am not aware of any Institutions, amongst even the most polished nations of antiquity, on which we could fasten an analogy with the Hospitals of our day.

While no methods must be ignored, by which, in addition to private acts of individual kindness, some general succour was afforded to the sick, it was the spread of Christianity, with its great new command of love to our neighbour, which very soon led to the development of Hospitals, with regard to the nature of which there can be no dispute. As early as the year 258 we find obscure records of a "good Samaritan" in the chief deacon LAURENTIUS, who, in the midst of great persecution, assembled large numbers of sick and poor, ministering to their wants. At the Council of Nice (in 325), Hospitals for the poor, including, of course, those who were ill, are mentioned as well known. About 380, a Hospital said to have been very extensive, was endowed at Cæsarea by the Emperor VALENS; but this was more of a refuge for the poor than for the sick, for the care of the poor, which in the first

centuries had been the business of the Church, was transferred by CONSTANTINE to the State.

The first really distinct Hospital for the Sick was that of the Roman lady, *FABIOLA*, and erected in or about 382. There is something very touching in ST. JEROME's account of this lady and her good deeds. While at Rome that distinguished man seems to have been the spiritual adviser of a number of gifted ladies amongst the converts. Of these was *FABIOLA*, a Roman lady of the noble Fabian family, who, having married under circumstances which, though in perfect accordance with the civil law, were not recognised by the Christian Canon, after her husband's death, as the custom was, did public penance in the Lateran Basilica. A graphic description of the spectacle has come down to us, in which she stands surrounded by bishops, priests and people, all of whom are moved to tears. *FABIOLA* was wealthy, but sold all her estates and founded her Hospital in a healthy spot out of the city; and here, says ST. JEROME, she tended the sick and infirm, whom she had found scattered about the public places of resort. Another of these ladies, *PAULA*, followed this example, and directed her charity towards the pilgrims to Holy Places. Pilgrimages became so much regarded as part of religion, that this was positively necessary. The pilgrims were strangers, and had come from great distances, often from foreign countries; and

there were always amongst their number some who were ill, having suffered from the fatigue and dangers of the way. For such as these numerous small Hospitals were established. ST. JEROME had one at Bethlehem, and PAULA built several on the road thither, in order, as she said, "that the devout idlers might fare better than those great travellers, who on their necessary journey could find no room in the inn."

St. CHRYSOSTOM founded, at Constantinople, in the end of the fourth century, a number of true Hospitals—Nosocomia—for each of which he provided a cook, a priest, and a physician; and he even recommended that every rich man should have a Hospital attached to his house. That his powerful influence extended these advantages elsewhere we may infer from his sweeping reformation of the churches in Thrace, Asia and Pontus.

It is interesting, as showing how philanthropic efforts cannot be attended by unmixed good, to find that the great liberality of those Roman ladies became more and more notorious, so that there arose great numbers of mendicants, and within one year the Prefect had to institute an inquiry in order that no able-bodied persons might receive unnecessary relief.

So much for the early Christian Hospitals. Enough, it is hoped, has been stated to show the manner of their origin. It is not true, as has

been so often maintained, that the hermits and monks, who for fourteen centuries practised the arts of medicine, were the founders of Hospitals, these having been at first attached to churches. From the foundation of ecclesiastical revenues under the Christian Emperors, every Bishop established a general Hospital near his Cathedral. Thus arose the ancient Hospital of the Lateran, thus the now immense Hospital of "Santo Spirito" at Rome, also that at Milan, thus the Hôtel Dieu at Paris was an appendage to the Cathedral of Notre Dame, and so forth. The tide of Christianity, as it swept over the European nations, more especially in the eleventh century, carried with it the Hospital, chiefly as an appendage to its great ecclesiastical institutions.

In the eighth century the Caliphs of Bagdad had founded Hospitals and Colleges in that place, and here the art of healing was not only exercised but taught, for tradition speaks of 6000 teachers and scholars, and of the origin, in the laboratories, of the Science of Chemistry.

The first actual Hospital for the sick, in England, of which I can find a record, was attached, in the manner already stated, to the Cathedral of Canterbury, and founded by LANFRANC, in or about the year 1070. GUNDULPH, the Bishop of Rochester, who came over with the Conqueror, seems to have been the architect. Of the same

GUNDULPH it was said that he was invariably either "begging or building"; however that may be, we owe the Tower of London to his powers in the latter way. Now this Hospital at Canterbury was "a handsome and large stone house" with a courtyard, and divided into two parts, one for men and the other for women, "afflicted with divers kind of infirmities," and it was fully provided with clothing, servants and nurses. There may have been similar Hospitals attached to several of our great Cathedrals, but the records appear to have perished.

Inseparably connected with the question before us is the spread over nearly the whole of Europe of that strange disease of history—the oriental leprosy, during the tenth and succeeding centuries, to the fourteenth. The supposition that this happened through the agency of the Crusades is a common error. A learned German investigator has established, within the last two years, that Hospitals for Lepers are mentioned long anterior to the Crusades. In Switzerland the Abbot OTHMAN founded leper-houses probably as early as 720, and in Bremen these institutions occur a century later. That leper-houses became much more numerous after the Crusades, was doubtless owing to their foundation by the Templars, Hospitalers, or Knights of St. Lazarus, who had previously built and managed similar Hospitals in the East. It was partly an instinct of self preservation from an

infectious disease, partly the enthusiasm of religious fervour, which led to the erection of these small refuges for those who, necessarily outlawed from social life, either became a dangerous class, or perished miserably from neglect.

By the thirteenth century almost every town in France had its pest or leper-house, and very soon afterwards they were as common in England. In DUGDALE's *Monasticon* there are about ninety specified. In Bristol there were at least two, one of which, dedicated to St. Mary Magdalen, stood on the west side of Redcliff Hill; but there is no further record of it, except indeed one of the most interesting forgeries of CHATTERTON. Small Leper Hospitals, founded by private benevolence or in connection with Abbeys, were far more numerous than general Hospitals, to which indeed they were often attached. Thus the first English Hospital described, at Canterbury, had a number of wooden huts appended to it for lepers.

As the dreadful disease swept slowly northwards it left the Leper Hospitals empty behind it. In 1350 lepers are mentioned as disappearing rapidly at St. Albans; and, two centuries later, EDWARD VI.'s commission for suppressing Colleges and the like found most of the leper-houses empty. In Scotland, as shown by Dr. SIMPSON, they were occupied long after the English ones were disused, and they are still to be found in the Scandinavian

Peninsula at the present moment. The Hospitals now existing throughout England did not arise out of the pest or leper-houses.

Having shown the origin of Hospitals for the Sick in the third century, and their gradual distribution *pari passu* with Christianity, chiefly by the bishops, it remains for me to state that though the assertion of their monastic origin is a mistake, I am far from wishing to under-value the intense fervour of charity which was often exhibited by the hermits, and subsequently the monastic orders. Egypt was, as all know, the cradle of monasteries in the fourth century, and regarding their character I may, perhaps, be allowed to quote these sentences from the pen of a powerful advocate, M. MONTALEMBERT,—“In Egypt the first monasteries were schools of labour and charity: a more generous hospitality had never been exercised, and a thousand incidents in their history reveal the most tender solicitude for the miseries of the poor. * * * A certain monastery served as a hospital for sick children, and thus anticipated one of the most touching creations of modern benevolence; and another was transformed by its founder, who had been a lapidary, into a hospital of lepers and cripples. ‘Behold,’ said he, in shewing to the ladies of Alexandria the upper floor, which was reserved for women, ‘behold my jacinths;’ and again, in conducting them to the floor below, where

the men were placed, ‘see here my emeralds.’” Nor did the idea that the religious orders had to care especially for the poor and sick ever become quite extinct, and pilgrim Hospitals, which ministered also to the sick traveller and often to the lepers, became exceedingly numerous, so that in the ninth century there were twenty-four in Rome alone. As monasteries spread over western Europe, they brought with them their customs of hospitality and afforded an asylum to travellers when there were no inns. The rule of most monasteries was that a guest was entertained for three days, but on the third day, after dinner, he was expected to take his departure, and if ill, he was cared for longer. The thin population of the country rendered it unnecessary to have special buildings for this purpose. In monasteries there was always an Infirmary for the brotherhood, and in which there were, as I find from a book of the Order of St. Victor of Paris, three kinds of sick,—“some who lie in bed; others who are recovering, get up and walk, but remain till they repair their powers; others who dine and sleep there, being old, blind, feeble, or the like.” It is curious to find a certain completeness in these Infirmaries, and points which we might do well to copy. The Harleian M.S. mentions the provision of a chapel, a refectory, an “oriel” or convalescent’s parlour, and a garden or covered gallery for recreation. It sounds strange

enough that monks afflicted with ennui and langour of mind were directed to sit on a certain stone seat and meditate while they watched those who were dying. This advice seems to have been a mistake on the part of that "one of them who," as the manuscript informs us, "being a physician, was appointed to attend and provide medicines for them."

These remarks apply also to the military orders. By the thirteenth century the Knights of St. John had established, according to MATTHEW PARIS, 19,000 Hospitals. But these were not for the sick, unless, indeed, in exceptional cases: they were, in England, *manors* for farming, and which partially supported the extensive parent community.

The only Infirmary attached to a monastery and which has, in Great Britain, survived the suppression of those institutions, as far as I can ascertain, is that of St. Bartholomew, in London. Its preservation was owing to the provision for the poor made by King HENRY VIII., who gave it to the citizens of London for that purpose. Owing to a gradual rise in the price of provisions from 1450 to 1550, unattended by a proportionate rise in the price of labour, the number of beggars had increased so much that justices were required to licence certain to beg; and, in London, the King granted firstly the old and ruinous Hospital of St. Thomas to be

repaired for the reception of "poor, impotent, lame and diseased people." St. Thomas's Hospital was an old almonry, which had been founded by the Prior of Bermondsey in 1213, and surrendered at the dissolution. St. Bartholomew's, as just stated, had always been a Hospital, and its early history affords a vivid picture of the customs of the middle ages. This Hospital was founded by one RAHERUS, a Norman by his name. "After passing the flower of his youth amidst the licentiousness of the soldiers' camp and the feudal castle, being minstrel to King HENRY I, he became *penytant of his sinnes*," being a man, as the monkish chronicle relates, "sprung and born of low kynage, and having neither wealth nor land." So he feigned himself to be an idiot, and collecting daily a little band of children, lepers and poor people, with their aid gathered stones from the waste morass, and began, in 1102, to lay the foundations of the Hospital of St. Bartholomew. An idiot, it is well known, was, in those ages, held to be under the special providence of God, and he might thus, in the first instance, gain assistance that would not have been otherwise rendered. "Truly this place," says the chronicle, "before his cleansing pretended no hope of goodness. Right unclean it was, and as a marsh drear and fenny, with water almost everywhere abounding; and that that was eminent and dry above water was deputed and ordained to be the

gallows of thieves, and for the torment of others condemned by judicial authority." Casting aside his assumed idiocy, we find RAHERE "instructing with cunning of truth, saying the word of God faithfully in divine churches, constantly exhorting the multitude of clerks and laity to follow and fulfil those things that were of charity and alms deed." These appeals were not in vain, for "having the title and desired possession of the King's Majesty he was right glad; then nothing he omitting of care and diligence, two works of piety began to make—the Church of comely stone work [table wise], and an Hospital house a little longer off from the Church, by himself he began to edify." RAHERE had a coadjutor in his work for the Hospital, by name ALFUNE, "a certain old man to whom was sad age with experience of long time." He became the first Hospitaller or Proctor for the poor of the House, and went himself daily to the shambles and other markets, where he begged the charity of devout people for their relief.

In the year 1546 the Bishop of Rochester, preaching at St. Paul's Cross, declared the gift of King HENRY VIII. to the citizens of this Hospital, "for the continual help and relief of an hundred sore and diseased." The citizens were called to their parish Churches by the Mayor and Aldermen, and admonished in eloquent orations to take the poor of divers sorts out of the

streets, lanes and alleys, and bestow them in Hospitals. At the same time every man was moved to contribute liberally to the weekly support of such Hospitals for a year or two until they were provided for by endowment.

In the reign of King EDWARD VI. (1552) the house of the Grey Friars (afterwards Christ's Hospital) was set in order to receive poor fatherless children, at which time Bishop RIDLEY took occasion to preach before his Majesty at Westminster, to exhort the rich to be merciful to the poor, and to move those in authority to labour by some charitable means for their comfort and relief. The result of this discourse was an interview between the King and RIDLEY, when the King spoke as follows: "My Lord, you willed such as are in authority to be careful of the poor, and to devise some good order for their relief, wherein I think you mean me, for I am in the highest place: I therefore am the first that must make answer unto God for my negligence if I should not be careful therein, knowing it to be the express command of Almighty God to have compassion of his poor and needy members for whom we must make an account unto Him." He then recommended a meeting of the Bishop, Mayor, Aldermen, and Commoners, on which occasion the poor of the city were divided into three classes, and the three Hospitals, Christ's Hospital, St. Thomas's, and St. Bartholo-

mew's assigned for their relief. The King desired to be accounted the chief founder and patron of these houses. When the patent was brought to him to put in what he pleased, "he, looking on the void place, called for pen and ink, and with his own hand wrote this sum in these words, 4000 marks by the year, and then said, in the hearing of the Council, 'Lord, I yield Thee most hearty thanks that Thou hast given me life thus long to finish this work to the glory of Thy name,' after which foundation he lived not above two days."

While the Hospital of St Bartholomew was being put into good order, it was further enriched by the generosity of a good man of humbler order. "There was one RICHARD CASTELL, a shoemaker, dwelling in Westminster, a man of great travail and labour in his faculty, with his own hands, and such a one as was named 'The Cocke of Westminster,' because both winter and summer he was at his work before foure of the clock in the morning; this man thus truly and painfully labouring for his living, God blessed and increased his labour so abundantly, that he purchased lands and tenements in Westminster; and, having no childe, with the consent of his wife (who survived him and was a virtuous and good woman) gave the same lands wholly to Christ's Hospital aforesaid, and for the succour of the miserable sore and sick harboured in the other Hospitals about London."

That the sick poor of London were, however, most lamentably neglected as late as 1585, may be seen from the following remarkable passage in the "Anatomy of Abuses," a reliable book of the period, in which we are told that—"the poor lye in the streets upon pallets of strawe, and wel if they have that too, or els in the mire and dirt, as commonly it is seen, having neither houses to put in their heads, couering to keepe them from the colde, nor * * * anything els, but are suffered to dye in the streets like dogges or beastes, without any compassion showed them at all. And if anye be sick of the plague or any other mortal disease, their maisters and mistresses are so impudent * * * as straightway they throw them out of their doores; and so being carried forth either in cartes or otherwise, or laide downe cyther in the streetes or els conueid to some olde house in the fields or gardens, where for want of due sustentation they end their lives most miserably."

Modern Hospitals or Infirmaries, as they are familiar to us now in this country, have all been erected in the course of the last century and a-half. In the year 1700 there were two Hospitals, the origin of which has been already described, in the United Kingdom. One of these, St. Thomas's, had just been rebuilt at the time

alluded to; the other, that of St. Bartholomew, was also rebuilt but a few years afterwards. From 1700 the tide of charity flowed strongly in this new channel, and general Infirmaries arose in almost every provincial town of importance.

It may be as well to point out here that the terms Hospital and Infirmary have now precisely the same meaning. In the provinces there are 77 "Infirmaries" against 65 "Hospitals," but in London there are no "Infirmaries," and for the entire United Kingdom there comes out this curious result in figures, that while the number of Hospitals is 128, that of Infirmaries is 125. Neither term is quite satisfactory, because on the one hand these institutions are not "hospitalia" in the original sense of guest chambers or pilgrims' lodgings; nor, on the other hand, are "Infirmaries" designed for those who are simply *infirm*. The object of each is the same, *to effect, by every available means, the recovery from disease of persons who cannot afford to have those means applied at home*. This insufficiency of means, and this state of actual disease, together with the possibility of affording for that disease some relief, are thought, by those who have well considered the subject, to be the conditions which must co-exist in order to entitle a patient to be admitted. These are necessary qualifications in the United Kingdom, where these Institutions are mostly supported by voluntary

contributions, and in which every patient, excepting those requiring instant attention, comes under the scrutiny and decision of the Committee of Management. Continental Hospitals are usually supported by endowments and Government aid; consequently their rules of admission are laid down by the law of the country. The sick poor are therefore admitted into them without much reference to the objects already specified, and want of the common necessities of life is oftener the question than what benefit can be afforded to the disease. The patients, in fact, are such as have provision made for them in the wards of our work-houses, under the Poor Law.

Voluntary general Infirmaries or Hospitals are peculiarly British Institutions, and arose, as has been mentioned, in the 18th century. In the year 1700 there existed the Hospitals of St. Thomas and St. Bartholomew in London; then followed Salisbury in 1716, Westminster and Cambridge in 1719, Guy's Hospital in 1721, St. George's in 1733, and the Bristol Royal Infirmary in 1735. Then came a series of 27, one every few years till 1797. The Bristol Infirmary has therefore the honour of standing nearly first on the list of those out of the Metropolis. The total number has gone on up to the previously mentioned 253 of the present day, many of these being however very small establishments. The foundation of all has been effected,

like that of the first Christian Hospitals, not by religious institutions like the monastic, nor under the direction of government, as in many countries, but by the piety of individual members of society, who, feeling their case to be a strong one, urged it upon others, and so realized the necessary means.

The next subject in order is that of Hospital improvement and reform. Every one is now sufficiently acquainted with Infirmaries and Hospitals to know that there is, amongst the complex arrangements of such Institutions, more room for progressive improvement than perhaps in any other similar place. Think for one moment of your own house during very severe illness; think of the many difficulties, the liability to confusion and disorder, the multiplicity of appliances wanted, and then remember that all this is undertaken in every Hospital, and that instead of there being but one solitary sufferer, there are many, perhaps hundreds, of whom no two are alike. Thus it is clear that our Hospitals must be ever in the course of reform, and that no amount of sagacity, however great, will be thrown away on their improvement. The management of old, and the construction of new Hospitals have been the subjects of much careful thought during the last few years, and amongst numberless topics I can allude on this occasion to such only as possess a general interest.

For the successful management of the sick, whether in a new or old Hospital, nothing is more important than efficient *nursing*. Of all complaints urged from time to time against Hospital arrangements, the loudest have been directed towards this department. Indifference or even cruelty to the patients under their care have been too often proved of nurses, and that a great change for the better has taken place within the last ten years is owing to the constant efforts of those who, having watched these things personally, felt the absolute necessity for a better order of things. At the same time it must be remembered that the difficulty in obtaining proper nursing is by no means peculiar to Hospitals, but is equally great during severe illness in private families, and also that instances of dutiful self-devotion have always been forthcoming in the one situation as in the other. For all that, "*the nurses must be improved*" all reformers have said, from the active members of the Committee or Medical Staff of every Hospital to that great hearted lady who has brought about so many reforms.

There are two plans of effecting this object, both of which have been tried; the one by means of training in religious orders or sisterhoods, as deaconesses; the other by training simply under proper experienced superintendents. The Protestant German Institution of Kaiserswerth has attempted the first of these two methods with success.

In the principal Hospital at Berlin, the Charité, a portion of the building has been for several years allotted to them, and the sisters have been found to carry on the nursing very efficiently. In England there are at the present moment, I believe, twenty-six institutions of sisterhoods analogous to, and more or less copies of, their German prototype. The one best known is St. John's House in London, the design of which is thus expressed in its rules:—"To improve the qualification and to raise the character of nurses for the sick, by providing for them professional training, together with moral and religious discipline, under the care of a clergyman, aided by the influence of a lady superintendent and other resident sisters." The Institution is therefore under the care of a master who is a clergyman of the Church of England, a lady superintendent, and two physicians. The inmates are:—1. *Sisters*, or ladies who are willing to devote themselves to the work of attending the sick and poor, and of educating others for those duties. 2. *Probationers* or women under training in the Establishment and in the public Hospitals of the metropolis. 3. *Nurses*, or women who have passed satisfactorily their period of probation. The nursing in King's College Hospital is entirely managed by St. John's House, and, positive evidence being stronger than any amount of speculation as to the result, I adduce the following testimony from the steward of the Hospital:—"We pay St. John's House £1,100

a-year, which includes all the female domestics in the house, twenty-six nurses, besides a number of probationers who are in training, and a staff of about half-a-dozen ladies who superintend the nurses, and reside like them in the Hospital. This plan has been in operation six years and has worked most satisfactorily; so much so that every one connected with us would be extremely sorry if the connection between the two Institutions were to come to an end." One of the Hospital physicians writes as follows:—"The system has worked admirably from the first, and still continues to work well; those who doubted it at first are now warm supporters, and a considerable part of the Hospital has been set apart for the comfort of the sisters and nurses. St. John's House is, I think, now safe, it still needs support, but we are extending its usefulness as fast as our funds will allow."

It will have been observed that there are two important elements in the plan of St. John's House with regard to which questions open, one of which is the religious character of the society; while the other, upon which it has been suggested to me that some special remark should be made, is the fact of ladies taking their place as Sisters amongst those who are sent out for the purpose of nursing.

The first of these points, the primary notion of a Religious Order as the basis of the nursing system, is probably derived from the knowledge

that in many continental Hospitals the nursing is well managed by the "Sisters of Charity." Of this as a general statement there is no doubt, but admiration of the "Sisters of Charity" has been carried so far as to have almost led to the inference that there is and can be no nursing at all comparable to theirs,—the cause of which is to be found in the religious character of the system under which they act. The late Mrs. JAMESON in her delightful little work on the *Communion of Labour*, has the following sentences:—"The Paris Hospitals are so admirably organized by the religious women, who in almost every instance share in the administration, so far as regards the care of the sick, that I have often been surprised that hitherto the numbers of our medical men who have studied at Paris have not made any attempt to introduce a better system of female nursing into the Hospitals at home." "I should observe that generally in the Hospitals served by Sisters of Charity there is ever an air of cheerfulness caused by their own sweetness of temper and voluntary devotion to their work." "In the great civil Hospital at Vienna I found that the Sisters of Charity were about to be introduced. One of my friends there, a distinguished naturalist and philosopher as well as physician, told me that the disorderly habits and want of intelligence in the paid nurses had induced him to join with his colleagues in inviting the co-operation of the Reli-

gious Sisters, though it was at first rather against their will. In the Hospital of St. John at Salzburg the same change has been found necessary." One would most cordially agree with these expressions as correct observations on the part of those who, as visitors, inspect the Hospitals under the care of the Sisters of Charity. I am sorry to be obliged to say one word which could seem unfriendly to them, but admiration having been unqualified it is due to truth to say that there is another side to the question. The most distinct evidence I have yet obtained that these nurses are not invariably excellent is derived from a lady whose activity and benevolence are well known in this city. That lady, who is at the present moment engaged in making observations on the great Italian Hospitals which we shall probably have the advantage of reading before long, has arrived at the most startling truths respecting this very question. In the vast Hospital of Santo Spirito at Rome there prevails, as I can myself bear witness, the greatest apparent neatness and order. But from sources of information which must of course remain a secret, and with regard to which it may be safely said that they are the most reliable that can be obtained, it comes out that the nursing managed by Sisters of Charity (introduced, I believe, at the French occupation) has proved a thorough failure. "The duties are discharged in the most perfunctory manner; admirably, so far as the production of

bandages or the etceteras of the ward-work goes, and the administration of food and medicines at prescribed intervals; but heartlessly, without any feeling, even absolutely with cruelty sometimes towards the patients, and without any power of correction on the part of the medical officers." The same thing had been observed in Florence, and I could adduce further testimony to a similar state of things elsewhere. Suffice it to say that nursing the sick can never be well done by mere machinery, even though this be built up of human elements, united together by the most promising system; and there is but little virtue in any system under which the charitable feelings of each member are only too apt to become lost in the general routine. In the Protestant religious associations of Kaiserswerth and St. John's House the result has been so far satisfactory; but it must be evident that some difficulty would, at least for a time, arise in attempting a very large application of their principles, as the first condition insisted on is that the whole nursing of at least one entire department, or none at all, shall be undertaken; while every system which is necessarily restricted to one form of religious profession must, from its exclusiveness, become too limited for practical Hospital use on a large scale.

If we are to raise the character of nursing in our Hospitals, clearly we can only do so by raising the character of the nurses individually. To do

this effectually we must have first the right material to work upon, then the careful training in all details of sick nursing, and then the active conscientious discharge of each duty. Kindness of heart and readiness of will are not to be bought or induced by love of gain; there must be some high motive at work, such as may well be brought about by the influence and co-operation of educated religious women—of women who, having by nature the faculty of caring for the sick and helpless, have voluntarily trained and prepared themselves for the work, and bring to its fulfilment the advantages of a cultivated mind, and a heart all the readier to sympathize and forbear with suffering. Any incidental tendency on the part of nurses to callous or perfunctory handling of the sick must be corrected by the superintendence of those who have not the manual offices to perform, but only to watch; besides which, periodical holidays for refreshment of mind and body, such as have always been recommended at Kaiserswerth, will be found most useful.*†

* In the Charité at Berlin, a system of *rewards* for nurses has proved of great service; so that as much as 1,200 thr. *per annum* is expended in that way.

† On the important practical question, how to train and improve our nurses, I have been favoured with the following note by a lady who has carefully examined the present aspect of the subject:—

"THE SIMPLEST AND LEAST EXPENSIVE TRAINING INSTITUTION FOR NURSES FOR THE SICK would be arranged somewhat as follows:—

It remains that I should add a few words on the subject of lady nurses. During the recent "reform" period of Hospital nursing, many ladies have been induced, by motives which everyone must honour, to enter upon the duties of Sisters or Superintendents in connection with Miss NIGHTINGALE. It is generally known that this lady would only accept a national testimonial for her services in the form of a fund for the establishment of an Institution for training nurses, and contributions being rapidly sent in from all quarters of the world and from all classes, she selected the

A suitable house should be rented within easy distance of the Hospital (where alone the needful teaching can be obtained). A lady superintendent should be appointed, who, under the direction of the Committee, would have charge of the pupil nurses when not in the Hospital, and also act as Mistress of the Home. The nurses should be not under twenty-five or above forty years of age, of certified good character, and in average health. They would engage themselves to the Institution for three years, receiving during that time board, lodging, wages and a portion of their clothing. The first year they would spend the greater part of each day in the Hospital, where they would receive instruction and act as assistant nurses. The two succeeding years they would be eligible for hire, as trained nurses from the Home, where they would still reside when out of employment. Their earnings would be paid to the Institution. At the end of the three years they might either renew their engagement to the Home, on improved terms, or work independently, with the advantage of a certificate from the Institution. £1000 would suffice to establish a Home for six candidates, adding six annually, and with the addition of the sum paid to the Home for private nursing, would fully cover the expenses of the first three years. After the second year the profits of the Home might be expected to meet at least three-fourths of the annual expenses, so that, with the help of moderate subscriptions, the Institution would be able to provide gratuitous nursing for the sick poor."

Hospital of St. Thomas for the purpose. The nursing system has since been in operation there; a department is appropriated to the sisters and nurses; and each sister or head-nurse has a band of fifteen probationers under her superintendence. Regulations for the training of nurses and a list of the duties of "Probationers" under the fund were drawn up by Miss NIGHTINGALE, embodying a complete system for the highest education and training. At first starting some of the Probationers had to be dismissed as unfitted for the task, but on the whole they have gone on satisfactorily. After a year's "probation" they proceed to other Hospitals, to make room for successors.

It is quite certain that if ladies are to fit themselves for superintendents, matrons, or nursing the sick at all, they must first learn the detail of nursing; they must begin with the simplest and humblest duties, so as to know themselves how to do that which they will afterwards have to direct. Should any ladies however feel impelled by a perhaps over-excitableness to hurry into this mode of making life useful, I commend to their particular attention the following opinion from one who has a right to speak—the lady manager of the system at St. Thomas's:—"As a rule, I would say, I have had no evidence to justify my thinking ladies well adapted for Hospital *nurses*; nevertheless, ladies possessing the gift (for it is a gift)

of organization and arrangement, will, in our large metropolitan hospitals, be valuable assistants either as superintendents, sisters, or head nurses; and in provincial Hospitals as matrons * * but to be of real use in Hospitals, ladies should first qualify themselves for the work, and this can only be done by training for it. A year of practical experience in some large well-conducted Hospital I regard as an inestimable as well as an indispensable preliminary. * * The best nurses, generally, are women chosen from the respectable classes, who have had the benefit of a fair education, and who have been accustomed to the performance of household duties."

To some who have rashly undertaken the serious work of learning to tend a sick bed, there must often have come a bitter disappointment; the sacred duties will have appeared trivial, the monotony intolerable, or the peevishness of disease have been mistaken for ingratitude. But, like other occupations, sick nursing is a Divine vocation, and as such only must it be regarded if it is to be crowned with success.

In time there seems good reason to hope that the system set on foot by Miss NIGHTINGALE, and now at work, will accomplish its object. Failures, through want of bodily strength, of aptitude, or of perseverance, will occur. But those ladies who honestly take upon themselves the duty of aiding

their poorer sisters in this duty, and who devoutly persevere in the work as God's work, looking for no selfish reward, will effectually help on the cause of the sufferers in our Hospitals.

If, from the management of *old* Hospitals, we turn to the improvement in *new* ones, there opens upon us a subject of great extent, and which is still, as regards details, full of difficulty. To give the slightest idea of what has been proposed by *each one* of a series of sanitary reformers would be a lengthy matter, but the results of their united labours may be stated in a condensed form.

A hundred years ago, Sir J. PRINGLE, in a work on "the diseases of armies," pointed out the dreadful evils attendant on a badly arranged Hospital, seizing on the important points with such clearness and intelligence that scarcely a principle laid down by him has been rejected, and the work of all succeeding reformers has been rather to prove by figures what his instinct had suggested, and to fill up with detailed minuteness the outline which he had boldly sketched in. Ten years afterwards, in 1773, the mortality in the Hôtel Dieu of Paris became notoriously excessive. The cause was overcrowding, as many as 5000 sick having been not seldom brought together in a Hospital possessing 1200 beds only, but which the law of France required to admit every applicant. This led to a

commission of the Academy, the recommendations of which, chiefly with regard to the presence of such numbers in close proximity, were strengthened by the important essays of TENON, in France; BLANE, HOWARD the philanthropist, and BLIZZARD, in England; and LIBERTI, in Italy.

Of recent date several active contributors to the subject have come forward. ROBERTON, of Manchester; STEELE and MCGHIE, of Glasgow; BRUNEL and PARKES on the very ingenious Hospital at Renkioi; and lastly we may give the place of honour to Miss NIGHTINGALE, who has, in her little book on Hospitals, brought the questions of site and construction within the reach of everyone who feels interested in the subject. Miss NIGHTINGALE has condensed her own opinions and those of most (although not of all) reformers of Hospital construction, in 21 aphorisms, amongst which a few may be selected as of peculiar interest.

The *general plan* now recommended by all competent judges for Hospital arrangement is the so-called "pavilion system," the type of which is the great Hospital of Lariboisière, near Paris, though there are now many others of nearly identical form. Here there are pavilions, or three story blocks, arranged round a central space, each being large enough for 100 patients, the air of each block having no communication with that on each side of it, and one set of offices and kitchens serving the

whole. The number admissible is 612, and on the whole perhaps no existing Hospital exceeds, in supply of light, airiness of site and convenience of arrangement, that of Lariboisière. Amongst many points, however, which demand careful consideration, one is the number of beds in each of its wards. This is greater in the Lariboisière, and in most foreign Hospitals, than in the generality of ours in England. In the S. Spirito at Rome there are from 200 to 300 patients in each of several huge halls; while the new Royal Victoria Hospital at Netley has only nine beds in each ward. Miss NIGHTINGALE considers that while sanitary Science has finally pronounced against the accumulation of very large numbers of sick, convenience of nursing and supervision requires that the subdivision should not be carried so far as to give too few to each ward. "Small wards," says Miss N., "are indeed objectionable in working a Hospital," and 32 is therefore the average recommended. There appear to me many reasons why even this number may advantageously be reduced, in civil Hospitals especially, where the feelings of the individual patient are and will be yet more in favour of that which most resembles his home. Again, the more cases in a ward, the more the annoyances of each are inflicted upon the rest. Altogether, even granted that the superintendence would have to be increased, I hold that small

wards are the best, and that even these should have special apartments for exceptional cases, *e.g.* dangerous ones.

Prominent amongst Hospital reform questions is that of *the situation*, and one possessing unusual interest at present, on account of its relation to the already mentioned removal of St. Thomas's, in London. As almost daily letters are now appearing in the London papers on this subject, everyone has the opportunity of studying for himself the arguments urged for retaining the Hospital in the dense population, for removing it to the suburbs, or entirely to some distance in the country. Miss NIGHTINGALE has spoken with great decision on this point. 1.—Never erect a Hospital within the precincts of a town. 2.—Remove all Hospitals out of town or from populous suburbs. 3.—Build all Hospitals in the country. Now, with the greatest deference to so great an authority, after having had the question under my own personal notice during almost daily Hospital work for 17 years, I have no hesitation in saying that these propositions are not yet satisfactorily supported. The tests of Hospital salubrity which have been of late proposed are two; the prevalence of certain diseases which come on in Hospitals; and, secondly, the difficulty with which various cases get through their convalescence. But with respect to the first of these two points, the Hospital reformers themselves are

in the position of having proved the diseases which arise in Hospitals to proceed from want of ventilation; from want of *air in motion*, *i.e.*, not from want of *country* air. Every person suffering from a dangerous disease spreads from him an atmosphere charged with injurious elements, and there must be a provision for flushing the wards (like any other sick room) with fresh air, otherwise a sort of stagnation of poisonous vapour necessarily occurs. Some years since I saw in the very large and new wards of a London Hospital a plan of ventilation with the usual gentle percolation of fresh air, and though this was quite perfect theoretically, there occurred such an unfortunate series of diseases originating in the Hospital, that, almost in despair, the previously fastened windows were made to open wide, a flood of refreshing air flowed in every direction, and all signs of danger vanished. But this tends to prove that there must be fewer patients, more space between their beds, and more air within or in the immediate vicinity of the Hospital, not that it should be removed into the country.

With regard to the debate already alluded to before the French Academy of Medicine, on the comparative sanitary state of English and French Hospitals, the discussion may be said to be still in progress, and it is premature to do more than guess at its ultimate decision. So far, however, the facts

have been in favour of the English Hospitals, with all their old-fashioned faults and situations.* Dr. GOSSELIN opened the Academy debate by setting forth the superiority of English wards as better aired than those of Paris; Dr. DAVENNE, who opposed, did not deny the superior sanitary conditions of London Hospitals, but maintained that this arose from the smaller number of cases in each ward, an opinion in which Dr. MALGAIGNE concurred.

Since this debate a pamphlet on the same subject, from the pen of M. LEON LEFORT, has excited great attention. In this he compares the results of the same surgical operation in British and French Hospitals, and sums up what seems an unanswerable argument in these words—"The hygienic conditions of Infirmarys or Hospitals are, in almost every point, better in England than in Paris, and our Hospitals are not worth so much for the sick as those of the United Kingdom." A point on which I wish particularly to dwell is that the Lariboisière, as to general per centage of deaths, so far from appearing the best of the French Hospitals, actually stands worst in the comparison, *although it is out of town*, and another great pavilion Hospital, Beaujon, seems nearly as unfortunate.

* It is singular that the same assertion was made and proved by Sir WILLIAM PETTY in his "Essay in Political Arithmetic," 1686!

Drs. WILKINSON and SOUTHAM, of Manchester, have recently presented a Report to the Board of their Infirmary, in which they relate that, having examined the chief Continental Hospitals, they believe the results obtained in the Manchester Infirmary, "will bear a favourable comparison, in general arrangements, both sanitary and medical, with any Hospital of a like magnitude." An unlimited power of free ventilation seems to both French and English Hospital reformers of the first importance, and it is an excellent aphorism of Miss NIGHTINGALE, that ventilation should be freely effected by doors and windows, whatever plans may be adopted as auxiliary.

The comparatively slow convalescence of patients recovering from severe disease, especially fever, in town Hospitals, may be considered as a fact; but there is a far more satisfactory way of remedying this than by removing the Hospital into the *vicinity* of the town. This is the provision of convalescent Institutions a few miles away, if possible near the sea, and in an accessible interesting neighbourhood. A few years ago, through the private benevolence of a gentleman residing in Clifton, a cottage was opened for poor persons convalescent from acute disease, and available for such cases when discharged from the Institutions in Bristol. Its purpose was to afford to poor patients, while recovering, the benefits of sea air, nourish-

ing food and a comfortable home, before returning to their work. The internal arrangement of the house, though not originally built for the purpose, and its healthy situation near the mouth of the river, amply fulfil its intention. Patients, of both sexes, are accommodated, five at a time, under the supervision of a matron, a married woman, whose husband pursues his own occupation. No strict rules have been found necessary; the patients have a good and regular diet, and are left to take air and exercise at pleasure. The results have proved most satisfactory, not only in restoring health and strength, but also in promoting a good moral tone. From the arrangements of the house the people are under the influence of a cheerful home life, and they remain a fortnight or, if necessary, somewhat longer. The situation of "the Cottage," near the road which an omnibus passes twice a day, renders it especially convenient for the access of poor patients.

It is, I repeat, well worthy of consideration, whether the establishment of such excellent *Sanatoria* would not be far more useful, in conjunction with a free and powerful ventilation of the Hospitals themselves, than the absolute removal of the latter. There are many reasons why a Hospital out of town is shorn of much of its usefulness. To mention a few only; we know how often in a dense population men and women

are taken suddenly ill, or sick and fainting, or are fearfully injured; the conveyance of persons in such a state to some distant Hospital in the country would be frequently impossible, always injurious. The poor apoplectic might perish, the broken limb be made a tenfold more serious injury, simply by the transit. Again, the Out Patient system, a form of relief suited to the domestic habits of the English, and to the popularity of which the increasing numbers attending daily at our Infirmary and General Hospital bear witness, would not work at all were these removed to a distance; while the inconvenience of having "In Patients" and "Out Patients" in separate buildings would be, as all practical men know, very great. Lastly, how, except in the case of military Hospitals, is the requisite medical and surgical assistance to be procured, with its prolonged observation, visits several times a day, perhaps, consultations and operations in the night, besides an organised system of pupils for assistance and for learning? For, in respect to these last, it is pretty certain that the exact scrutiny of the patient's ailment, and consequent success in treatment, will be in a direct proportion to the *teaching* status of the professional staff.

For the same reasons which seem to preclude the entire removal of city Hospitals to the country, a fair measure of success has during the past few

years attended the working of village Hospitals, and there are already three in useful action. In remote districts the advantages of immediately placing a poor man, suffering from sudden injury or disease, under the most favourable circumstances for his cure, are too great to need further comment.*

In an article very lately written by one of the most accomplished French medical authors, and inscribed with the ominous words "*Delenda est Carthago*," an attempt has been made to apply that sweeping proposition to Infirmarys and Hospitals for the sick. It is proved, says the writer, that Hospitals are very unhealthy, because each sick person is a point from which disease emanates; the inference is, that as numbers multiply the evil, the fewer patients brought together the better; *ergo*, for the sick man to be at home alone would be the best of all. This is, however, but the brilliancy of an imperfect logic, for were the first assertion true of English Hospitals, as it may be of crowded ones in France, every one knows how often any appliances for the cure of disease, are utterly inefficient, in such dwellings as the poor at present inhabit.

* The first village Hospital, properly so called, was commenced at Cranley, in Surrey, by Mr. ALBERT NAPPER, in 1859. The second, the Cottage Hospital at Fowey, in Cornwall, was established in 1860. The third, at Bourton-on-the-Water, in 1861.

My object has been to show that this form of charity, the Hospital for the sick poor, is one well worthy of renewed and energetic support. Nobly commenced by the active piety of good women and men, and perpetuated neither by secular power, nor the mechanism of religious societies, these Institutions have developed step by step with Christian civilization. The same piety which founded them, must be reflected in every one who supports them, and this will ever demand a thoughtful consideration of the good they do, and attention to see that they are managed well.

Our extended commerce, the vast machinery to which we owe our wealth, together with the recent growth of great cities, have much increased the necessity for Hospitals; and although imperfections in their working will be always found, these may and must be reduced to a minimum by constant measures of reform. Looking into the future we may safely predict that Hospitals will continue to be necessary until the dwellings, the intelligence, and the morals of the poorer classes enable their sick to be at least equally well cared for at home.

NATURE

IN

THE CURE OF DISEASE:

A LECTURE

BY

JOHN M. STRACHAN, M.D.,

DOLLAR.

EDINBURGH:

SUTHERLAND & KNOX, 60, SOUTH BRIDGE.

1861.

It is only in the army and navy that the necessary machinery for the purpose exists at present. Thirty years ago, no use was made, to any extent, of the returns of the medical officers respecting the

NATURE IN THE CURE OF DISEASE.

In the course of my practice, I have often had to regret the want of a cordial understanding between my patients and myself regarding what was to be expected from medical treatment. I have often found an undue confidence in medicine, leading to expectations of benefit which I well knew could not be realized, but which it was impossible candidly to correct, without producing the impression that it was the unskilfulness of the physician, and not the imperfection of the science, that was at fault. By allowing these expectations to continue, the frequent consequence was disappointment in the present instance, and distrust in the power of medical science for the future.

This ignorance of the public regarding the power of Medicine does not always operate to the injury of the physician. On the contrary, it more frequently leads to his gaining credit for performing cures with which he had nothing to do, but which were effected by Nature, without, or perhaps in spite of, his aid. If medical men were to look only to their own interest, and if they were contented to mix up with their practice a considerable portion of quackery, they would gain far more than they

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would lose by the ignorance of the public. There may be some in the profession who, for their own ends, are willing thus to pander to ignorance and prejudice; but the great proportion of medical men would scorn to do so, and would yield to this ignorance only from their inability to combat it.

There is no doubt that in former times medical men did much to promote, rather than to remove, this ignorance, and by mystery and specious pretence endeavoured to enhance their own value at the expense of truth. This, however, was the evil of the times, and medical men did not differ from other professions. We all know to what an extent priestcraft went, in former and darker ages, in delusion and unfounded pretension; lawyers were not behind, and even handicrafts and trades had their mysteries revealed only to the initiated.

Much of this, but not all, has passed away, and Medicine does not differ from its neighbours, if there be in it still some remains of the mystery and delusion of older times. Other professions have not lost, but gained, by the abandonment of false pretences. The clergy are not less truly respected now that no one believes in their power to pardon sins, or bring down temporal and eternal judgments; and the noble science of Medicine has in it too much of truth and power of doing good, to suffer, although it were stripped of every false attribute with which the darkness of former ages has invested it. Indeed, I am certain that if it were clearly understood what Medicine can do, and what it cannot do, it would stand on a much higher pedestal in public esteem than it now does.

Before we can understand what it is in the power of Medical Science to do, it is necessary that we should have a clear knowledge of what is required from it. For this end, we should first inquire what Nature can do without the assistance of Art. This knowledge should form the foundation of the study of Medicine; but, even amongst

medical men, this subject is too much neglected. Their minds are so occupied with learning the resources of their art, that they are apt to forget that Nature can do anything at all. It is true, that in our schools of Medicine the healing powers of Nature are clearly taught; but the young man, burning with zeal to go forth to do battle with disease, is so anxious to learn what he should do, that those instructions which would teach him, in many cases, to do nothing at all, are apt to fall on inattentive ears.

It would be a great acquisition to Medical Science if we could have a clear knowledge of the natural history of all diseases—that is to say, of what would be their course and termination if left entirely to Nature; but this is very difficult to acquire, seeing that no medical man would be justified in leaving his patient unaided merely to gain such knowledge. And although many do pass through disease without medical aid, in such cases there is no one to watch and record the result.

But if medical men are more ignorant than they ought to be of the healing powers of Nature, yet they are necessarily acquainted with it to a considerable degree, whereas the public seem to know nothing of it whatever; and this is the great source of the want of understanding between physicians and their patients. As I consider this knowledge to be of great importance, I trust you will bear with me whilst I endeavour to impress it on your minds, even should my plan of doing so appear unnecessarily prolix.

Suppose that any of you were to cut your finger and to apply nothing, but merely keep it still and watch it: What, think you, would happen? If you were to cut a piece of cloth or wood, you might watch long enough before any change would take place. Even if you were to wound a growing vegetable, little or no effort at healing would ensue. But it is different with the animal body.

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After a short time the bleeding ceases. This happens, partly, because the loss of blood soon lessens the force of the circulation, partly by the contraction and retraction of the divided vessels, and partly by the influence of the air in coagulating the blood in the bleeding orifices, and so forming little plugs to stop the flow. At any rate, it is certain that after a short time the bleeding stops, even without the aid of spiders' webs, felt from an old hat, or any other styptic. Soon after, there is an increased flow of blood in the small vessels near the wound, so that the part becomes red, swelled, and painful; then a thin, clear fluid is poured from the edges of the wound, and, if they are nearly in contact, this thin fluid fills up the space between them; gradually it thickens, and if you were to examine with the microscope, you would see the little blood-vessels, and nerves at the sides of the wound, shooting out branches into the clear fluid, so that, as it thickens, it becomes organized, that is, having nerves and blood-vessels of its own; then the superabundant fluid that filled up the wound is absorbed, and so the edges are drawn together and firmly glued, so that all trace of the wound is lost.

I have taken it for granted, that, in the wound, no large artery has been divided. But even when this is the case, Nature does not always fail to effect a cure. At first the force of the circulation causes such a flow of blood, that there is not time for a clot to form so as to plug the bleeding vessel; but from the loss of blood, the circulation becomes more feeble, or fainting takes place, during which there is little or no circulation at all; and so the blood gets time to coagulate, a plug is formed, and, even when the patient recovers from the faint, the bleeding does not return, and the further progress of the wound is such as I have already described.

Of course, I do not mean that, in such a case, any one would willingly leave it to Nature. A little judicious

pressure, or, if necessary, a ligature on the artery, would at once arrest the bleeding; but I merely wish to show you what Nature could do if left unaided.

This rapid healing of a wound, which is generally effected within forty-eight hours, is what, among surgeons, is called healing by the first intention. You have a familiar example of it in the closing of the wound after bleeding in the arm. But for such healing by the first intention to take place, several conditions are necessary: the space between the lips of the wound must not be large; there must be no motion of the edges to disturb the process; it must be a clean cut, so that it be not bruised or torn.

If, from the want of any of these conditions, healing by the first intention be prevented, you must not imagine that the resources of Nature are exhausted. On the contrary, she immediately begins to repair the injury in another manner, as effectual, although not so rapid. An increased flow of blood to the part takes place, causing pain and swelling. (This congestion seems to be the preliminary to all of Nature's healing processes.) After a time a new action is begun: pus or matter is secreted and poured out, which relieves the congestion; and, during this process, any parts so injured, as to be unfit for repair, are dissolved and carried away by the matter, together with any foreign substance that may have got into the wound. And now, underneath the matter, and protected by it, a thin lymph is poured out, similar to what joins the parts in healing by the first intention; but, instead of filling up the whole wound at once, it gradually thickens, and forms little projections about the size of pins' heads, called granulations; the minute blood-vessels and nerves shoot out branches into these, and they become organized; and then these pour out new lymph, and form new granulations, until the whole space is filled up, and the wound is healed.

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There is a remarkable circumstance in this healing, both by the first intention and by granulation, that whatever textures are cut, the lymph poured out by them forms itself into the same texture, so that bone forms bone, muscle forms muscle, skin forms skin.

You will observe that the process I have described—the congestion, with its pain and swelling—the formation of matter, or healing, and the granulations—are all parts of a healing process which is effected entirely by Nature, without the assistance of Art. And in every case, when there is nothing unusual to interrupt it, and when Nature gets fair play, wounds are healed in this way; that is to say, by Nature alone.

It very often happens, however, that Art gets the credit of Nature's work. This used to be oftener the case formerly than now. When I began practice, thirty years ago, nobody ever thought of leaving Nature to heal even the slightest wounds. Every person had his or her own healing nostrum. Some washed the part with whisky, and believed that the whisky healed; some used Riga Balsam; some put salt or nitre into the wound; and there were great varieties of healing salves;—without some of which means, it was universally believed no cure could be effected. And all of them, in the estimation of their patrons, healed the wound. No one dreamed that Nature performed the cure in total disregard of their applications.

At a still earlier period, there was even a greater variety of healing salves and lotions. But, among the ancients, these were applied, not to the wound, but to the sword or knife that had inflicted it. The instrument being wrapped in the ointment, was put carefully away, and the dressing changed daily; and this was found a very effectual way of healing wounds,—quite as effectual as any we have now. You laugh; but I have a notion that the ghosts of these forbears of ours laugh in their sleeves (if ghosts have sleeves) at their descendants, and are astonished at

our absurdity in applying the filthy ointments, not to the knife or sword, where they could do no harm, but to the wound itself, where they often do a great deal.

Instead of a wound, let us suppose that some foreign substance—a thorn, a splinter of wood, or a bullet—is lodged in any part of the frame, and that no remedial means are used: What would be the result? First, a flow of blood towards the part, or congestion. A certain amount of inflammation follows. This, in rare instances, is succeeded by a pouring out of coagulable lymph around the foreign substance, which gradually thickens and becomes a firm membrane, that fixes the foreign body in its position, and protects the neighbouring parts. So bullets, and other substances, have been kept for life, doing little or no harm. But, in general, Nature is not willing to keep, but takes measures to get rid of such foreign bodies. Instead of coagulable lymph being thrown out, the process of suppuration is set up; matter is poured out, and certain changes in the surrounding parts are induced. Those textures farther away from the external surface become thickened and impervious, so that the escape of the matter in that direction is prevented, whilst those textures between the foreign body and the surface become absorbed, and get thinner and thinner, till, at last, the matter reaches the surface, and escapes, carrying with it the cause of the evil. Then the cavity or abscess fills up by granulation, and is healed.

You will thus observe that suppuration is also a work of Nature, and is not the result of your poultices, or any other treatment. I am not speaking of whether you can promote or modify the process by treatment. I merely wish to show you that it is a natural action by which injurious substances are removed, and the injured parts restored.

If, instead of a wound, we have a bruise, let us examine what are Nature's operations. We shall suppose

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that the bruise is in the neighbourhood of the eye, because there, on account of the thinness and transparency of the skin, we can see the changes that take place.

The neighbourhood of the eye being bruised, a considerable amount of pain, swelling, and redness takes place. Soon the skin becomes of a dark blue colour. We have a black eye. The pain and swelling are caused by an increased flow of blood towards the injured part, and by an exudation of lymph from the congested vessels into the cellular tissue. The discoloration is owing to the escape of blood, under the skin, from the small veins which have been ruptured by the violence. Now, if nothing in the way of medical treatment be done—no beefsteaks, no Solomon's seal, no sugar of lead lotion—do you think the person would have a black eye for life? No. After a time, longer or shorter, according to the severity of the injury, certain changes would take place: the pain and swelling would diminish; the discoloration would become paler, change to a greenish, then to a yellow tint, and at last it would disappear, and all trace of the injury be lost.

This is an example of what takes place after a bruise in any part of the body, although, from the thickness of the skin, the changes cannot be so well observed.

If, however, the injury has been so severe as to destroy any of the structures to such an extent as to render them unfit to be restored, then another action takes place, the destroyed part loses its vitality, and acts like a foreign body, exciting inflammation in the neighbouring parts, and suppuration, by which it is thrown off in the way I have already described.

I have hitherto spoken only of injuries produced by external violence; but there are many diseases the causes of which are from within, not from without, the body. For instance, inflammation of a part may take place merely from an irregular flow of blood towards it. Cold

applied to the surface may throw the blood on the internal organs, producing congestion, in which the part, or organ, is merely gorged with blood, causing swelling, and interfering with the performance of its functions. In general, this state is quickly cured—the powers of nature are excited—the blood is thrown back to the surface, and the internal organs are relieved. But it sometimes happens that the congestion has been so great that some injury to the delicate structure of the organ has been produced, or, perhaps, by the engorgement of the blood-vessels, a portion of the watery part of the blood has been forced through their thin walls; and if this were left unrepaired it would lead to great disorder. In this case, something similar happens to what takes place in the healing of injuries. Inflammation is set up, accompanied by pain and swelling—the absorbents are excited to increased action, and so the fluid which has escaped is absorbed, and the injury done to the minute structure is repaired; but, if it be too great to be healed in this way, suppuration is excited, and the matter gradually makes its way to the surface, carrying with it those particles of the structure which have lost their vitality.

You will thus see that inflammation of an internal organ is always, in reality, a healing process, and that its natural course is towards a cure. I do not mean that, if left to itself, it will always end in recovery. If the organ be one very necessary to life, such as the lungs, heart, or brain, the disorder of its functions produced by the healing action may be so great as to cause death. Neither do I mean that it will be right to leave it to itself, because, as I have afterwards to show you, Medical Science may do much to moderate the action. But, at present, I merely wish you to see that in internal inflammation there is a natural tendency to recovery.

Allow me now to speak of another class of diseases, where poisons or injurious substances are taken into the

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system. Here, too, you will see the wonderful power of Nature.

The first provision for rejecting hurtful substances is the sense of taste placed at the entrance of food into the body, which often leads to the rejection from the mouth of what would be injurious.

But supposing the poison to have reached the stomach, then it produces a train of remarkable actions—sickness, and at last vomiting, by which, the natural movements of the stomach being reversed, the offending matter is expelled. You will observe that I am merely pointing out this as one of the means which Nature takes to remove noxious substances. I do not mean that in this way Nature removes all poisons. On the contrary, many do not excite vomiting at all. Still this action well deserves to be enumerated among the means by which Nature preserves herself from serious injury. Here, in passing, allow me to point out the evil of rash and ill-judged interference with this effort of Nature. How often people do their utmost to check vomiting, when the proper treatment would be to encourage it, or, what perhaps is better, to let it alone.

When the offending substance has got beyond the stomach, into the bowels, Nature does not give up the contest, but the effort for expulsion is exerted in a different direction. By an increased secretion from the mucous membrane, so as to wash out the bowels, and by an increased action of the muscular fibres, the offending matter is carried onwards and expelled as soon as possible. This is the history of many bowel complaints; here, too, you will see the impropriety of rash endeavours to check Nature's operations.

But let us suppose that the poison has got still farther than either the stomach or bowels—that it has been absorbed into the blood. Even then, Nature is not vanquished.

Intoxication from alcohol is a state of blood-poisoning with which you are all familiar. In it, the alcohol, being absorbed from the stomach and bowels, is carried into the blood, and, whilst there, disorders the function of almost every organ of the body. We see its action on the brain by the disturbance of the intellect—on the spinal marrow by the irregular action of the muscles. It benumbs the sensations, and alters nearly all the secretions. If this state were to continue for life, what a serious matter it would be! And so it would continue, if Nature had no means of getting rid of the poison. Any alcohol remaining in the stomach might be removed by the stomach-pump, or an emetic; but science teaches no way of removing the alcohol circulating in the blood, and it is that which produces the disorder. If any one, for the first time in his life, were to see a person drunk, he would think him labouring under a serious malady; and if told that it was caused by a poison circulating in the blood, which no art could remove, he would think it a hopeless case. But it is not so. We know from too great familiarity, that the malady is curable, and that it is so because Nature takes measures to expel the poison by the lungs—by the skin—by the secretions, till the blood is restored to its former purity.

In a similar way, other poisons are removed from the blood. Sometimes for medical purposes we introduce mercury or arsenic into the system, where it produces great derangement, which would be fatal if continued. But Nature, in its own way, gradually removes the poison.

You will observe that in all those instances where the poison has been purposely introduced into the system, Art can do very little for its removal. But although Art is powerless, or nearly so, Nature is all-powerful. In alcohol poisoning it is removed in a definite period—a few hours removes the most of it, and a few days removes all

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trace. Mercury and arsenic take a longer time; but still they are ultimately removed.

There are many diseases which appear to be blood-poisonings. Typhus fever, scarlet fever, small-pox, measles, hooping cough, and probably all epidemics, are of this nature. Now, if you consider how Nature conducts herself in those cases where we purposely introduce the poison, you will come to understand how she also removes those other poisons we are now speaking of. You are familiar with the fact that Nature, unaided, often does remove these poisons. Many mild cases of measles, scarlet fever, and hooping cough, are left to Nature, and in a definite period are cured. You are not so well aware, because you do not so clearly see it tried, that, even in severe cases of these complaints, Nature is sufficient also for their removal. But medical men know well, that even in the severest cases, if curable at all, it is chiefly or entirely Nature that performs the cure. Medical skill, in such severe cases, may do much to aid Nature, or rather to prevent her efforts being thwarted, and so may conduce to the cure; but it is Nature's powers alone that removes the poison from the system, and repairs the injuries it may have effected.

You are now prepared to understand me when I say that nearly all diseases are caused, either by some injury to the solid materials of the body, or to some poison in the blood; and, from what I have said, you will see that Nature has a great power in restoring the one and in removing the other. It requires, however, much intimate acquaintance with the subject to know the wonderful extent of this power. Medical men alone can have anything like an adequate idea of it. It is not confined to trifling injuries, although we are apt to think so, because it is only in such that we trust to it alone. The same process which heals a cut on the finger, heals also the stump of an amputated thigh; an abscess in the chest is

cured by the same natural process as a whitlow; and most of our fevers and many other maladies are removed in the same way as intoxication.

I have now endeavoured to give you some idea of the healing power of Nature—by no means a complete one, but such as, I hope, will enable you to understand me when I say that this power is in operation in every disease, at least in every curable disease, and that in every cure it performs the chief part. I do not say that it is always successful, far from it. In spite of it the patient often dies, or the ailment degenerates into some other. But in most cases, even when the cure is not ultimately effected, still Nature's efforts are in operation.

You must now see of how much importance it is that we should have a knowledge of, and a belief in, the healing power of Nature. More especially is this knowledge necessary to the medical man. In the treatment of every disease the efforts of Nature must have a powerful influence. If a physician knows what these are, and how they will operate, he will endeavour to take advantage of them; like the mariner who shapes his course to catch what he knows to be the prevailing wind.

I have already alluded to the difficulty that medical men have in acquiring a knowledge of Nature's powers. A young man, whilst studying his profession, never sees Nature entirely unaided, and, being unable to distinguish what part of the cure is due to Nature and what to the means he sees employed, he is prone to exalt Art at the expense of Nature. When he enters upon practice, confident in the strength of his armour and length of his weapons, he has no doubt of success—he expects every ailment to fly before him, like Apollyon before Christian. But soon he is sadly disappointed; case after case occurs which will not yield, at least in the way he expects. He might get on well enough if he would think nothing of the matter, and take it for granted that all recoveries are

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cures; but reflection tells him that often the manner of recovery is not what the treatment should have produced. Thus he loses confidence in his weapons—he becomes disheartened, and has serious thoughts of abandoning his profession. But with all this, his patients do not die oftener than those of other people. Indeed, a great many get better; and, what is more, he gets the credit of curing them, and that, too, in those very cases where he had been most disheartened with the result of his treatment. He now begins to have an adequate idea of the healing power of Nature; and then he observes with surprise, what before he had paid no attention to, that every medical author of eminence dwells strongly on this power of Nature. Then he begins to see the force of such passages as these from Sydenham, the oldest and best of English medical writers: 'Nor do I think it below me to acknowledge, with regard to the cure of diseases, that when no manifest indication pointed out to me what was to be done, I have consulted the safety of my patient and my own reputation most effectually by doing nothing at all; for whilst I carefully attended to the disease, in order to cure it in the best and safest manner, the disease either went off gradually of itself, or came to such a state as showed what medicines were to be used to remove it. But it is much to be lamented, that abundance of sick persons are so ignorant as not to know that it is sometimes as much the part of a skilful physician to do nothing at all, as at others to exhibit the most effectual remedies; whence they not only deprive themselves of the advantages of a fair and honourable procedure, but impute it either to negligence or ignorance; whereas the most illiterate empiric knows how to heap medicine on medicine as well as the most prudent physician, and usually does so in a much greater degree.' Again: 'But when the fermentation neither rises too high nor sinks too low, I leave it in that state without prescribing any medicines,

unless forced to it by the importunity of the patient or his friends, and then I direct only such as may please without prejudicing.' An ancient and eminent Spanish medical writer says: 'There are many cases, as there is a stage in every case, when Nature requires only to be assisted, and not guided and controlled; and it often infers greater skill, as assuredly it demands not rarely greater courage and greater honesty, to desist from interference, than to persevere in accumulating remedies.'

The young practitioner, at this stage of his progress, is also surprised to find that all thinking medical men with whom he is acquainted, hold views similar to what he is now acquiring; that they, like himself, have by experience had their reliance on remedies greatly diminished, their confidence in Nature greatly increased.

Now comes a great and important, because a practical change. As he studies and endeavours to foretell Nature's processes, he finds that these are often checked, thwarted, or entirely changed, by indiscretions of the patient. A broken bone is kept from uniting by occasional motion of the limb, until the efforts of Nature are exhausted: a wound, either by motion of its edges, or the application of irritating substances, is prevented from healing, and changed into an indolent ulcer. Internal ailments are procrastinated, or changed into organic diseases, by similar indiscretions. Then he sees the necessity for watching, protecting, aiding, and guiding Nature's operations. And now he is astonished at the amount of good he can do, often by what appears the most trifling means. Formerly, when he endeavoured to cure disease entirely by the rules of art, he was disappointed and disheartened, because he was attempting to do what was impossible; but, when he is thus led to make Nature's healing powers the foundation of his medical practice, he finds that in every case he can be of the utmost service, and instead of being disheartened and disgusted, he is every day

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more and more convinced, that, as a handmaid of Nature, his is indeed a noble science.

I shall now endeavour to point out what is the province of the Medical Art, and what are its powers in the cure of disease.

There are many diseases in which the natural tendency is towards a cure, and where, in all probability, Nature will be sufficient to effect it. But it does not follow that, in such, Medical Science is of no use. On the contrary, it is in them that the judicious physician often has his greatest triumphs, not perhaps in the eyes of the public, but in his own estimation.

Nature's processes are easily thwarted, and often are so by the ignorance of the patient. For instance, you can easily understand how a broken leg may be prevented from healing, and at last rendered incurable, by motion of the broken ends of the bone. Here Art steps in, puts on splints, and renders motion impossible. Rest, at least to the greatest possible extent, is quite as necessary to the healing of an inflamed lung; but the ignorance of the patient prevents his knowing that, every time he speaks, every movement of a muscle more or less excites the circulation in the diseased organ. Here the physician forbids speaking, and confines the patient to bed, or, what is better, prescribes tartar emetic, which probably does good, chiefly because it renders the patient unwilling either to speak or move, and so enables Nature to perform her work. A cold will in general run its course favourably; but we know that, during its progress, the slightest exposure, such as would be harmless at other times, brings on a new congestion, and renders it necessary that the healing process should begin again. The physician gives such advice, or prescribes such treatment, as will prevent such exposure, and the patient is cured.

I have selected for illustration diseases that are familiar, but the same is true in a great many severe and

often fatal disorders, such as fevers and inflammations of important organs,—namely, that their natural course is towards a favourable termination; but this is often retarded or prevented by ignorance or indiscretion of the patient. And medical knowledge can do much to prevent this, and so, to an important extent, contribute towards a cure.

But this is not what people in general consider as curing a disease. They imagine that the doctor should at once, by means of his art, remove or diminish the disordered actions going on. Merely giving Nature fair play, or removing obstacles, is, in their eyes, no cure at all. The common idea is, that for every malady there is a particular remedy or kind of treatment, which will, without regard to Nature's operations, effect a cure, and that medical skill consists in knowing the fitting remedy for each disease. Now, this might be all very well if it were only true; but it is not, as there are scarcely any diseases, perhaps none, that can be cured in this way.

Some will say that I am lowering the value of Medical Science; but it is not so. There is too much that is good and valuable in Medicine for it to be injured by the truth. It does not take from the credit of a farmer, that he cannot make his crops to ripen in winter. It is the seasons that must make his grain to spring, to grow, to ripen; yet we know how much a skilful farmer can do to aid and foster Nature. We do not say a mariner is unskilful because he cannot lay the storm. At one time, in his ignorance, this was what he attempted to do. He vowed pounds of candle to the Virgin, or to the Saints; and often he thought he had in this way cured the storm, and saved his vessel. But now enlightenment has dispelled such notions. The seaman knows that he must trust to the natural buoyancy of his vessel, and to the known fact, that, if he can only carry his ship through it, the storm will run its course, and come to an end. He does not, however, fold his arms, and say, be-

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cause he cannot lay the wind, there is nothing for him to do.

A ship is sailing smoothly on. All on board are at ease. The captain is seen to look anxiously in a particular direction. He takes the telescope and looks again, and then firmly gives a few orders. Immediately all is bustle—everything is cleared—the sails are furled—the guns are firmly secured—the pumps are made ready for use. The passengers, perhaps some of the sailors too, look with astonishment at all this; they see no cause for so much preparation,—probably they think it done merely to increase the captain's importance. By-and-bye, however, they see a darkness in the horizon rapidly increasing, and soon all are aware that a storm is approaching. Down it comes with a crash that would have carried every mast overboard, had the sails not been closely furled. The vessel is on her beam ends; but everything is firmly secured, and she soon rights again. All is now consternation; even the sailors are alarmed. There is only one that is calm, standing beside the helm; he gives his orders composedly. One instant of confusion or wavering on his part—the ship gets broadside to the storm, and all is lost; but he holds the rudder, and she rides nobly on. Some of the passengers now are vexed because he looks so calm, and is doing so little. Some bustle now, throwing the cargo overboard, anything like action, would be a comfort to them. But he merely stands with the helm in his hand, and they think him indifferent to the danger. Suddenly a mast goes overboard, the vessel lurches, and will not steer. A word is said, and in an instant every cord is cut; the mast is clear, and she rights again. A whisper goes round, 'A leak is sprung.' Still he is calm. The pumps are manned, and for many a day and night these pumps are wrought. It takes every hand and every effort to keep the water down; the slightest confusion or insubordination, and the vessel sinks. But the

kindness, the calmness, the decision of the captain, keeps every man to his duty. Every one now is aware of his value, there is no grumbling now. With great labour and much anxiety, the ship works on her way, and at last reaches her destined port, much shattered it is true, but the valuable cargo saved; and a few weeks in dock will put her all to rights.

Was there here no value in nautical skill? And yet the captain could not cure the storm.

Imagine that you are a shipowner, and want a captain to command your vessel. A person applies for the situation who tells you he has never studied navigation, and has had no experience, that all that kind of thing is old-fashioned and unnecessary, that the only source of danger in storms is the use of too much tar, and the sailors not knowing the way to lay the wind. But he would use tar in infinitesimal doses of the thirtieth dilution, and lay the wind by the infallible and philosophical maxim, 'Similia similibus curantur,' that is, by whistling or blowing in the same direction; after which, if you wait long enough, the wind is sure to cease.

Are you likely to employ such a person? Yet this is exactly Homoeopathy.

Another comes. He will take charge of the ship; he is not afraid of any storm, for all that is necessary for the safety of the vessel is to wash it well with cold water, outside and in, five or six times a-day, to keep the sails always wet, and to wrap a wet sheet round the mast. That is Hydropathy.

As an instance of what may sometimes be done by attention to little things, I may mention a case. A child had been labouring under bronchitis. The disease having reached the latter stage, there was great difficulty in breathing through the accumulation of mucus. In such a case it was of the utmost importance that the air breathed should be pure, so that as little as possible might

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serve to support life. One evening I called, and found in a small apartment, not four yards square, with a large fire, ten persons assembled to see the poor thing die. The child was panting for breath, and appeared to have not many minutes to live. I cleared the house of people, opened the door and window, and sat for two hours to prevent the room being again filled. The immediate relief to the poor child was marvellous. I am convinced I saved that child's life; but I got no credit. How different it would have been had I at the same time given it a homoeopathic globule.

I do not mean to teach that all that Medical Art can do, is to watch and guide or modify Nature's processes. Sometimes, although seldomer than people think, much good may be done by Science changing entirely Nature's operations. A thorn in the flesh would ultimately be cured by Nature. It would heal out; but this would be a painful, a tedious, perhaps a dangerous process. The surgeon extracts the thorn; the case is now a simple wound that heals in a day. A limb is injured, so that its only way of healing would be by mortification and suppuration. The surgeon amputates the limb, and so prevents the great risk of death during the mortifying and suppurating process. Something injurious is swallowed, which, by exciting a bowel complaint, would ultimately be carried off, but with much distress, perhaps with danger. The physician prescribes an emetic before the offending matter has left the stomach; it is thrown off, and all is right. A poison is in the blood; but Nature's powers are dormant. The physician gives a medicine that rouses Nature's energies, and both poisons are thrown off together. A person exposed to cold is seized with shivering and difficulty of breathing,—there is congestion of the lungs; if this continue, lymph will escape from the congested vessels, requiring inflammation of the lungs for its removal. The physician, by bleeding or some other

means, relieves the congestion, checking in the bud what would have been a very dangerous illness.

In many ways of this kind the medical man may interfere with the best effects, without regard, and often in opposition to Nature. The experienced physician, however, will always be cautious in interfering with or checking Nature's efforts; but, when he does so, he will do it decidedly and with effect. I know of nothing so hurtful as a timid, hesitating, undecided active treatment. It is the duty of the medical attendant, after full deliberation, to decide whether he will leave the case, more or less, to Nature, or if he can do better by active measures. This decision is often the most important and difficult part of the physician's duty; need I say that, in it, he should be uninfluenced by the prejudices of the patient or his friends: yet how difficult it is not to be swayed by the knowledge that, if he adopt an active treatment, he will give much more satisfaction to the patient and those about him.

There is a period in most severe diseases, when the situation of the physician is often a very painful one, when, in spite of every effort, the patient seems hurrying on to the grave, with little hope of respite. The friends are most anxious for something to be done; and yet, perhaps, the only remaining chance of life is by leaving undisturbed the wonderful curative powers of Nature, which are often effectual in snatching from the very jaws of death. It is a great mistake, in such a case, to suppose that when man has ceased his puny efforts, the patient is left unaided, seeing that, till the last moment, curative measures are in operation a thousand times more efficacious than all the resources of art.

Allow me, then, to impress upon you that there is often, very often, greater skill and wisdom, and far more courage, in refraining from interference than in active treatment.

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There is another way in which medical skill is useful, but in which it is often thwarted by the impatience of the patient, to wit, by letting the disease alone, but by rousing and strengthening the weak or exhausted healing powers. To illustrate my meaning, I shall relate a case.

A poor man had long been unfitted for his work by ulcers in the legs. The case had been simple at first; but the cure had been prevented by want of care, till it had become chronic, Nature's efforts having been thoroughly exhausted. He had been at many doctors, and had tried all the Holloway's Ointments and other infallible remedies that could be had. When he applied to me, I found that, for a long time, he had been half-starved; and I was convinced that, till there was more strength in the system, it would be impossible to excite any healing action. With great difficulty, I got for him a larger allowance from the Poor's funds, and some of his friends assisted him. To his surprise and delight, I insisted on his being idle, and on his being fed with beefsteaks and porter. As soon as the system got into good condition, the ulcers began to heal. The progress was slow, and I had many a battle to fight to keep up such treatment; but it was ultimately completed. The ulcers healed, and the poor man was restored and fitted for his work.

I may as well relate the rest of the story, although it does not bear on the present point. Of course, I was pleased and proud of what I considered a triumph of rational Medicine. Half a year afterwards, passing the door one evening, I stepped in to ask how he was getting on. He was well and hearty. Expecting some thanks or praise, I led the way by looking at the legs, and then, expressing my satisfaction, I said that I deserved some credit for the cure. 'Weel, doctor, I maun tell you what it was that cured my legs, and it will maybe be usefu' to ither folk. It was just moose wabs (Anglice, spiders' webs). Jenny Donald advised me to try them, and they cured

my legs at ance.' 'But don't you think the beefsteaks and the porter had anything to do with the cure?' 'Ou! the steaks and porter were grand for the stomach.'

Work on, noble science! Shower down your blessings on ignorance and prejudice; but be assured that moose wabs and homœopathic pills will get all the credit.

Another illustration of this treatment is that of consumption by cod liver oil. There can be no question of the benefit of this treatment. But medical men know that it is not by any curative property, or by purifying the blood, as it is called, but by nourishing the system, and so strengthening the curative powers of Nature. It is fortunate that this nourishing food is contained in bottles, and is rather nasty, and so it assumes the form of a drug. Had it evidently been merely food, it probably, with all its merits, would never have obtained so much of public confidence.

Sometimes the curative operations of Nature are themselves the source of danger. These operations are generally and necessarily accompanied by pain and swelling, which unfits the organ for its functions, and, if the organ be a vital one, this may cause death. Hence it may be necessary, although we know that these operations are leading towards a cure, to endeavour to moderate or modify them, and we can often do so with good effect.

There is a class of diseases regarding which I have as yet said nothing; in which Nature appears to make no effort to effect a cure, but which go on naturally to a fatal termination. Such diseases are very few in number. I am afraid that in them Art is quite as powerless as Nature. It may be different when the disorder can be removed by the surgeon's knife, before the blood has become contaminated; but, except in this way, I know of no complaint in which Nature makes no curative effort that can be removed by Art. For such, however, we have an immense number of infallible remedies, which, I

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am sorry to say, are wonderfully successful—in putting money into the pockets of quacks.

It is some compensation for the many difficulties and disappointments of medical practice, that we can so often soothe pain, and procure to the weary sufferer, 'kind Nature's sweet restorer, balmy sleep.' It is one of the evil results of the false notions of Medicine that prevail, that they prevent science from getting so much credit as it ought for this part of its duty. How often it happens, that, whilst a medical man gives immediate relief from suffering, perhaps substitutes refreshing slumber for 'tossings to and fro till the dawning of the day,' this great benefit is entirely overlooked, because a cure is not effected in the time and in the way that those ignorant of the limited power of medicine expect.

Even when a cure is not performed, it is often a great blessing to the patient, and a comfort to his friends, that we can relieve the sufferer and smooth the path to the grave.

We may reasonably hope that this power is yet capable of great improvement. In our own day we have had the discovery of chloroform, the safest, most powerful, and most manageable of sedative or anæsthetic agents. This discovery is a boon for which suffering humanity owes a debt of gratitude to science. How strange, that whilst the inventor of destructive implements of war is loaded with wealth and honour, such benefactors of mankind as the discoverers of vaccination and the power of producing anæsthesia are rewarded only by posthumous fame.

There is another province of Medical Science which is yet in its infancy, but which, I hope, will ere long attain a stalwart growth,—namely, that of preventing disease. Of late years, rapid progress has been made in public hygiene, and much good has been the result. But I do not see why we should not have private hygiene as well, or why, as the State now employs medical men to devise means for preserving health, private individuals and

families should not do the same. There are many circumstances in which such advice would be useful: in the building of houses, in regard to situation, drainage, and ventilation—in dietary, clothing, habits, management of infants, and in many other things, the guidance of medical men would be of the utmost advantage.

The present way of paying medical men is a great bar to any improvement of this branch of Medicine. Our celestial neighbours are far more sensible than we are in this respect. They look upon it as one of the absurdities of the English barbarians, that they pay their doctors for keeping them ill, instead of, as they do, paying the doctor whilst well, and stopping the payment whenever they are sick. Without quite adopting this system, which, however, has good sense to recommend it, we might with great advantage borrow at least a leaf from their book. If families or individuals were to arrange with their medical attendants to pay them a fixed sum annually, I have no doubt it would lead to the family physician being often consulted in regard to the preservation of health, and this, again, would lead to increased study of this subject by medical men; and the result would be a great diminution of disease and suffering.

I hope to see the day when a physician's talents will be judged of, not so much by the number or rapidity of his cures, as by the rarity of illness among his employers.

From what I have said, I hope you will now be able to understand what is a puzzle to many, namely, the success of quackery.

In our day, we have had a succession of highly popular quack medicines for the cure of every ill to which flesh is heir;—Solomon's Balm of Gilead; Morrison's, Parr's, and Holloway's Pills; besides a multitude of infallible cures for particular incurable diseases. We have also had our scientific quackeries, Homœopathy, Hydropathy, and Mesmerism.

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It was the same in former times. Our grandfathers had the Elixir of Life, Berkely's Tar Water, Perkins' Metallic Tractors, St John Long, and a host of others. Each of these had its day, and was wonderfully successful in drawing money. But, although infallible, they only had their day. Cancers continued to be incurable, people obstinately continued to die, and each quackery, after a few years of wonderful success, was succeeded by some other.

But what is the secret of even the temporary success of nostrums which have uniformly proved to be totally worthless? It is this, that people are so entirely ignorant of the healing powers of Nature. All of these quackeries gained their popularity by appealing to their success. The patient took the medicine; he got better, and it got the credit. But it is a fact, that if you take every kind of disease, trifling as well as severe, at least ninety-nine out of every hundred would get better by the power of Nature alone, even in spite of injudicious treatment. So, if by puffing advertisements, or the recommendation of credulous people, the hundred patients are prevailed upon to take the remedy; if ninety-nine of them get better, which they are sure to do; and if all of these recoveries are ascribed to the medicine, which they are sure to be, you can easily understand what an amount of popularity will ensue, more especially if the quackery be something new. For now, as of old, there are many who, like the Athenians, 'spend their time in nothing else but either to tell or to hear some new thing.'

But to find the truth, I think we have only to study the past. We find hundreds of quackeries which have lived their brief day, and been as highly extolled as any of those of the present time, and yet they are now forgotten, and their dupes laughed at; and so it will be with their successors.

It may be, that some good is done by amusing the

patient, whilst Nature cures the disease; but how much more like reasonable and intelligent beings would it be to be amused by truth alone, which, if rightly understood, is far more capable of inspiring hope and confidence than all the quackeries that have ever existed. These observations are quite as applicable to quackery within the profession. I admit that medical men do (or rather I should say did, for it is rarely done now),—I say they did sometimes give medicines, merely to please the patient, or to inspire him with confidence. But I hope the time approaches, when all quackery, within as well as without the profession, will be banished by the increased intelligence of the public, and when a blind superstitious trust in every humbug will be succeeded by an enlightened confidence in the wonderful power of Nature, and in the aid that true Science, which must always have Nature for its foundation, is capable of bestowing.

Allow me, before concluding, to say a few words to prevent misapprehension of my meaning.

In the first place, I beg you to understand that the views I have endeavoured to enforce are no mere whim or hobby of my own, but are held by the medical profession in general. In a former part of this lecture, I made some quotations which showed that such views were held by the greatest and best of former days. I will now quote to you a passage from a modern writer.

Mr Hilton, of London, in a lecture lately published in the *Lancet*, says: 'It would be well, I think, if the surgeon would inscribe upon his memory, as the first professional thought which should accompany him in the course of his daily occupation, the physiological truth that Nature has a constant tendency to repair the injuries to which she may have been subjected, whether these injuries be the result of fatigue, or exhaustion, or inflammation, or of accident; thus presenting to the consideration of the physician or surgeon a constantly recurring and

It is only in the army and navy that the necessary machinery for the purpose exists at present. Thirty years ago, no use was made, to any extent, of the returns of the medical officers respecting the

sound principle to guide him in his practice. I feel confident that, however high may be our acquirements, however deep and minute our researches into the phenomena of disease, however great our experience, each and every one of us, if candid and truthful, will admit that he has not the power of directly adding one single atom to the living tissue. Under the most favourable circumstances, all that any of us can accomplish in this direction is to give rest to the parts, and enable Nature, through her own efforts, steadily to pursue her inherited destiny: whilst we, as Nature's willing servants, act in the hope that by the use of appropriate mechanical applications, aided, if necessary, by soothing medicines and by the use of properly adapted diet, we may facilitate her efforts to repair the injury she may have sustained.

In the second place, I beg you will not misapprehend my meaning by supposing that it has been my object to depreciate Medical Science. I have endeavoured to impart a just idea of the powers of Nature. But you must not imagine, because one lecture will not enable me also to explain the powers of Art, that there are no such powers. Did your time and patience permit, I could easily show, that, whilst Nature must perform the chief part, yet it may be greatly assisted, and obstructions to its operations removed by judicious treatment. This assistance will always be most effectually rendered by those having the greatest knowledge of, and the greatest trust in, Nature's operations. And I beseech of you to remember, otherwise my lecture may be productive of much harm instead of good, that it is one thing for a medical man to leave a case to Nature, and a very different thing for a patient to do so. In the one case, it is to leave the disease to Nature, watched, protected, and guided by knowledge; in the other, it is to leave it to Nature, opposed and thwarted by ignorance. My object has been, not to encourage you blindly to trust in Nature,

but to teach you to have patience, forbearance, and confidence, when your medical attendant, with due deliberation, thinks it his duty to do so.

In the third place, I beg to state my reasons for bringing this subject before you. This I prefer doing in the words of Sir John Forbes:—

'The following are a few of the many ways in which the ignorance of the public, in regard to the several parts of Medicine which they are competent to understand, influences injuriously the conduct of physicians:—

'1. Ignorance of the natural course and progress of diseases which are essentially slow and not to be altered by any artificial means, often leads the friends of the patient to be urgent with the medical attendant to employ more powerful measures, or at least to change the means used, or to give more frequent or more powerful doses.

'2. Ignorance of the power of Nature to cure diseases, and an undue estimate of the power of medicines to do so, sometimes almost compel practitioners to prescribe remedies when they are either useless or injurious.

'3. The same ignorance not seldom occasions dissatisfaction with, and loss of confidence in, those practitioners who, from conscientious motives, and on the justest grounds of art, refrain from having recourse to measures of undue activity, or from prescribing medicines unnecessarily, and leads to the countenance and employment of men who have obtained the reputation of greater activity and boldness, through their very ignorance of the true character and requirements of their art.

'4. It is the same state of mind that leads the public generally to give ear to the most ridiculous promises of charlatans; also to run after the professors and practisers of doctrines utterly absurd and useless, as in the instance of Homoeopathy, or dangerous, except in the proper cases, as in the instance of Hydropathy.

'It cannot be doubted that juster views of the nature

It is only in the army and navy that the necessary machinery for the purpose exists at present. Thirty years ago, no use was made, to any extent, of the returns of the medical officers respecting the

of Medical Science and of Medical Art, if once prevalent among the lay public who are well informed, will, like all other knowledge, eventually descend to those who are not so; and thus the progress of rational medicine will be facilitated, and the hands of those professors strengthened who have the courage to advocate and practise their art conscientiously, however opposed to vulgar prepossessions and prejudices.

'When laid open in its native truth and simplicity, Medicine will be found, like other arts and sciences, to possess nothing that is very mysterious or difficult of comprehension, nor anything that should prevent its principles at least from becoming one of the subjects of ordinary study with men who have received such an education as enables them, as amateurs, to derive profit and enjoyment from analogous studies, such as Chemistry, Physics, Geology, and Natural History in all its branches. To such men, Anatomy and Physiology, and the principles of Medical Science and of the Medical Art, will be found to yield instruction and amusement of the highest and best kind, to say nothing of the great advantage such knowledge must be to themselves and friends, not only in regard to the preservation of their health, but in regard also to their conduct when afflicted with disease.

'Even a moderate amount of knowledge of the general nature of diseases, and of the mode of operation and powers of the Medical Art, will make a man a better patient; make him more content with the treatment prescribed, be it energetic or inert; and make him repose greater confidence in his physician.'

MURRAY AND GIBB, PRINTERS, EDINBURGH.

THE STATISTICS OF DISEASE AMONG THE PAUPER POPULATION OF ENGLAND AND WALES.

The following Memorial was addressed by the Epidemiological Society to the Right Hon. C. P. Villiers, M.P., President of the Poor-Law Board, and Chairman of the Select Committee of the House of Commons to inquire into the operation of the Laws relating to the Poor, on the appointment of the Committee in 1861.

THE Epidemiological Society was instituted in 1851 for the investigation of epidemic diseases, with the special view of examining into the causes which favour their development and spread, and into the means best fitted for their mitigation and prevention.

The successful prosecution of such inquiries rests mainly on the obtainment of accurate data respecting the rise and course of these maladies in different localities and districts; and respecting the numbers of persons attacked, and of the deaths among these persons, on a sufficiently comprehensive scale.

The admirable returns of the Registrar-General furnish authentic information as to the number of deaths from different classes of disease; but they afford no materials for ascertaining the number of persons attacked. This has been long felt by all epidemiological inquirers to be a desideratum, which it would be of the utmost consequence to supply. The statistics of disease are not less necessary than the statistics of mortality. It has been estimated that, taking one disease with another, there are between twenty and thirty cases of sickness to every death; but, as yet, we do not possess reliable data to enable us to determine the truth on this point, which it is obviously of public importance to ascertain among our labouring population in civil life.

It is only in the army and navy that the necessary machinery for the purpose exists at present. Thirty years ago, no use was made, to any extent, of the returns of the medical officers respecting the

amount of sickness and death in either the military or naval service. It had been long surmised that the average rates were much higher at all times than they ought to be; and it was known that great loss of life every now and then arose from epidemic outbreaks in barracks and on board ships of war. But the actual facts could never of course be accurately ascertained, until the medical returns were systematically examined and digested; and the only sure grounds for the adoption of prophylactic and preventive measures could thus be satisfactorily made out. Almost all the salutary changes which have been effected in the health of both services may be traced to the information obtained in this manner.

What has been done with such good results for the army and the navy can, in the opinion of the Society, be effected in the case of the pauper population of the country, and would be productive of equally beneficial effects.

There are more than 3,000 medical officers, under the general superintendence of the Poor-Law Board, for the care of the 14,963 parishes and unions of England and Wales. The number of cases of sickness among the out-door and workhouse poor must, at the very lowest estimate, largely exceed a million in the course of the year; and, as parochial medical officers are required to make a return of every case, there is evidently a mass of authentic statistics of disease actually existing in the country, and capable of affording the most valuable information respecting public hygiene. Hitherto, these returns have only been submitted to the local Boards of Guardians: after being seen by these functionaries, no further use is made of them.

It requires but the collecting and arranging of these materials on a proper plan to render them most instructive registers upon a large scale, which, at the end of the year, would form the basis for an Annual Report, illustrative of the health of that very class of the community among which the greatest amount of preventable disease prevails.

The Epidemiological Society, whose attention has been long earnestly applied to the consideration of the subject, have proposed a simple scheme, by which the desired information could be easily, in their opinion, obtained by the Poor-Law Board, through the voluntary co-operation of the parochial medical officers, with no other expense than that required for the regular tabulation of the materials and the preparing of the Annual Report.

The Society will feel honoured by being afforded an opportunity of bringing the details of the scheme, in its various bearings, under the attention of the Honourable Committee.

(Signed)

B. G. BADINGTON, *President*.
J. O. McWILLIAM, *Hon. Sec.*

March 8th, 1861.

The Society, having received an assurance from Mr. Villiers that their Memorial shall be brought under the notice of the Select Committee, have prepared the following brief statement, more fully to explain the grounds on which it is based.

At present, there are no means of determining what are the most frequent maladies existing from time to time among the labouring classes in our towns, villages, and rural districts; nor when, or where epidemics are most prevalent, or vary much in frequency and severity in different parts of the country; nor do we know, as we ought to know, the influences of age, sex, condition, and occupation on their development and fatality. Neither can we tell what are the most frequent chronic ailments or incurable infirmities among the poor at different periods of life, which occasion permanent disablement, and life-long chargeability upon the parochial rates, with but one exception, we believe, viz., insanity and idiocy.* That the amount of sickness from Fever, for example, is annually very large, the number of registered deaths abundantly testifies. On the average of the last twenty years, this number exceeds 17,000—a mortality which probably represents upwards of 170,000 persons attacked in the course of the twelve months. The victims, too, are generally among the early adults and the middle-aged, the parents often of young families; hence so many of the children in workhouses are the offspring of persons who have either died from the disease, or who, if they recovered, were reduced to beggary in consequence. The orphans and widows of working men, prematurely cut off in this way, form a considerable proportion of the permanent recipients of parochial aid in every part of the kingdom. The sad prevalence of Small-pox in many districts, from the neglect of vaccination, often serves to swell the number. How much the prevalence and fatality of Fever and of Small-pox may be reduced by due attention to well-known sanitary and hygienic regulations, it is unnecessary in the present day to illustrate. Then, again, the great excess of mortality among the children—mainly owing to the circumstance of the other eruptive fevers, and of diseases of the bowels, lungs, etc., being aggravated fourfold by domestic causes of insalubrity—attests the enormous amount of illness in infantile

* On the 1st of January, 1862, the number of insane and idiot paupers was 34,271. Of this number, 18,318 were in country or borough lunatic asylums; 1,193 in registered hospitals or licensed houses; 8,603 in union or parish workhouses; 983 in lodgings or boarded out; and 5,172 resided with relatives.

and early life among the poor. There are, moreover, various groups of disease which often cause much suffering and distress, but which very seldom prove fatal, and are therefore scarcely indicated in the Registrar-General's returns, such as maladies of the skin and of the eyes—a not unfrequent cause of protracted disablement; and as both these groups are largely dependent on unwholesomeness of the dwellings, poverty or unsuitableness of diet, neglect of personal cleanliness, etc., it is obvious that they might be easily prevented to a great extent.

Whatever will diminish the amount of sickness among the working classes, must correspondingly diminish the amount of the parochial taxes; and *vice versa*. That the first of these desirable objects is within our reach admits of no doubt; the results of the Common Lodging-House Act, and the low rates of sickness and death in most public institutions now, as compared with what they used to be, are sufficient proof on this head. Nor are instances wanting in several parts of the country, where a not inconsiderable abatement of the parish charges has recently been effected, by the improved health of the districts. If it be true, as has been stated on respectable authority, that three-fourths of all the actual paupers in the kingdom have become paupers directly or indirectly, by disease, the large extent of the field for the labour of enlightened beneficence is strikingly apparent.

It is scarcely possible to over-estimate the benefits to the whole community which would accrue if the attention of parochial boards and other local authorities, as well as of influential residents in a district, were regularly and systematically drawn to the current state of the general health, and to the prevalence or otherwise of epidemic disease among their out-door poor, and also to the hygienic condition of the inmates of their workhouse. In no way could this be so easily or so effectually done as through the returns—were these duly tabulated and arranged—of the medical officers who attend upon the poor in sickness; for none know so well as these gentlemen the evils which sap the health of the labourer, and which so often issue in pauperism and mendicancy. All agree that much of the illness and mortality in humble life is due to circumstances not inevitable or inseparable from mere poverty, but which are superadded to it either from ignorance or wilful neglect, or from causes over which the poor themselves have no control, however capable the evils may be of easy correction or removal.

There are in England and Wales upwards of seven hundred workhouses, great and small, and six district schools, where pauper children are lodged and fed. The total number of inmates, of recent years, has averaged about 140,000 persons, of whom 50,000 are under sixteen years of age. In the infirmaries of workhouses, there are usually—besides the ordinary sick wards, the infirm wards for aged men and women, and the nurseries for infants and young children—fever wards, and infectious and foul wards; a fact which alone indicates the prevalence of these maladies

throughout the country among the poor. The general death-rate in our workhouses is not known; but that it is very high may be inferred from the fact that, in some years, one in every eleven deaths in London occurs in the metropolitan workhouses. In 1861, the number was 5,755; while the total number in all the civil hospitals of the metropolis was only 3,723. "The death of so many persons in the large workhouses demands inquiry," remarked the Registrar-General.

The sanitary condition and arrangements of the workhouses in different parts of the country are reputed to be far from satisfactory; the occasional severe outbreaks of epidemic disease, and the inveteracy of various chronic maladies among the inmates, can only be accounted for in this way. In a late quarterly return of the Registrar-General, the large mortality which occurred in a provincial workhouse was stated to be due "to the crowded state of the house, and the defective drainage of the premises."

The want of reliable information as to the current amount of sickness and death among the out-door and in-door poor has been so much felt, that several efforts have recently been made to obtain the desiderated data in separate districts and localities. The metropolitan medical officers of health attach the utmost value to this subject in the prosecution of their inquiries, and have laboured hard to establish regular statistical returns of disease occurring in the metropolis. The Sanitary Association of Manchester and Salford has also applied itself with great zeal to the same object in respect of their population. At the International Statistical Congress, held in 1860, the importance of the accurate registration of diseases and of their results in hospitals throughout the kingdom was strongly urged in the Public Health Section, and steps were then taken to carry the suggestion into effect as regards these institutions. Such a measure is equally, if not still more, needed in respect of workhouse infirmaries. Among various other matters of great interest to the public health, on which useful information might be obtained from this source, the discovery of the amount of incurable blindness, deafness, and deformity among the poor may be mentioned. Every consideration thus shows how inestimable would be the value of a general and connected system of disease-registration among the pauper population over the entire country.

The scheme proposed by the Society for this end is, that there should be a monthly return of the number of cases of illness treated by each parochial medical officer, and of the number of deaths among these cases,—arranged upon such a plan as that in the annexed Schedule, in which a few of the supposed details are entered, and the general results given, to indicate the mode of filling it up. But the exact form best suited for the purpose will doubtless need much consideration. The great object sought for is to turn to useful account the statistical records of disease now required to be made by the medical officer, but which, hitherto,

run, in instance and weight. By the monthly returns being regularly transmitted to the Poor-Law Board, and the Medical Department of the Privy Council, the current state of the public health over the country would be, to a great extent, ascertained at short intervals of time, and the springing up and threatened prevalence of dangerous zymotic diseases would be discovered early, and before the heaven had leavened the whole mass. What is now being done by the Board of Trade for Meteorological inquiries might, with no less advantage to the whole community, be done by another government department for Hygienic research. An Annual Report, founded on these monthly returns and embodying their chief facts and results, on the same plan as the annual reports of the health of the army and of the navy, could not fail to be of great scientific value. It would, moreover, be directly and immediately useful in various ways. The labours of local boards, for instance, would be aided and guided by the authentic information made accessible, and the results of these labours would become generally known. Thus the good example of one place would stimulate inquiry in others; measures and appliances, found to be successful, would be copied elsewhere; and, thus, the local experience would be made profitable to the whole community. No other country in the world possesses such facilities for the attainment of the object in view as England, for no other country has such a well organised system of pauper relief; and, when it is considered that nearly six millions sterling are annually expended for this purpose, it is but right that the working of the system should subserve, as far as practicable, the promotion of science, and the advancement of the general good.

GAVIN MILBOY, } *Hon. Secs.*
J. N. RADCLIFFE, }

April 1863.

Parish or Union of *Population in 1861. Males* *; Females*

MONTHLY RETURN OF SICKNESS AND MORTALITY AMONG OUT-DOOR* PAUPERS, ETC.											
1904. JANUARY.	No. of Cases from last month		No. of Among These Cases		DISEASES.	No. of New Cases.		No. of Among These Cases.		REMARKS ILLUSTRATIVE OF 1. Locality. 2. Dwelling. 3. Occupation. 4. Food, Drink, etc.	
	Males.	Females.	Males.	Females.	Scrofulous Disease. Phthisis.	Males.	Females.	Males.	Females.		
100	115	3	3	3		100	100	41	17		
217		9									
9	11	1	1	1	Disease of the Respiratory Organs. Nervous System.	44	45	11	10	6	6
8	10				Disease of the Skin. Eyes.	17	14	3	4		
9	4					10	13	4	6		
					Alopecia. Curly.						
					Alopecia. Premature.						

Total No. of Cases from last year. Total No. of Paupers. 27

Total No. of Cases treated, 1207. Total No. of Deaths, 47

* A similar monthly return for the in-door or workhouse paupers would be required.

EPIDEMIOLOGICAL SOCIETY.

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RESULTS

SANITARY IMPROVEMENT,

Illustrated by

THE OPERATION OF THE METROPOLITAN SOCIETIES FOR
IMPROVING THE DWELLINGS OF THE INDUSTRIOUS
CLASSES, THE WORKING OF THE COMMON
LODGING-HOUSES ACT, ETC.

BY

SOUTHWOOD SMITH, M.D.

FIFTEENTH THOUSAND.

LONDON:

CHARLES KNIGHT, 90, FLEET STREET,
Publisher (by Appointment) to the General Board of Health, and the Poor Law Board; and
J. CASSELL, LUDGATE HILL.

1854.

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RESULTS
SANITARY IMPROVEMENT.

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RESULTS

42

SANITARY IMPROVEMENT.

For some years past there has been in the public mind a growing conviction that the physical condition of the labouring classes is mainly dependent on the state of their dwellings. The conviction has become equally strong, that whatever improvement is effected in the physical condition of the people is conducive to a corresponding elevation of their intellectual, moral, and social state.

It is generally known in Europe that this conviction has taken in England a practical direction. Investigations into the sanitary condition of populous districts in general, and of the houses occupied by the indigent classes in particular, have been made partly by private individuals, and partly by Commissioners under the Crown. On the evidence collected under these inquiries, rarely exceeded in extent and value, the Legislature has passed a general measure called the "Public Health Act," granting to local authorities the powers requisite for constructing and maintaining permanent works of sanitary improvement, while a distinct department of government, under the name of the General Board of Health, has been created to administer this Act. Still the acceptance of the Public Health Act is permissive, not compulsory; and therefore the actual extension of sanitary improvement is wholly dependent on the state of knowledge of local authorities, and of ratepayers by whom those authorities are elected.

The evidence which formed the basis of this legislation had distinctly traced to the condition of the houses of the labouring classes, the main causes of the excessive sickness and mortality disclosed by the returns of the Registrar-General;—had distinctly traced to

certain definite conditions in and about these wretched abodes the true sources of those constantly-recurring epidemics, which swept away one-half of the children born while yet in childhood, destroyed by fever the heads of families in the prime of life, and deprived the whole of this class of the population of more than one-third of the natural term of existence.

But the evidence was not so apparent that this state of things is no necessary and inevitable condition of poverty. While the consequences of bad sanitary conditions were demonstrated, there were presented no very conclusive facts to prove the power of good sanitary conditions to secure to the working man and his offspring the like measure of health and life as is possessed by the wealthier classes. There was, indeed, the strongest conviction on the minds of those who had paid attention to the subject that evidence to this effect was obtainable, and they felt assured that it would be found in the result of residence in houses so constructed as to be fit for human habitation.

It was under this impression that about twelve years ago a few individuals, who had taken the lead in the investigations just referred to, formed themselves into an association for the purpose of putting the truth of their conviction to the test of experiment. Their plan was to erect a large building divided into suites of apartments, capable of accommodating a number of families, and provided with the following sanitary conditions:—

1. The thorough subsoil drainage of the site.
2. The free admission of air and light to every inhabited room.
3. The abolition of the cesspool and the substitution of the water-closet, involving complete house-drainage.
4. An abundant supply of pure water.
5. Means for the immediate removal of all solid house refuse not capable of suspension in water, and of being carried off by water.

The Association did not conceive it possible for any private body to provide houses of this description for the labouring classes generally, but they thought that it might be practicable to erect some healthy and comfortable houses fit for the labourer and artisan, and to offer such improved dwellings at no higher rent than is now paid for inferior and unhealthy houses, and they proposed to erect as many of these as should be found possible.

It also seemed probable that benefit would result from their example; that if it should be found practicable to offer houses well built, well drained, and well supplied with air, water, and light, at no greater charge than is obtained for houses in which no provision whatever is made or attempted, for the supply of any one of these essential requisites of health, cleanliness, and comfort, a public service would be rendered beyond the mere

erection of so many better-constructed houses; and that, especially, it might help to render it no longer easy for the landlord to obtain an amount of rent for badly-built, which ought to suffice for well-built houses, and that it might thus indirectly tend to raise the general standard of accommodation and comfort for all houses of this class.

It was no part of the plan of the Association to attempt to assist the labouring classes by offering them any gift or charity, which, however it may sometimes "bless" the giver, rarely benefits the recipients, but on the contrary tends to injure and corrupt them, by lessening their self-reliance and destroying their self-respect. The proposal of the Association was, that the industrious man should pay the full value for his house; but that for the sum he pays he should possess a salubrious and commodious dwelling, instead of one in which cleanliness, comfort, and health can have no place.

It was found, however, that to acquire the means of erecting a suitable structure for the accomplishment of this object, it would be necessary to obtain exemption from the common law of partnership, without which exemption each member of the Association would have become liable, to the whole extent of his property, for all the debts legally incurred in the undertaking. The necessary capital could only be raised by shares, and without the limitation of this liability it would have been impossible to obtain shareholders. It was only by a Charter from the Crown, or by an Act of Parliament, that the liability in question could be limited to the amount of each shareholder's individual subscription. On submitting their scheme to the government of that day, Sir Robert Peel, then Prime Minister, and Lord Lincoln (now the Duke of Newcastle), the Minister for Public Works, after some consideration, expressed their entire approbation of it, thought it likely to accomplish much good, and advised the granting of the Charter by the Crown.

The Charter is framed on the principle that the object not being money-getting, but philanthropic and national, the profits, after the payment of a moderate rate of interest, instead of going to increase the amount of the dividend, should be applied to the extension of the scheme.

The main provisions of the Charter are the following:—
The limitation of the liability of the shareholder to the amount of his individual subscription.

Power to make calls.

Dividend not to exceed 5*l.* per cent. per annum.

Capital 100,000*l.*, 25,000*l.* of which to be subscribed before commencing works, and 10*l.* per cent. thereon paid up.*

* Shares to the amount of 65,150*l.* had been taken up to the end of March, 1853.

Power to increase the capital with consent of the President of the Board of Trade, and two-third parts in number and value of the shareholders present, at two general meetings especially called for that purpose.

Subsequently a Supplemental Charter was obtained, giving power to establish Branch Associations in the Provincial Districts of England and Wales, and for this purpose to raise a Provincial Capital of One Million sterling, and to apportion the same to different Provincial Districts, the shareholders of each Provincial District being interested in the profit and loss on their own shares only, separately from any other shares of the Association.

Seven years elapsed before these preliminary proceedings, the choice and purchase of the site, and the erection of the first buildings were completed, so that the buildings have been opened for residents only about five years.

The Association took the name of the "Metropolitan Association for Improving the Dwellings of the Industrious Classes,"* and their first buildings, called the "Metropolitan Buildings," are situated in Old Pancras Road, leading from King's Cross to Camden Town, a crowded neighbourhood occupied almost entirely by the working classes.

It is impossible in London, and other populous places, to build houses for the labouring classes in separate cottages, on account of the difficulty of procuring land, and its high price. Some authorities have also expressed an opinion that it is best, even in a sanitary point of view, to construct such houses in flats. It was decided that this first experimental building should consist of five stories.

The objection to so great a height is practically reduced to nothing by the arrangements immediately to be described.

The Metropolitan Buildings (Old Pancras Road) consist of 110 sets of rooms, 20 being sets of two rooms, and 90 of three rooms. Attached to each set of rooms is a scullery provided with a sink, a supply of water at high pressure at the rate of forty gallons per day, and the means of carrying off ashes and other solid refuse through a shaft accessible from the scullery. There is no cesspool on the premises. The water-closet, substituted for the privy, is situated in the scullery, the door of the closet being so hung as, when open, to shut off access to the scullery.

Each living-room is furnished with a range, boiler, and oven. By an extremely small quantity of fuel the oven is capable of baking bread, cooking meat, and any other kind of food, and the boiler contains a quantity of hot water always ready for use.

The ground in front of the building is enclosed by iron rails,

* Offices, 19 Coleman-street, London.

and forms a protected space for the children of the residents, and at the back there is a wash-house, with a drying ground attached for the use of the families.

The sum expended on these buildings amounts to 17,736*l.* 17*s.* 11*d.* The rooms, which average from 14 ft. by 10 ft. 6 in. to 13 ft. by 8 ft., are let from week to week, the rent of each set varies from 3*s.* 6*d.* to 6*s.* 6*d.* per week.

That these rents are moderate will be seen by comparing them with the rents commonly obtained in the metropolis.

In the streets in the neighbourhood of Drury-lane, for example, single rooms let for from 3*s.* to 4*s.* 6*d.* per week. The average rental in Westminster for a single room, not 12 feet square, is 3*s.* per week.

The total rents receivable from the various establishments of the Association since December, 1847, amounts to 14,630*l.* 11*s.* 7*d.*, of which there has been actually received 14,394*l.* 6*s.* 11*d.*, leaving a deficiency from bad debts of only 36*l.* 4*s.* 8*d.* for five years.

The occupants are chiefly the higher class of labourers and artisans. In the Metropolitan Buildings one week's rent is paid in advance. References are taken when tenants apply for rooms, but no other security is required. It is seldom that any set of rooms remains unoccupied longer than a week, and in general there are numerous applicants on the list for any vacant set that may occur.

Besides the Metropolitan Buildings in Pancras Road, the Association has erected another set of Metropolitan Buildings in Albert-street, Mile End New Town, capable of accommodating 60 families, at a cost of 10,297*l.* 4*s.* 10*d.*

They have also purchased 25 houses, situated in Pelham-street and Pleasant-row, Mile End, capable of receiving about 23 families, at a cost of 5,120*l.* 19*s.* 3*d.*; and they have decided on erecting another building in Bermondsey, capable of accommodating 108 families, at a probable cost of from 20,000*l.* to 25,000*l.**

The lodgings for single men in London occupied by labourers and artisans being in general as unhealthy as the houses for families of the same class, it was conceived that the provision of fit accommodation for single lodgers fell within the legitimate province of the Association. Accordingly a lodging-house for single men was erected, capable of accommodating 234 inmates, at a cost of 13,493*l.* 13*s.* 9*d.*, and another capable of accommo-

* This building cannot be proceeded with at present for want of adequate funds, although the ground has been purchased. The Directors have also recently obtained possession of a building in course of erection in New Street, Golden Square, in the parish of St. James, which will accommodate 64 families.

dating about 128 inmates, was purchased by the Society for 1,422*l.* 7*s.* 7*d.*, being leasehold,* at a heavy ground-rent.

Four Branch Associations have been affiliated with the parent institution, namely, at Brighton, Dudley, Newcastle, and Ramsgate.

Such are the means which the Association were enabled to acquire for making the experiment on which they had decided.

Before stating the extent to which the object of the undertaking has been fulfilled, it may be desirable to present the financial results.

The following table will show at one view the cost of the various establishments for families, and the remuneration they have afforded on the outlay during the past year:—

	Metropolitan Buildings, Old Paneras Road, 116 families.	Albert-street, 60 families.	Peckham-street and Pleasant-row, 23 families.	Total.	Return on the outlay, per cent. March, 1853.
	<i>£.</i> <i>s.</i> <i>d.</i>	<i>£.</i> <i>s.</i> <i>d.</i>	<i>£.</i> <i>s.</i> <i>d.</i>	<i>£.</i> <i>s.</i> <i>d.</i>	
Cost	17,796 17 11	10,297 4 10	5,120 19 3	33,155 2 0	
Net rents for the year end- ing March, 1853.	833 7 6	518 11 8	244 3 0	1,595 2 2	4.814 per cent.

From this table it will be seen that the dwellings for families yielded during the last year a return of nearly 5 per cent. If the rents had reached 63*l.* 2*s.* 11*d.* more than they actually were, the returns would have been exactly 5 per cent. But, on the other hand, the establishments for single men have not as yet paid an average of 1 per cent. It would appear that families have more readily appreciated the advantages offered them than single men, though there has been a steady increase in the number of inmates in the chambers for single men. Thus in March, 1850, the number of tenants in the Albert-street chambers (the chief establishment for single men) was 51. In March, 1851, there were 104 tenants. In March, 1852, there were 120. In March, 1853, there were 140, whilst the number in October, 1853, had reached 190. The loss on the two chambers for single men; the expense of the Charters (1430*l.*), and other preliminary expenses; the unjust assessment of the former window duty, which, by making an unfair distinction between these Buildings† and similar suites of apartments or chambers in the

* The other sums before mentioned, with the exception of the one relating to the buildings in Old Paneras Road, include the purchase of the freehold.

† They have no street doors at the entrances, so that each staircase forms a street, as it were, in itself.

Albany and Inns of Court, imposed an annual sum of 254*l.* 12*s.* 3*d.*, in addition to the heavy taxation otherwise borne by the Society; the similar unjust assessment of the present house duty; and the expenses of general management, which are nearly 14 per cent. on the sum invested (*viz.* 53,458*l.* 15*s.* 1*d.*), have reduced the rate of the dividends hitherto paid. The first was a dividend of 1*l.* per cent., the second of 3*l.* per cent., and the third of 13*l.* per cent.

With reference to these dividends, it must be further borne in mind that it is only during the last two years that any considerable portion of the capital expended has been in a state of remunerative reproduction. But as the chambers for single men are better tenanted, and the scale of the dwellings for families is soon, it is hoped, to be extended by two other large buildings, there is reasonable ground for the expectation that at no distant period a steady dividend of from 4*l.* to 5*l.* per cent. will be paid on the whole of these establishments.

The two provincial affiliated societies of Brighton and Ramsgate, although they have been projected only about two years, already produce an interest of nearly 5*l.* per cent. The two others have been only very recently formed.

Upon the whole it will probably be admitted that the Association, even under all the disadvantages and drawbacks attendant on a first building experiment, has already made a fair progress towards realizing the amount of financial success prescribed to it by the self-imposed terms of its charter.

The results of the experiment with reference to its great object, the protection of health and the diminution of preventible sickness and mortality, are now to be stated.

In the year 1850, the comparative mortality of the residents in the Metropolitan Buildings, both adults and infants, was so small, that it was generally concluded that the result was accidental.

In the year 1851, this comparative low rate of mortality continued, though the actual mortality was higher than in the former year.

In the subsequent year the mortality again became nearly the same as in 1850.

The following are the exact results:—
In 1850, the total population in the Metropolitan Buildings, Old Paneras Road, was 560, and the deaths were 7, being at the rate of 12 and a half in 1000 of the living.

In 1851, the total population was 600, and the deaths were 9, being at the rate of 15 in the 1000.

In 1852, the total population was 680, and the deaths were 9, being at the rate of 13 and a fraction in the 1000. The average mortality of the three years in these buildings has been 13.6 per 1000.

But taking together the whole of the establishments of the

Association, which had now come into full occupancy, the total population for the year ending March 1853, amounted to 1,343. Out of this number there were, during that year, 10 deaths, being at the rate of 7 and a fraction in the 1000.

If this mortality is compared with the mortality of the metropolis generally, and with the mortality of one of its worst districts, the following results are obtained:—

The deaths in the whole of the metropolis, during the same year (1852), reached the proportion of 22 and a fraction in the 1000; consequently, the total mortality in London generally, taking together all classes, rich and poor, was proportionally more than three times greater than the mortality in these establishments.

On a comparison of the infant mortality in these dwellings with that of the metropolis generally, the results present a still more striking contrast. Of the total population in the establishments of the Association (1,343), 490 were children under ten years of age. Among these there occurred 5 deaths, being in the proportion of 10 in the 1000. In the same year the infant mortality in the whole of London, reached the rate of 46 in the 1000; consequently, the infant mortality in the establishments of the Association has been little more than one-fifth of that in London generally.

This low rate of mortality, the comparative absence of sickness, and the general state of well-being implied in the two former conditions, will appear the more remarkable when compared with the mortality in one of the worst districts of the metropolis.

In the Notting Hill division of Kensington Parish, there is a place called the "Potteries," which is wholly destitute of the sanitary provisions secured to the improved dwellings. Until recently it had no drainage, and even now there is little that is effectual. It has no supply of water, no means for the removal of filth, and the houses are dirty, damp, and miserable beyond description or belief.

According to the Census of 1851, the population of the Potteries was 1,263; and the number of children at that time living, under ten years of age, was 384. As the population of this place is not migratory, but quite stationary, it may be assumed to be pretty much the same in 1853 as it was in 1851. At all events, it may be considered as sufficiently so, to afford the means of comparing its mortality for that year with the mortality of the Metropolitan Buildings.

From the returns of the Registrar-General, it appears that during the year ending the 31st March, 1853, the total deaths in the Potteries, from all causes, amounted to 51. In the Metropolitan Buildings the deaths were 10; so that with a smaller population (80 less), the deaths were 41 in excess. In the Potteries, the deaths from all causes, under ten years of age, were 42; in the

Metropolitan Buildings they were 5, being an excess of infant mortality in the Potteries, of 37. In the Potteries, the proportion of deaths per cent. to the population was 4.03, or 40 in the 1000; in the Metropolitan Buildings it was 7.4, or 7 in the 1000, being an excess in the Potteries of 33 in the 1000. In the Potteries, the proportion of deaths per cent., under ten years of age to the population under ten years of age, was 10.9, or 109 in the 1000; in the Metropolitan Buildings it was 1.0, or 10 in the 1000, being an excess in the Potteries, of 99 in the 1000. In the Potteries, the proportion per cent., of deaths from zymotic diseases, under ten years of age, to the population, was 5.2, or 52 in the 1000; in the Metropolitan Buildings it was .82, or 8 in the 1000, being an excess in the Potteries, of 44 in the 1000. These results are presented under one view in the following tables:—

COMPARATIVE VITAL STATISTICS.

No. I.

WITH RESPECT TO PERSONS OF ALL AGES.

LOCALITIES COMPARED.	POPULATION.	MORTALITY.	Proportion of deaths to 1000 living.	
			Actual proportion.	Number in excess of M. B.
Metropolitan Buildings . .	1,343	10	7	—
Whole of London	2,420,619	54,213	22	15
Potteries, Kensington . .	1,263	51	40	33

No. II.

WITH RESPECT TO CHILDREN UNDER TEN YEARS OF AGE.

LOCALITIES COMPARED.	POPULATION.	Infant mortality.		Proportion of deaths to 1000 living.			
		All causes.	Zymotic diseases.	All Causes.		Zymotic diseases.	
				Actual proportion.	Number in excess of M. B.	Actual proportion.	Number in excess of M. B.
Metropolitan Buildings . .	490	5	4	10	—	8	—
Whole of London	547,806	24,661	8,333	46	26	16	8
Potteries, Kensington . .	384	42	20	109	99	52	44

It will be seen from Table No. I. that the deaths from all causes in the whole of London were, in proportion to the popula-

tion, three times more than in the Metropolitan Buildings; and in the Potteries nearly six times more.

From Table No. II. it appears that the deaths from all causes among children under ten years of age were, in proportion to the population, in London generally, four and a half times more numerous, and in the Potteries, ten times more numerous than in the Metropolitan Buildings; while the deaths from zymotic disease among these children were, in London generally, twice, and in the Potteries, five and a half times as many as in the Metropolitan Buildings.

If the deaths in the whole of the metropolis had been at the same rate as in the Potteries, there would have died in London, in that year, 94,950 persons, whereas the actual deaths were 54,213;—that is, there would have been a loss of upwards of 40,000 lives; and if the whole of the metropolis had been as healthy as the Metropolitan Buildings, Old Pancras Road, on an average of the three years, there would have been an annual saving of about 23,000 lives.

There is another point of view in which the healthy condition of the improved dwellings presents a remarkable contrast to that of the general population, namely, in the absence of the various forms of continued fever, of which typhus may be taken as an example. In London generally, the average deaths from typhus, and other forms of continued fever, amount to about 12 per cent. of the total deaths. In some of the worst Metropolitan districts, typhus sometimes prevails in almost every house in a street or court; and there are instances in which upwards of 20 cases have occurred in a single house in the course of a few weeks. There has been no case of typhus fever in any one of the improved dwellings since they were first opened.

It has been elsewhere shown that typhus fever is not, as is commonly supposed, the disease of poverty in the sense of destitution; that it is not peculiarly the disease of the young and feeble; that, on the contrary, it is pre-eminently the disease of the prime of life, and that it attacks the well-nourished and robust, as well as those who are enfeebled by privation. Its true source is not want, but filth; not insufficiency of food, but impurity of air, and particularly such impurity as is produced by overcrowding, and by the emanations of the poison-pit, the cess-pool.

It attacks chiefly persons between the ages of 20 and 40, consequently its principal victims are the heads of families; it is the destroyer of parents rather than of children; it deprives the wife of the husband, the husband of the wife, and the children both of mother and father. It is thus one of the most constant causes of widowhood and orphanage, and of consequent pauperism. It arises from causes within our control, and is therefore preventible.

There are diseases produced by the ordinary operation of natura-

causes, from the pernicious influence of which, though we are not altogether defenceless, we have no power to obtain complete security; such, for example, are the physical causes which determine the degrees of cold and moisture to which the body is exposed, and their alternations. There are other causes over which we have still less control, inherent in the animal frame itself, which naturally and inevitably prepare the way for disease by the very working of the machinery by which life is maintained. Every vital process performed in a state of the most perfect health is an action of this kind. Though the wonderful mechanism of the living body has this property, that it is capable of re-supplying its own waste, and of repairing day by day the constant wear and tear of life, yet it is equally the law of our being that our physical organization becomes less and less perfect after a certain age, and that in the progress of time it wears itself out. But this is the condition of our existence imposed upon us by our Creator. It is the means by which he maintains the great plan, on which he has constituted the organized and living world; that of continuing the existence of living creatures by successive generations, not by the perpetual life of the same beings; it is the means by which he fulfils his own ordination of death. But typhus and its kindred diseases form no necessary part of that ordination. These dreadful maladies are no inflictions of our Creator; no necessary and inevitable condition of our being. They are self-imposed; they are the consequences of our culpable ignorance, neglect, and folly. It is in our own power to avert them, and we know the certain means of doing so. There is no typhus fever where there is absolute cleanliness; but it is in our power to make our villages, towns, and dwellings absolutely clean; it is therefore in our power to prevent the existence of this plague. Wherever we have drained our marshes, ague or intermittent fever has disappeared, and when we shall have thoroughly purified our towns and houses, typhus fever will equally cease to exist.

By enforcing scrupulous cleanliness we have for some time past banished this disease from our Union workhouses and from prisons; and now, by giving to the houses of the industrious classes efficient drainage, the ready means of removing solid refuse, a good supply of water, and water-closets instead of cess-pools, we have placed a barrier around these dwellings which this mortal pest of our towns and cities has not been able to pass.

Social and physical results in all respects similar have been obtained by another Society,* instituted for the same objects, of which the Earl of Shaftesbury is the President. In all these

* Society for Improving the Condition of the Labouring Classes, incorporated by Royal Charter. Committee Room, No. 21, Exeter Hall. This Society numbers 7 establishments, containing altogether about 500 residents.

establishments there has been the like comparative low rate of mortality, and the same total exemption from typhus fever.

Evidence confirmatory of the efficacy of sanitary provisions to prevent the recurrence of epidemic diseases, and greatly to reduce the rate of mortality, has been obtained from other sources. One of the most unhealthy spots in the Metropolis has recently afforded a signal instance of it.

Three years ago Lambeth-square was as unhealthy as the Potteries. The population remained the same; the occupations, mode of life and habits of the people remained the same; no change of any kind took place, excepting the introduction of certain sanitary improvements. No history is more instructive.

Lambeth-square is situated in the Waterloo-road district of the parish of Lambeth. It consists of 37 eight-roomed houses which let at about 28*l.* a-year, and are chiefly occupied by the foremen of large establishments, and the more skilled and highly-paid class of artisans. In outward appearance, and in their general aspect within, these houses are very superior to the ordinary abodes of the same class in other parts of the metropolis, and present no obvious cause of peculiar unhealthiness.

According to the last census this square contains a population of 434 souls. Among this number on a house-to-house examination, it was found that in one year (1851) there had occurred 80 attacks of zymotic* and other diseases, and 24 deaths; that is, nearly one person in every five had been laid up with sickness, which had proved fatal in the proportion of between 50 and 60 in 1000.

When built about twenty years ago these houses had been fitted up with untrapped closets, communicating with flat-bottomed brick drains, then in universal use. A number of the drains passed directly under the houses; they were wholly unprovided with any regular water supply for cleansing; consequently, instead of carrying away the ordure, they retained it within the houses; and the emanations arising from the stagnant mass of putrifying matter, were carried back into the houses, through the open closets, in a proportion increasing with the obstruction in the drains.

At the beginning of 1852, a new system of drainage was applied to the whole square. Water-closets were substituted for cesspools, and stoneware pipes for brick drains, and the apparatus was provided with an adequate supply of water.

By these improvements the houses were placed in the same sanitary condition essentially as the Society's dwellings. The

* From a Greek word, signifying to ferment. The term is employed metaphorically, as if this class of diseases were produced and propagated by a kind of fermentation. In these pages it is used merely for the sake of shortness to include the entire class of preventible diseases.

result on the health of the inhabitants was strikingly similar. On a re-examination of this property in November of the present year (1853), it was found that the mortality had been reduced from 55 in 1000, to 13 in 1000.

Results so extraordinary are beyond hope, and almost beyond belief, but derived from sources thus widely different and independent, they are confirmatory of each other. They have further received decisive confirmation to a most unexpected extent from the operation of the Common Lodging Houses Act.

The Common Lodging Houses Act is a compulsory statute which local authorities are everywhere bound to carry into effect. It has been grievously neglected in many towns, but still it has been applied in a sufficient number to indicate the kind and amount of good it is capable of effecting.

From the following examples, selected from a great number of similar statements contained in a return recently presented to Parliament, it will be seen, that the Common Lodging Houses Act, by enforcing certain conditions of cleanliness, and by preventing overcrowding, has extended to vagrants and others, forming the very lowest portion of the population, the like immunity from disease, which the improved dwellings have secured to the industrious labourer and artisan.

In the town of Wigan, for example, there are 24 lodging-houses, through which have passed during the last year, 29,655 lodgers. The Superintendent of Police reports, "There has not been a single case of fever in any one of those houses since the Act has been in force."

The town of Wolverhampton affords a still more striking instance. In this town there are 200 lodging-houses, through which have passed during the year the incredible number of 511,000 lodgers. The Superintendent of Police reports, "There has not been a single case of fever in any one of those houses since the Lodging Houses Act has been in force in July 1852."

Statements to the same effect have been received from Morpeth and Carlisle.

From a return made to the Secretary of State for the Home Department, by Captain Hay, one of the Metropolitan Police Commissioners, who has been entrusted with the execution of this Act in the Metropolis, it appears that, in the week ending 23rd of October 1853, there were reported within the Metropolitan Police district, 7,253 lodging-houses. At that time the keepers of these houses had all been served with notice to register in conformity with the Act. Of this number 1,308 had permanently registered, and were under efficient regulation. In the houses thus reported, the lodgers numbered at least 25,000. During the quarter ending the 23rd of October, there had not occurred a case of fever in any one of these houses; yet before they were under regulation, twenty cases of fever

have been received into the London Fever Hospital, from a single house in the course of a few weeks.*

In the whole of the improved dwellings the exemption from cholera has been as complete as from typhus. During the entire course of the epidemic in 1848 and 1849, no case of cholera occurred in any one of these dwellings, though the pestilence raged in all the districts in which they are situated, and there were instances of two, and even four deaths, in single houses close to their very walls. Since the reappearance of the pestilence this autumn, it has numbered as many as twenty victims in one street in the metropolis, and six even in one house, but as yet no case of the disease has occurred in any of the improved dwellings.

Moral pestilence has, at the same time, been checked. The intemperate have become sober, and the disorderly well conducted, since taking up their abode in these healthful and peaceful dwellings. No charge of crime, no complaint even of disturbance, has been lodged at any police station against a resident in these dwellings since their first occupancy.

On the classes resorting to common lodging-houses the change effected is still more striking. "Their whole conduct," says a magistrate of Birmingham, "is far better since the Act came into operation. Before that time their manner towards the police and magistrates was sullen and coarse; now it is respectful, candid, and open: they seem to be satisfied that they are doing right."

"Since they have been under regulation," says another highly competent witness, "neither the houses nor the inhabitants could be recognised as the same; the lodgers take an active part in assisting the police in enforcing the regulations; the value of the improvement effected to society generally, and to the parties immediately concerned, is incalculable."

The Superintendent of Police at Carlisle says, "Vice and immorality are much less; crime has decreased to a great extent."

* Another instance of beneficent legislation, an Act conceived in the same spirit, entitled "The Labouring Classes' Lodging-houses Act," received the Royal Assent on the same day as the "Common Lodging Houses Act." The "Labouring Classes' Lodging-houses Act" is merely an enabling Act, but it gives most important powers to local authorities for raising loans, procuring lands, and building or buying houses in order to provide more convenient and commodious dwellings for the labouring classes. Under this Act any town or district may by certain recognized authorities, and under certain conditions, erect new structures, or purchase existing tenements unfit for human habitation, and replace them by wholesome dwellings; and such authorities may do this on the principle of a commercial enterprise, though the requisite capital is to be supplied from the rates. By this statute, therefore, local authorities in general are empowered to do what has been done in London by the Metropolitan Association, and the Society for Improving the Condition of the Labouring Classes. (See provisions of the "Labouring Classes' Lodging-houses Act," 14 and 15 Vic. cap. 34.)

The Inspector of Common Lodging-houses in Wolverhampton bears the same testimony.

The Clerk to the Local Board of Health of Morpeth says:—"Since inspection under the Act crime has very much diminished; since the Act was applied there has not been one case of felony or misdemeanour in the borough, an exemption from crime which I never knew before."

These results are the first fruits, full of promise, of the removal of the causes of physical debasement. But still much remains to be done. Even the physical results are as yet far from being completely satisfactory. Preventible disease has been diminished, but not suppressed. There has been in the improved dwellings complete exemption from typhus, cholera, and it may be added small-pox; yet it must be admitted, that other forms of zymotic disease—scarlet fever, measles, hooping-cough, and diarrhoea—have occurred, though rarely, and these maladies have in no instance spread. In the present state of towns, it cannot indeed be expected that large numbers of persons can be placed under circumstances which will give them absolute immunity from the visitation of epidemic diseases. These terrible maladies are the stern monitors of our duties with respect to laws, obedience to which is the ordained condition of health and life; and the consequences of such neglect of those laws as recent disclosures, relative to the sanitary condition of the country, have shown to be habitual and general in every town in the kingdom, must, for a time at least, have their course. The neglects of years cannot be remedied in days: surface cleansings cannot reach the mischiefs that exist and accumulate beneath. Nevertheless, as long as any localities are subject, in ordinary seasons, to the frequent recurrence of zymotic disease, in any form, none can foresee the extent to which they may suffer during an extraordinary epidemic period.

We are now, in all human probability, entering on such a period. The new and terrible plague of modern times is again amongst us. It may remain comparatively inert during the winter months, as it did in 1848, but there is too much reason to apprehend that it will reappear as formidably as ever in the coming summer. It has certainly lost nothing of its former virulence. On the contrary, it is in some respects more violent than on any previous visitation, and it numbers among its victims a larger proportion of the higher classes. The interval between 1848 and 1853 has been grievously neglected. Comparatively few towns are now better prepared than they were then to meet the impending danger. On this very account, the more urgent and imperative is the necessity that the interval between the present time and the approaching summer, should not be lost. Though it may not be possible, by any such temporary and inadequate measures as are practicable within the time, to prevent altogether outbreaks of the pesti-

lence, yet we may hope to lessen their severity. There are not wanting instances in which the energetic adoption of such measures as were available, particularly the enforcement of all practicable means of cleansing, and the resolute removal of nuisances, warded off the disease to a very great extent, even under circumstances in which a formidable attack appeared inevitable; and perhaps, at the present juncture, it may serve for encouragement and guidance to direct attention to one or two of such examples.

One of the most remarkable of these occurred at Baltimore, during the prevalence of epidemic cholera in America, in 1849.

The population of this city is about 149,000 souls. The site of the town is naturally salubrious, and parts of it are well built; but the districts near the river occupied by the poorer classes are low and damp, and liable to remittent and intermittent fevers, and, therefore, predisposed to cholera.

In the spring of 1849, the pestilence, which had attacked with great violence several neighbouring towns, appeared to be close upon the city. A general conviction prevailed, both among the authorities and the citizens, that uncleanness had much to do with the development and spread of the disease; they therefore spared neither money nor labour to purify the city, and they gave the execution of the cleansing operations to experienced and energetic officers, who performed the work so vigorously, that it was generally admitted that never before had the town been in so clean a state, or so thoroughly purified, as during the summer months of the year 1849.

About the middle of June, while cholera was prevailing at New York, Cincinnati, and other places, north and west of Baltimore, diarrhoea broke out, and became general over the whole city, accompanied by another symptom which was universal, affecting even those who had no positive attack of diarrhoea; namely, an indefinable sense of oppression over the whole region of the abdomen, seldom amounting to pain, but constantly calling attention to that part of the body.

"At that time," says the medical officer of the city, "I felt assured that the poison which produced cholera pervaded the city; that it was brooding over us; that we were already under its influence, and I anticipated momentarily an outbreak of the epidemic. In about two weeks, however, from the commencement of this diarrhoea, and the prevalence of the uneasy sensation which accompanied it, these symptoms began to subside, and in a short time they wholly disappeared. Simultaneously with their disappearance, cholera broke out at Richmond, and other towns south of Baltimore. I then felt assured that the fuel necessary to co-operate with this poison did not exist in our city: that the cloud had passed over us and left us unharmed."

No case of cholera was reported to the Board of Health or

other authorities of the town as having occurred during this time; but on close examination, it was ascertained that four deaths had taken place from the disease in its most virulent form.

That the cholera poison had really pervaded the city, was appallingly evinced by an event which occurred in its immediate vicinity.

The Baltimore almshouse is situated about two miles from the city, on sloping ground, remarkable for its beauty and salubrity, in immediate contiguity with the country-seats of several of the wealthy families of the town. It is surrounded by a farm of upwards of 200 acres, belonging to the establishment, for the most part under cultivation. The building is capable of accommodating between 600 and 700 inmates. An enclosure of about five acres, surrounded by a wall, adjoins the main building upon its north side. In the rear of this north wall is a ravine, which at one point approaches the wall to within about nine feet. This ravine is the outlet for all the filth of the establishment. It is dry in summer, but retentive of wet after rain. The space between the wall and the bed of the ravine is not under tillage, but is overgrown with a rank, woody vegetation, common in rich waste soils. The physician of the establishment, under the same apprehension of an outbreak of cholera as had prevailed in Baltimore, had taken the same precautions against the disease, and had placed the establishment itself in a state of scrupulous cleanliness.

On the first of July cholera attacked one of the inmates. On the seventh a second attack occurred. This was followed in rapid succession by other seizures, and within the space of one month 99 inmates of the establishment had perished by cholera.

Within the building and grounds the most diligent search failed to discover anything that could account for this outbreak; but on examining the premises outside the northern wall, there was found a vast mass of filth, consisting of the overflowings of cess-pools, the drainage from pigsties, and the general refuse of the establishment. "In short," says the medical officer, "the whole space included between the ravine and the wall, upon its north side, was one putrid and pestilential mass, capable of generating, under the ardent rays of a Midsummer sun, the most poisonous and deadly exhalations."

During the greater part of the time that this outbreak continued, a slight breeze set in pretty steadily from the north, conveying the poisonous exhalations from behind the north wall directly over the house.

The first persons attacked were those who happened to be particularly exposed to the air blowing from the north side of the building.

On the male side of the house there was no protection from the ravine. The female side was partially protected by three

rows of trees. The residents on the women's side were more numerous than on the men's, but the attacks were considerably less. Among the paupers, those who slept in apartments exposed to the north were attacked, those not so exposed generally escaped.

In the basement story of a building, opening directly to the north, and close to a spot which received the contents of one of the cesspools, 17 lunatics were lodged, all of whom were attacked, and all died.

Eight medical students were attached to the establishment, of whom four occupied apartments with a northern exposure, and four were lodged in rooms with a southern exposure. The four whose rooms were exposed to the north were attacked, the four whose rooms were not thus exposed escaped.

The manager, also, who slept in a room above that of the students looking to the north, was attacked; his family, whose rooms looked to the south, escaped.

Men, after some difficulty and delay, were employed to remove the filth and drain the ravine, the whole surface of which, after having been thoroughly cleansed by a stream of water, was thickly covered with lime, over which was put a deep stratum of earth. The men employed in this work were attacked with cholera, as were some of the several inmates of the almshouse who had been dispersed throughout Baltimore, but the disease did not spread to any other persons in the city. From the 25th of July, the day on which the drainage was completed, the disease suddenly declined from 11 the day previous, to 3, and, by the 9th of August, had entirely disappeared.

In the cases of Baltimore, and the Baltimore almshouse, a neglected spot was severely visited by the pestilence, while, by well-directed exertion, an entire city escaped. In our own country an instance has lately occurred in which, by similar exertion, a particular spot escaped, while a populous town was devastated by the plague.

No town in Great Britain has ever been so severely visited by cholera as Newcastle, yet the garrison of Newcastle has wholly escaped.

The barracks in which the garrison of Newcastle is quartered are situated about three-quarters of a mile from the centre of the town. In houses at distances varying from 20 to 200 yards of the barrack gates, numerous deaths from cholera took place, and in a village 250 yards from the barracks the pestilence prevailed to a frightful extent for many days, numbering one or more victims in almost every cottage.

On the outbreak of the pestilence in the town, the medical officers of the garrison, with the sanction and assistance of their superior officers, exerted themselves with great promptitude and energy to carry into effect all the means at their command, calcu-

lated to lessen the severity of an attack from which they could not hope altogether to escape. The sewers, drains, privies, and ash-pits were thoroughly cleansed; all accumulations of filth were removed; the spots where such filth had been collected were purified; the freest possible ventilation was established day and night in living and sleeping rooms; overcrowding was guarded against; the diet of the residents was, as far as practicable, regulated; the men were strictly confined to barracks after evening roll-call, and were forbidden to go into the low and infected parts of the town; amusements were encouraged in the vicinity of the barracks; every endeavour was made to procure a cheerful compliance with the requirements insisted on, without exciting fear; and there was a medical inspection of the men twice, and of the women and children, once daily.

The influence of the epidemic poison upon the troops was demonstrated by the fact that among 519 persons, the total strength of the garrison, there were 451 cases of premonitory diarrhoea, of which 421 were among the 391 men, irrespective of the officers, women, and children, the attacks being in some instances obstinate, and recurring more than once. Yet such was the success of the judicious measures which had been adopted, that no case of cholera occurred within the barracks during the whole period of the epidemic; and every case of diarrhoea was stopped from passing on to the developed stage of the disease: while in Newcastle there were upwards of 4,000 attacks, and 1543 deaths.

It is impossible to over-estimate the practical importance of the results which have now been stated. They show the extent to which, under circumstances of the utmost difficulty and danger, it may still be possible to save life; they open a prospect of the physical and social improvement of the people, such as, before these results were obtained, there was no warrant from experience to anticipate; they indicate that the first step in this progress must be the removal of the degrading influence of the present dwellings of the labouring classes, and they prove the practicability, without loss to the capitalist, or additional rent to the tenant, of the universal substitution of houses for hovels. There must be compulsory enforcement of certain sanitary conditions wherever there are human habitations. There must be provision for the supply of better-ordered dwellings for the industrious classes: dwellings accessible to air and light, and no longer producing that malarious depression which resorts for relief to the fatal stimulus of ardent spirits: dwellings compatible with cleanliness, comfort, and those decent observances which are necessary to self-respect, and which must become habits before there can be respect for the happiness, property, or life of others.

Until such dwellings are within the reach of these classes, they cannot be raised out of that physical debasement which has lately been so painfully depicted, and which has been shown to be the portion (the unnecessary portion) of large masses of the people. The physical improvement of these masses, it is now admitted, must precede their intellectual and moral elevation. When the house ceases to be a sty, and possesses the conditions which render it capable of being made a home, then, but not till then, may it receive, with some hope of benefit, the schoolmaster and the minister of religion.

OPINIONS OF THE PRESS.

"These results point out the road to an improved material condition, towards which we have of late been steadily advancing, and afford no uninteresting supplement to the pecuniary account of our increasing national prosperity."—*Advertiser*.

"With such results before us shall we not persevere? We know that it is necessary to eat to maintain life, and we eat; we know that if the hand be put into the fire it will be burnt, and we take care not to put it there; we equally well know that by the provision of subterranean dwellings for the labouring classes,—fresh air, pure water, and good drainage,—we save money, suffering, virtue, and life, and in the name of all we hold in reverence, let us endeavour to provide them."—*Standard*.

"We sacrifice thousands to the demon of filth, not in obedience to, but in violation of the dictates of, our faith. Many of the most fearful diseases may be absolutely extirpated by the employment of means that are within our reach."—*Atlas*.

"Facts like these appeal alike to the practical and to the philanthropic. If we determine to organize our towns, we can; and it will pay,—directly in a good per centage,—indirectly in preserving us from a good deal of that very expensive social department of labour—crime."—*Liverpool Journal*.

"The achievements are most important—the statistics most startling and encouraging."—*Inspector*.

Dr. Smith's very impressive statement tells a tale which a volume of argument and dissertation could hardly strengthen.—"We see the materials of destruction, compared with which a campaign or even a Sinope slaughter is insignificant. The campaign passes over, and another Sinope may not occur for ages; but [here] the slaughter goes on from day to day, and year to year."—*Belmont Mercury*.

"YOUR VERY GOOD HEALTH.—We repeat here some of the most striking facts stated by Dr. Southwood Smith in the small pamphlet to which we refer, taking them as we find them, and leaving every man to deduce from them his own conclusions. * * * The 23,000 Londoners, fewer or more, who in this year, 1854, are otherwise to die through the want of a complete sanitary system, had better bestir themselves and look after reform. The difficulty is to know which of us are to be enlisted in the army of dead men claimed yearly by King Filth."—*Roundell Words*.

"A century hence or less, it may be hoped that typhus, and epidemic cholera, may be impressed out of existence as efficiently as good fever. Those to whom such a hope may appear visionary, are recommended to examine these 'Results' of the sanitary improvements already effected at the highest and lowest points of the scale of lodgings and dwellings for the poorer classes."—*Globe*.

"A small pamphlet of a few pages, which comprises within it more matter for serious thought and hopeful effort than is contained in many ordinary volumes. We commend it to the careful perusal of all local authorities in the kingdom, and all thoughtful and instructed individuals among the working classes. It will cost them twopenny in money and ten minutes in time, but it will afford them matter for constant reflection, and untiring exertion."—*Morning Advertiser*.

"This highly instructive little pamphlet, which bears the authoritative name of Dr. Southwood Smith, ought to be in the hands of all members of Town Councils, Police Commissioners, and other bodies to whom is intrusted the much-expected duty of attending to the sanitary arrangements of towns and cities. Brief as it is, its illustrations furnish an amount of information as to the good effects of sanitary improvements, which would be sought for in vain through many bulky blue-books, and these arguments from example in favour of the expediency of sanitary reform are absolutely overwhelming in their completeness."—*Scotsman*.

THE NECESSITY FOR SOME LEGALISED ARRANGEMENTS FOR THE TREATMENT OF DIPSOMANIA;

OR
THE DRINKING INSANITY.

BY
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EDINBURGH: SUTHERLAND AND KNOX.
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MDCCCLVIII.

PREFACE.

THE greater part of this paper and the scheme given in the Appendix, were written eight years ago, as part of a proposed review of the entire medico-legal relations of drunkenness, when the Lunacy Act of 1841 for Scotland was in operation, and when, of course, that of 1845 for England was, as it still is, the law of the land. This somewhat extensive design, however, was, from various causes, abandoned; and the portion relating to the restraint of the drinking insane has been kept back until now, from the impression that the public mind was not prepared to consider calmly any measures such as those suggested, and from an idea that the legal profession would be indisposed to view them with favour. But after the publication of the Report of the late Scottish Lunacy Commission, containing a very decided opinion, founded on the evidence of several distinguished medical men and officers of the Crown, as to the necessity of some "special regulations for prolonging control over cases of insanity arising from intoxication;" and seeing that the measure of the Lord Advocate, arising out of the investigation made by the Commissioners, has become law, without any provision being made to meet the case of this class of unfortunates,—I resolved to submit the following paper to the Medico-Chirurgical Society of this

city, and did so on the 6th ultimo. Encouraged by the reception which it on that occasion received, and the opinions expressed by medical friends, in whose judgment I can confide, that the proper time has come for drawing the attention of the country more strongly to the subject of it, I have given it to the public with very little alteration, except what was required with a view to publication in this form; in the hope that the discussion of the subject may eventually give rise to some arrangements which may contribute largely to individual happiness and well-being, and to the mitigation of a great social evil.

1A, Rutland Street, February 1858.

TREATMENT OF DIPSO MANIA.

MEDICAL MEN are often consulted as to the treatment and disposal of individuals who are either habitual drunkards, or affected occasionally—it may be after short intervals of time—with an irresistible desire for stimulants. Their opinion, too, is not unfrequently required as to the degree of sanity possessed by such persons, their competency to manage their own affairs, or their responsibility in connection with criminal acts.

In the cases to which the attention of the physician is thus called, there is, occasionally, some eccentricity of deportment, or of habits, existing along with the propensity to excess in the use of intoxicating liquors; and generally, after a long course of intemperance or of periodic fits of drinking, the mental faculties are so enfeebled, and the moral sense so perverted, that the unhappy individuals do really become imbecile, or shamelessly untruthful, and otherwise vicious, or destructive, or even violent. Sooner or later they become incapable of transacting the ordinary business, or performing the ordinary duties of life; and, while often utterly helpless and indifferent about their own best interests, they are apt to interfere most injuriously with the circumstances of others, and exercise a most baneful influence on the social relations of the general public.

Such cases are by no means rare; and the physician, along with the nearest and most attached friends of these unfortunate victims of the vicious propensity, has often much reason to regret that the law of the land does not sanction the imposition of some degree of *personal restraint*, where private and ordinary means, moral and medical, have proved unavailing towards the efficient conduct of curative measures, or the prevention of serious injury to person or property, it may be even the commission of some flagrant crime. Much bitterness of heart, much domestic distress, nay, absolute ruin of fortune

and prospects in life, have resulted to many families by the excessive or long-continued course of indulgence in stimulants by one of its members; and in addition to these present evils, there is often a future curse inflicted on the family, inasmuch as experience has unequivocally proved that the offspring of persons so afflicted are generally feeble and unhealthy—often idiots from birth, or strongly predisposed in future life to insanity in some form or other, or to a similar irresistible propensity to drink. And, although the victims of this form of intemperance may have no relatives or friends immediately dependent on or connected with them, yet they occasion much annoyance to their neighbourhood—they are, in fact, moral pests to society; being neither fitted for the performance of social duties, nor capable of conducting themselves as good citizens.

Even according to common opinion the habit of drinking in such cases is considered as a disease; and it is, doubtless, viewed as such by all medical men. Hence the person affected with it is spoken of by both as being of diseased mind, virtually insane, unable to extricate himself from the tyranny of the vice, incapable of bettering his condition in life, and, to a great extent, an irresponsible agent. When it comes to this; when common-sense doubts are entertained of the person being sane, of his being a moral agent, or of his having capacity for thought and foresight; when he is viewed by the world as destitute of self-control and self-respect, as suicidally sinking himself in the scale of rational creation, and pronounced to be "a pestilent fellow,"—it surely is full time that he should be looked after and cared for. Since the opinion of society is insufficient to deter him from his vicious courses, and the efforts of those most interested in his welfare no longer influence his conduct or control his actions, it is surely expedient that the law should interfere, and lend its assistance and protection. But it does not; and to control or check this evil at its source ere it is perpetuated and becomes cumulative, the best medical skill, and the most judiciously contrived and patiently continued arrangements, are too often fruitless, from the want of the requisite power to enforce them.

As the law stood previous to the recent Lunacy Act,¹ its aid—so desirable for the sake of the individual, thus at least morally if not intellectually insane, as well as for the good of others—was not

¹ 20 and 21 Vict., c. 71. Act for the Regulation of the Care and Treatment of Lunatics, and for the Provision, Maintenance, and Regulation of Lunatic Asylums in Scotland (Aug. 25, 1857).

easily obtained; and the law in this respect is still, as I shall afterwards show, by no means in a satisfactory state.

It is certainly right that the law should be jealous of interference with personal liberty and the "freedom of the subject;" and it is in this spirit that the decisions of English judges, in cases of alleged mental disorder, have been framed. *Interdiction* is authorised in the lesser degrees merely of mental disorder; though even it, I believe, is directed only against heritable property, and in no way affects the person and moveables; but *restraint* can only be obtained in cases of more complete mental deficiency,¹ or where delusion or aberration exists to such an extent² as to influence mental and physical acts, and instigate the sufferers to the injury of themselves or others, in their person or property.

The individuals, therefore, forming the subject of these remarks—those unfortunate beings styled by some *Dipsomaniacs*, and *Oinomaniacs*³ by other writers—cannot be deprived of personal liberty, as their case does not come under the strict definition of what is held in law to constitute lunacy.

Thus, in the most recent Act for England, passed in 1845,⁴ any one restrained must be proved to be "a lunatic or insane person, or an idiot, or a person of unsound mind." What is really meant by mental unsoundness—a term not of medical origin—is left unexplained; and, consequently, the *dicta* of Lords Coke, Hale, Hardwick, Eldon, and others, though differing widely in the definitions of insanity—for doctors of law can and do differ as well as doctors of physic, the proverb, indeed, having originated in application to them—have continued to be quoted by their successors at the bar and on the bench as authoritative; and the subject remains as vexed and perplexed as ever. Thus antiquated legal and medico-legal definitions and axioms, in regard to disorders of the mind, enunciated doubtless with all the horrors of the mad-houses of by-gone days rising before the mind's eye, have proved

¹ Various styled *dementia naturalis* and *idiotcy*.

² *Dementia adfectiva*, or *non composita mentis*, or lunacy, as it is improperly termed by lawyers, which comprises the varieties of insanity described by medical writers as *mania*, *monomania*, and *dementia*.

³ *Dipsomania* is derived from *δίψα* or *δίψος*, "thirst" and *μανία*, "madness," or eager desire. *Oinomania* a name, we believe, first given by German writers,—is derived from *οἶνος*, "wine," and *μανία*, "madness."

⁴ 9 and 10 Vict., c. 100, sec. 46. An Act for the Regulation of the Care and Treatment of Lunatics in England (August 4, 1845).

insuperable barriers to modern legislation and scientific and social advancement. It is my belief, indeed, that this is the main reason why opprobrium has been so often cast upon medical testimony for discrepancies in opinion on cases involving the consideration of mental disease, and that even in instances in which, although physicians were agreed, the bar and the bench could not be satisfied. While the legal profession sets up an absolute standard, frames definitions and interprets accordingly, the medical profession cannot acknowledge these as invariably correct or tenable, and refuses to apply such legal craniometers indiscriminately to the varied cases falling under its observation. Thus, while the lawyer refuses to listen to any opinions which do not conform to the notion that medicine ought to be an exact science, and turns a deaf ear to the voice of philanthropy, the physician, on the other hand, looks at the case from a different point of view; and, keeping the claims of humanity before him, and guided by the lights of science and experience, he makes allowances for those ever varying disturbances of mental phenomena which occur in connection with excited or perverted moral feelings and affections, or which arise from structural lesions or disordered corporeal functions. Hence the physician considers that every case must be judged of by its own special features, and from a consideration of the results likely to spring out of it; and this too, as in the case of many other diseases, more from the combination of symptoms than from any one diagnostic mark.

The error in past legislation, with regard to affections of the mind, seems to consist in not acknowledging and distinguishing degrees of mental disorder, and the relative disturbance or derangement in the equilibrium of the moral feelings and intellectual faculties; and in adhering to an absolute standard or test, either for the warrantableness of restraint, or in determining responsibility for crime. It has not condescended to the investigation of the main facts of each particular case, whether the mind be simply weak or entirely or wholly diseased—the very opposite of its normal or healthy condition; whether it is destitute of ideas, or only partially so, or filled with wrong ones; whether the propensities and habits are in a morbid condition, and the conduct consequently unreasonable or insane, even although the intellectual faculties may not manifestly or glaringly be subverted; and whether, under any of these phases of the mental and moral nature, and from whatever cause the disorder may have originated, the individual is affected to

such an extent, and in such a way, as to disqualify him for the performance of social duties, the exercise of social privileges, and the management of his own affairs. In this proposed gauge for measuring mental sanity there is length and breadth, height and depth, sufficient to test any case by its own peculiarities, both in relation to the individual directly concerned, and to society in general; and it affords a sufficient guarantee, alike for the security and liberty of the subject. Such discrimination would include those cases which Dr Prichard¹ has so well described under the appellation of "Moral Insanity," in contradistinction to the more decidedly and purely mental forms of the disease. He defines moral insanity to be that kind of madness which consists in a morbid perversion of the natural feelings, affections, inclinations, temper, habits, moral dispositions, and natural impulses, without any remarkable disorder or defect of the intellect, or understanding and reasoning powers, and particularly without any insane delusion or hallucination. The manifestations of this species of insanity are very various; but of these it may suffice to mention the following, which are dwelt upon at length in Dr Prichard's work:—Unreasonable aversion to the nearest and dearest friends, giving rise to unnatural, cruel, and irrational acts; such eccentricity and singularity of habits as leads to the performance of the ordinary actions and duties of life in a way totally diverse from the usual customs and practices of society; such caprice, fickleness, or irritability of temper, as continually incites to disputes, quarrels or fights, and even to such outbreaks of passion as are quite ungovernable, and certainly most dangerous to the objects of aversion, or to the individual's own life—in the first case exciting homicidal, and in the second suicidal, impulses; and, finally, such a propensity to theft, without any desire of subsequent possession, that the fingers cannot be kept off any apparently unprotected article which may attract the eye; or such an inclination to mischief, without any malevolence or comprehensible motive, as makes him a continual pest to his nearest friends and to society in general. These, and other varieties of moral perversion, which we cannot here notice, become more particularly important in a legal point of view, as forming the partition between insanity and delinquency—between irresponsible and responsible criminal acts, according to the shade or degree in which they are manifested, the way in which they are associated with the intellectual powers, influenced by education, and opposite to, or in

¹ On Insanity, p. 6, etc.

harmony with the natural temper and disposition of the individual in other respects.

I cannot help thinking that the antagonism of lawyers to physicians in regard to definitions of insanity would undergo some change, if the former had an opportunity of studying, even for a brief period, the varied phenomena of mental diseases occurring within the walls of a lunatic asylum. They would then be convinced of the real existence of the endless phases of insanity, and the great variety of its causes and complications. They would then, I doubt not, be convinced of the impropriety of framing and adhering to arbitrary definitions, and of the necessity of considering each case by its own peculiar features and circumstances; and be disposed to listen with more deference to the opinions of experienced and observant physicians, ceasing to characterise them as "fantastic and shadowy," "inconsistent" and "unsatisfactory."

Besides, difficulties in coming to a wise and just decision in many cases which come under judicial examination would be more easily disposed of, were asylums for the insane viewed as places not merely for confinement and restraint but for protection and cure. In penal legislation, Government, now-a-days, considers not merely the punishment of the offender, but, to a great extent, his reformation, and the good of society resulting from both; and, although the analogy in many respects will not hold good, yet in medico-legal arrangements for the insane, cases of serious mental and moral perversion, which interfere with private and public safety and well-being, ought to be disposed of with the twofold design of protection and cure.

But to return to the more immediate subject under consideration, what has been already stated as the law of England under the statute of 1845 applies equally to that of Scotland, which has hitherto been even more rigid in its requirements, although the terms of the Act of 1857 give some ground to hope for more liberality of construction. By its ancient phraseology, repeated in the Act, June 1841, and acted on to the present day, the only objects indicated as proper for restraint are the "furious, fatuous, or lunatic." The remedy employed in cases, in which mental infirmity or disorder exists in a smaller degree than is supposed to be implied by any of these terms, is either "*interdiction*"—the execution of a writ interdicting the spendthrift from alienating his property, and the lieges from transacting with him—or "*curatorship*," the exercise of the *nobile officium*, as lawyers call it, of the Court

of Session, by which a *Curator bonis* is appointed for the management of the affairs, and the protection of the property of such individuals, but without having any control over their persons, except what may arise from the possession of their funds. Contradictory interpretations of the term lunatic have also hitherto been given by the highest legal authorities; and important decisions, founded on these definitions and interpretations, have left much room for cavil and uncertainty. In general, I understand it to be enunciated that lunacy or insanity, to the extent necessary to warrant interference with personal liberty or to procure exemption from punishment, is not to be inferred from any partial mental unsoundness, but can only be declared when proof is afforded that the mental derangement is total and absolute; or, at least, that when the mental unsoundness consists in delusions, these must be so very decided and persistent as totally to unfit for the usual duties of life.¹ Thus the grounds necessary to warrant personal restraint have been limited to such a degree as would allow, if in every case they were rigidly required, many an individual, in whom reason is really disordered, to go on to ruin in mind, body, and estate, and would withhold from him both the opportunity and the means of cure. In such cases, most sincere, disinterested, well-wishing friends, or even considerate, conscientious, and intelligent physicians, seeking to exercise control over the person with the best intentions, not only derive no countenance from the law, but expose themselves to much inconvenience, and it may happen to the infliction of damages. Indeed, I believe that many hundreds of individuals, at present safe and comparatively happy in the various asylums of our country, would, if tested by such rules, be set loose to the dismay, distress, and disturbance of their families and the community in general, if there were those who would take the trouble, and be at the expense, of proceedings to vindicate their personal liberty and civil rights before the courts of law.

Both in England and Scotland, therefore, there exists a general overstrained delicacy of the law in reference to cases of mental disorder, which, although at first sight it may appear in accordance with the spirit of the age, will, on a closer scrutiny, be found really unsuited to its benevolent and scientific character, and to the humane curative system now prevailing in establishments devoted to the

¹ Hume quoted and enforced by the Lord Justice-Clerk, in the trial of Gibson for fire-raising in December 1844.—*Criminal Law Reports*.

treatment of mental disease—so different from the prison-houses of former times. In consequence of this, while a merely nominal protection is afforded to the liberty of the subject, the real welfare of the individual concerned and of the community, the true interests of persons and property and society, are actually injured or left exposed to serious hazard; and the unfortunate individuals, thus allowed to go at large and unlooked after, are not unlikely ultimately to be convicted, and criminally punished, for acts of violence or mischief, or injury of some kind or other, when in justice they ought to be viewed as truly insane, and more or less irresponsible agents to human law. In short, that very law, by the mistaken delicacy of which these sufferers may be almost said to be incited to illegal acts, does not hesitate to award severe punishment for them, though it, and not they, may be regarded as the truly guilty.

Now, among this class—the class namely, of the mentally and morally diseased—I hesitate not to place the habitual drunkard or dipsomaniac, as already described at the outset of these remarks. I consider that his condition is strictly one of combined moral and mental insanity, and the consequence of a vicious impulsive propensity—for I cannot in such a case denominate it simply as a vice; and I regard it as rendering him incapable of the exercise of social duties and civil rights; and not merely so, but as lessening and altering the nature of his culpability in reference to crime, and thereby his liability to punishment of the same kind, or to the same extent, as the other members of the community. That the excessive uncontrollable desire for intoxicating drinks is a disease, and that it is symptomatic of some abnormal cerebral condition which gives it the character of a form of insanity, cannot be doubted; and it should be always kept in mind that this condition is not so much produced by intoxicating drinks, as it is by that which created the desire for them. Mental derangement is discoverable only by manifestations or signs of the physical organs. We cannot reach the state of the mind except through the body. There is, so to speak, no pulse of the soul distinct from the bodily pulse. Thus a man hears strange sounds, he sees phantoms or illusory appearances, he utters absurd and irrational thoughts, he acts violent or grotesque actions; and from these physical signs the physician arrives at the fact of the existence of mental insanity. But the physical proof in each case must be taken for its own authority. There can be no absolute rule for insanity developing itself in any particular

physical sign. Hence its physical manifestation may be addictedness to drinks, as well as to hallucination of ideas. To declare whether it is so, or not, is as much a question for medical skill in the former case as in the latter. But medical observation has declared that dipsomania is a physical proof of mental disorganisation, and therefore it appears to me that such cases stand exactly on the same footing as other forms of insanity; and that, as it never has been questioned that Government may deal with insanity, it seems to be equally within its province to deal with dipsomania. Surely, viewed in the light of common sense, and sifted and scrutinised by the strictest rules of induction, the confirmed dipsomaniac ought to be regarded as of "unsound mind," or, as I would rather call it, "diseased mind," *non compos mentis*, and should be taken care of for his own sake, for the welfare of his family, and for the good of society.

The accidental drunkard, or one who gets drunk on an occasion inadvertently, becomes a proper object during his brief deprivation of self-control for the home restraint of a lock-fast closet, or for the more public award of a night's lodging in a police cell. Again, the occasional or paroxysmal drunkard, after intervals of time during which he has perfect power to resist the temptation, enters suddenly on a short course of excessive indulgence, or on a "ramble," as it is vulgarly styled. This, from some peculiar condition of health, but more particularly in consequence of mental constitution and temperament, induces an attack of what has been called *delirium ebriorum*¹—which absolutely requires, while the fit of madness exists, the most prompt and complete restraint; and for this purpose, those who come in contact with him should assuredly have most summary legal powers to act without delay in committing him to durance, either in a lunatic asylum or a prison,—or what would be preferable, in an establishment such as I shall afterwards recommend,—

¹ "What has been called the *delirium ebriorum* is nothing more nor less than a protracted form of intoxication, an affection of the brain and membranes, in which there is great vascular excitement, usually from the direct and immediate action of alcoholic liquors. It is marked by an uncontrollable desire for more drink, which, when gratified, excites to further imperious demands, begetting indecorous conduct and engendering passions so wild and vicious, that when the hereditary mental constitution is imperfect, and the previous habits loose or depraved, not unfrequently lead to the perpetration of violent and criminal acts."—*Dr Forbes on the Pathology of Delirium Tremens, and its Treatment without Stimulants or Opium*, 1854, p. 7. Sutherland and Knox.

to secure personal or public safety, and a speedy recovery. A somewhat longer and more systematic course of drinking, in highly sanguine temperaments and nervous, irritable dispositions, induces by alcoholic accumulation an attack of *delirium tremens*, and this also necessitates seclusion and close surveillance; and in such instances the aid of the law, in imposing restraint when required, should always be easy and expeditious. But still more necessary is it to restrain, and that by legal authority, the insane habitual drunkard or *dipsomaniac*, whether he happens at the time to be under a fit of the delirium ebriusum from suddenly increased excess—which is frequently the case—or of *delirium tremens*, which occasionally occurs from causes which I have elsewhere fully explained.¹

The course of the habitual drunkard is nearly the same in every instance. A process of mental deterioration goes on gradually and simultaneously with the habit of indulgence; the main desire of his life is how to obtain liquor; his capacity for business is confined to the means of gratifying his leading desire; moral control has lost its sway over him; he has no power to resist the propensity whenever gratification is within his reach; he has, in fact, become the involuntary slave of the vice, and would sacrifice his last sixpence or his shirt, or sell his soul to the devil, for one drop more, rather than be disappointed. Yet, strange to say, the poor creature, in this condition, has no pleasure in drinking. He takes it, not sippingly and with *gusto*, enjoying it as the *bon vivant* does, socially or convivially, but gulps it down in large quantities, away from society and observation, and even as it were a drug; and the only satisfaction derived from the act is that it secures blunted feeling, insensibility to the wretched state of mind which prompts the desire, and an escape from the fancied miseries of his existence. When this has gone on for some time, although a suspension of the use of stimulants be imposed by the interference of friends, or by the occurrence of an attack of either of the two forms of delirium mentioned, yet his mind has suffered so materially, that, unless continued control be exercised over him, and this for a very considerable time—which is not often practicable in the present usages of society, and is contrary, as I have shown, to the common law of the land—he returns immediately like the dog “to his vomit; and like the sow that was washed to her

¹ For a full elucidation of the pathology of *delirium tremens*, I would refer to the treatise above quoted, which first appeared in the *Monthly Journal of Medical Science* for June 1854, and was afterwards enlarged and reprinted in August of the same year.

wallowing in the mire;” and his progress towards some incurable form of insanity, or to an early death from some other superinduced disease, is certain. His moral faculties become more and more diseased, his intellectual powers weakened, disturbed, or at last even annihilated. He becomes either facile or wasteful, or incapacitated for transacting the ordinary business of life, or he is mischievous, and commits homicide or suicide; these various results being induced according as his natural disposition and passions may urge, or his hereditary predisposition may incline, or some previous injury of the head or disease of the brain may precipitate him.

That such, more or less, is the condition of the dipsomaniac, and that these consequences may, and do, frequently result, cannot be disputed. And yet, because the unhappy victim of this disease does not fall strictly under the present legal definition of unsoundness in mind, he is permitted to go at liberty; any interference in the shape of control is illegal, and his nearest and best friends, and he himself, are deprived of the only means by which his cure could be effected, and his restoration as a useful member of society accomplished. He is thus permitted, without any barrier being placed, or allowed to be placed, in the way, to hurry himself on to ruin, reducing his own family, it may be, to beggary, perhaps even to disgrace, and at last to accomplish his own sad death, or be convicted and punished for some criminal act committed in an hour of intoxicated madness, for which he is nevertheless held responsible in the eye of the law. In the latter case, indeed, the total neglect of the law to provide for this humiliating disease, is well illustrated by its viewing that very circumstance, which had deprived the criminal of self-control, to be not a palliation but an aggravation of his guilt. There is a deliberate injustice and inhumanity in thus permitting a man to expose himself to the penalties of the law, when it has been long apparent that he has not the power to govern his own will and reason; for in such instances the drink cannot be said to be taken voluntarily—which is the assumption of the law—it is taken involuntarily, and with no reflection as to its ultimate consequences; and there is a most manifest injury inflicted on those connected with him in allowing them to be brought to trouble or beggary, when the arm of the law might be strengthened to shield them.

But, to glance for a moment at the case as regards the crime which the dipsomaniac is perpetrating against himself, another argument will be found why the arm of the law should arrest him. He

is, in truth, committing suicide. He knows he is doing it, and yet he cannot stop his fatal career; sometimes the result does not come so quickly as he desires, and he leaps a bridge, or applies a pistol to the head, or a razor to the throat, to escape from an intolerable existence. Now, Government has no hesitation in putting restraint on the person in cases of suspected or attempted suicide. It would never wait for the act if it knew or could see the intention, or a course of conduct implying suicide as the result. Why, therefore, if drunkards of the dipsomaniac class are truly and virtually suicides, and that mentally as well as physically, should they not be subjected to the restraining power of the law? It cannot be called punishment in such cases, for the term is inappropriate. But it may be objected that suicides proper and dipsomaniacs have this essential distinction,—that in the former self-destruction is the end aimed at, in the latter self-destruction is the mere consequence, not the real object. This, however, is a fallacy. The object of the suicide is not destruction; destruction is only the means of attaining his object. His object is the attainment of fancied happiness, or escape from fancied misery; death is but the way by which, in his disordered state of mind, he seeks to reach it. The same object is the drunkard's: drink is the means, but death is the result.

Almost every medical man in ordinary practice, the superintendents of asylums, and the sheriffs of counties, must have met with instances which illustrate all I have now stated; and within my own observation I could quote cases of the most aggravated and painful kind arising among families, even in the best circles of society, entailing heart-rending distress, endless annoyance, and sudden calamity—cases in which the friends of the unfortunate victims would have thankfully committed them to establishments where restraint, suitable seclusion, and treatment could have been carried out, had they had the legal power to do so. Well would it have been for many hundreds of individuals in this country, if such had been a lawful step. Many would have been saved from going to asylums ultimately—mere wrecks of humanity—who by timely restraint might have not only had their reason preserved, but also become useful and even prominent members of society.

The only advance made in the higher courts in this department of legislation, previously to the recent Lunacy Act, has been the admission, that *furore from drink* is a sufficient plea, not only for sending a man to a lunatic asylum, but for detention there for some time after

the effects of the liquor have passed off. This was the deliverance in the Court of Justiciary¹ (Dec. 8, 1855), by a majority of the Judges, in the case of a process of suspension and liberation, raised by a gentleman of fortune in Elgin, against the Procurator-Fiscal of that place, for confinement under an order of the Sheriff in Morningside Asylum.

The evidence given under the Lunacy Commission of 1855, as reported in 1857, furnishes proof that a better feeling now prevails in the minds of many of our local judges, who come more in contact with such cases as those we have mentioned. Mr HUNTER, Sheriff of Dumbarton and Bute, referred to the difficulties he had felt in disposing of dipsomaniacs; and, while he expressed his decided opinion, that they are not cognisable under the statutes of lunacy, he also expressed his regret that it was so; for he says:—

"I think oinomanias are not cognisable under the statute. Dr Smith was clearly of opinion that they were not, and other medical men held the same opinion. I think it would be very desirable that there should be some power of holding these persons to be insane; or, at least, of so dealing with them as to prevent them from being dangerous to themselves or to others. As to the general subject, my view is, that there should be an absolute change of the whole system; but a good deal depends on how far you are to have the means of defraying the expense of the requisite machinery."²

Mr Christison, Sheriff of Ayrshire, again says:—

"As to cases of insanity from drinking, I think it would be very desirable to have some power to place them under proper restraint, because it is really a form of insanity; but any interference is a matter of so much delicacy, that I cannot see my way through the obstacles to legislation on the subject. I have seen some very lamentable cases. It would be more reconcilable with our feelings to interfere, if such cases occurred only among those naturally weak in mind and dissipated; but there are cases, on the other hand, where you can see the extreme difficulty of interfering. Sometimes men of the highest mind and greatest intelligence in the country, are subject to that infatuation; and it has often occurred to me to ask, What could you do in such a case?"—P. 408.

Then Sir Archibald Alison says:—

There is one matter, perhaps peculiar to Glasgow, which I wish to bring under your notice. There is a class of people whom we find it very difficult to deal with in practice,—patients who become insane from the effects of excessive drink.

¹ "No doubt this violence may arise from drink; but if this man takes immense doses of drink every day, so as to cause fits of fury, ought he not to be put under the guardianship of the statute?"—*Speech of the Lord Justice-Clerk, Report of Decisions of Court of Justiciary—Scottish Jurist*, vol. xviii., p. 83.

² Appendix to the Report of the Royal Lunacy Commissioners of Scotland, 1857, p. 454.

ing. It constantly happens that we have applications at the instance of relatives, who come forward and state that such a person is most dangerous, that he threatens the lives of his wife and children, that they cannot live in the house with him. The man, or woman, is probably immediately sent to the asylum; but in ten days or a fortnight they become perfectly sane, in consequence of having been kept sober. They then make the most urgent applications to be liberated; and when you go to visit them, you find them as sane as any person can be. Within forty-eight hours after they are liberated, they drink a bottle, or a bottle and a half, of whisky, and become perfectly mad again. The relatives then come and beg, for God's sake, to put them in again, or they will all be murdered. These cases are of very frequent occurrence, and it is very difficult for the sheriff to dispose of them; because, on the one hand, you feel a reluctance to let a person out, who, by drinking a bottle of whisky, will commit murder the next night; while, on the other hand, we have no authority to keep a man in an asylum who is perfectly sober, and, therefore, perfectly sane. It has struck me that the only probable solution of this question would be, that some power of this sort should be given; that, on the fact being certified by medical men, that a person has become insane and dangerous from drinking, the Sheriff should be authorised to confine him for a limited period, say three months, in order, if possible, to break the habit of intoxication. There may be objections to this, that it is an injustice; but at present we are obliged to let out a person who, we know, will be dangerous in forty-eight hours, although he is sane at the moment. In one sense, such a power in the hands of the Sheriff might be said to be a punishment for drunkenness, but it may also be said to be a preservative measure against dangerous consequences to society, arising from the present system. I have more than once thought of making such persons find security; but they get out, and you never hear more of them till some act of violence takes place. I do not know any way of their being at large, and yet under the control of the Sheriff. At Gartnavel, they sometimes give a man leave of absence; but that is a private arrangement. The persons I refer to, get drunk the moment they get out; and the great difficulty lies in this, that they become perfectly sane after a short period of compulsory sobriety."—P. 379, 380.

This evidence of Sir Archibald Alison's does not so much apply to the class of insane drunkards to which these remarks especially refer; but it goes to prove the necessity there is for summary powers of temporary restraint in such instances of the delirium ebriosum and delirium tremens, and this would be well accomplished in institutions such as those I propose should be established, or in the nearest asylum or prison, if the case was urgent; and also the necessity for powers to prolong detention in such instances, if the peculiarity of the case warrants such, for protection and cure.

The medical men, also, who were examined on this part of the Lunacy Inquiry, gave somewhat similar evidence. Thus, Dr SKAE says:—

"I stated that I had not myself found much difficulty, generally, in treating cases of cinomania or insane drinking, in consequence of the want of any legal enactments regarding such cases. I ought to have added, that I have in one or two cases felt very much the want of the legal recognition of this affection as a form of insanity, requiring and justifying the seclusion and restraint of an asylum for its treatment; and have had to deplore the fate of several patients, who were prematurely liberated, from this defect; and that I am fully alive to the great necessity there is for some jurisdiction on this subject for the protection of life and property. In regard to a remedy, it has often occurred to me that an approximation to the French practice might be advantageously introduced into ours, in regard to such cases (and, perhaps, to some others of nervous disorder, not generally regarded as amounting to insanity by medical men, or at least by the public, but requiring control), viz., by appointing a committee of the person, consisting of the two males nearest of kin to the party, two medical men, and the Sheriff of the county; and that this committee might have the power given to them of depriving the individual, in such cases, of his personal liberty, by consigning him to an asylum or house for the treatment of nervous maladies, etc., until such time as the committee was satisfied he was fit to go at large. Such cases to be reported to the inspectors of asylums, commissioners, etc., as the case may be; and the house or houses where such persons were kept, to be subject to inspection, etc., like asylums in England."—P. 435.

Dr W. A. F. BROWNE, late of Dumfries, but now justly rewarded by his appointment as one of the principal Commissioners of Lunacy, for long-continued, humane, intelligent, and skilful services in the treatment of the insane, gave the following evidence:—

"We have not many cases from delirium tremens, but we have several cases which may be called dipsomanias. We have sometimes cases with us whom we have got into a sound state of mind, whom we would keep longer if we had the power. We have also some who are well, who would not get out if their friends had the power to detain them. No doubt, I can dismiss them if I like; but it is not easy for a medical man to assume the responsibility of dismissing a patient in the face of the warnings of his family. We have had cases where patients claimed to be dismissed, but the results were very painful. In two cases, where the relatives refused to receive back the patients on recovery, the Sheriff interfered on my representation, and liberated a husband in one case, and a wife in another; but the results were not agreeable, for they were not received by their families. The wife was taken to a house in Perthshire; and whether her case was ameliorated, I do not know. The husband was sent to another asylum, where he remains.

"Question.—Would you think it advisable that patients addicted to intemperance should be sent to an asylum for a certain time, and that the Sheriff should have the power of keeping them there for three or six months certain?

"Answer.—I think it would be very beneficial; for the whole hope is that, by length of time, old habits may be eradicated, and new ones engrafted. There is no special treatment generally required in such cases. It is only the re-

covery of a general healthy tone of the system, and a lengthened abstinence, that can make them forget their 'wallowing in the mire.'—Pp. 520, 521.

The last medical evidence which I shall quote is that of Dr JAMES SIMSON, of this city; and it is so very excellent and so much to the point in every respect, that I shall quote it at length. He says:—

"I have lately seen a number of cases, both in prison and in private practice, which have made me anxious to see some modification in the law, as to the mode of dealing with persons whose habits of intemperance have rendered them incapable of taking care of themselves, if not insane. There is a case, at present in jail, of the wife of a most respectable merchant, with whom a great many remedies have been tried, and who, having got a little violent, was put by her relations under what is called Lawburrows. She was there eight months, having been convicted of threatening her husband's sister. She was quite aware of what she had done, and professed repentance. She got out, and her husband took a lodging for her in the neighbourhood; but she was as bad as ever the very next day, and the warrant was again put in force against her. I know, also, of the case of a gentleman highly connected, and who belonged to the army for five or six years; and who, having got into loose habits, was dismissed the service. He came to Edinburgh, where he had a great number of fits of drinking; I saw him twice under delirium tremens. He was put into confinement, and they were obliged to put the strait-waistcoat on him. On one occasion, he would have killed his keeper, had not another person gone in at the time. After he got better of one of these fits, he agreed to go to Skye. He went there; but disappeared in about a month, came back to Edinburgh, and almost immediately entered on his old courses. I know the case of another gentleman, who is about 70 years of age, who had at one time a very considerable fortune. He was in the army too, but afterwards got into a very dissipated state. He now lives with his housekeeper. I have known him for three months at a time never sober. His housekeeper, his relations say, they believe, is getting quit of his money as fast as she can, and he is living in the utmost indulgence, although he maintains he never takes a drop. I wrote to his relations in the country lately, and his brother came to see him, but failed in doing any good, it is believed from the influence of the woman. He is still living in that disreputable state; and now the woman has got her husband and two children taken into the house to live with them. Sometimes she gets large sums of money from him. I know the case also of a young man, the heir to an entailed estate, who lives with the lowest of characters, gamekeepers, etc., and is constantly drinking with them. He is to be seen going about the country like a low blackguard. Once or twice he has threatened to destroy his father's life. Now, most of these cases, when sober, are quite well, and as sound in their senses as we are; but some of them tell us they like the drink, and can't help it, and that they are unable to control themselves; but at present we can do nothing with them. I know also the case of a man who had got into these habits, and who had got to that state, that he said that were hell-fire between him and the glass, he could not resist the whisky.

"With regard to the mode of dealing with these cases, I would propose that you should license houses as private asylums for them, or have a separate part in a lunatic asylum; and that on an application of two relations to the Sheriff, with a certificate by two medical men, that the individual was unfit to conduct his affairs, he should be consigned to such an asylum. I think it quite a reasonable thing to put such persons under restraint; for, there is no doubt, it would both benefit them and benefit society. I would recommend confinement till the individual was certified to be in a fit state to be let loose, and to manage his affairs.

"Question.—Do you think there is much prospect of reclaiming them?

"Answer.—Some of them you can't, perhaps, reclaim; but if you had power to keep them, it is difficult to say what beneficial effect moral restraint might have. There is no doubt, however, that if you have a blackguard relation going about in a disreputable way, and doing mischief, you would do a positive good to the man himself, as well as to his friends, by confining him. I would recommend a special asylum for the purpose, where there should be wards and detached places, and that you should license people for the purpose; and I have no doubt you would easily get people willing enough to undertake the office. I knew a case some time ago, where the relations came to me asking me for a certificate of insanity. I said to them, had you come a fortnight ago, I could have certified him as insane from drink, but you have come too late, he is not so now. I knew of a gentleman who had a son who got into the most abandoned habits, whose friends were obliged to send him out of the way. The son wrote a most admirable letter of repentance to his father, promising that, by the blessing of God, he would do so and so. The lad was allowed to come back, but he disappeared again very shortly, and in about three weeks was found in one of the lowest places in Edinburgh. These are all, I think, cases of madness, in the true sense of the word, and if they are not dealt with as such, they should be.

"Question.—How would you draw the line in such cases?

"Answer.—I would take such cases as the friends petitioned about, and I would require two medical men, who were dispassionate in the case (not the family surgeon), to make a report on it, certifying that the individual was in an unsound state of mind, and incapable of conducting his affairs; and I would then get the Sheriff to make an investigation by two medical men of his own appointment.

"Question.—How would you do in the case of paupers?

"Answer.—Let the public authorities petition the Sheriff, if they come to be nuisances. Let the police, the inspector, or any person who has an interest, and who considers them nuisances, make application to the Sheriff. There is no doubt that these parties do a world of mischief to others besides themselves. They reduce their families to poverty, and encourage others to evil courses. I am satisfied that it would be a great benefit to society to have the power of confining them. At present, they snap their fingers at you, and though threatened to be put into an asylum as insane, they tell you they will be out again in a month. The number of such cases that have come under my knowledge is painfully great."—Pp. 524-525.

Now, the inferences which I would draw from these strong opinions are:—

I. That the man furious or delirious from drink requires immediate restraint and surveillance in an asylum or elsewhere, for some considerable time, and until he has completely recovered from the fit.

II. That the dipsomaniac must unquestionably be considered as an insane person—as labouring under such weakness of the mental faculties, and such perversity of the moral feelings, as to warrant, not only the imposition of restraint, but its continuance for a considerable period of time, probably two or three years, so as to afford the only chance there is that self-control may be regained, and ruin averted.

III. That the law gives too limited a definition of insanity, when it does not recognise these extreme cases as falling within its powers; that, consequently, when such cases have been treated in asylums, they have been submitted to in some measure, or to some extent, voluntarily, or been detained illegally,¹ and in neither case so successfully as would have been under other circumstances.

After such evidence as the foregoing, it was impossible for the late Commissioners to avoid expressing somewhat decided opinions, which they did in the following terms:—

“There is one form of insanity, namely, that which results from, or is connected with, over-indulgence in intoxicating liquors, which demands some special observations. During the course of our investigations, we have frequently observed the difficulties that attend the treatment of such cases. The first which occurs, is the question whether the patient can be considered and treated as a lunatic. Mr Hunter, Sheriff of Dumbarton and Bute, is of opinion that cinomanias are not cognisable under the statutes; and this view is held by various other authorities, both legal and medical. But in cases where the opposite view is acted upon, and the patient is placed in an asylum, his speedy restoration to sanity, as soon as the stimulus is withdrawn, becomes a source of great embarrassment. For, with recovery, the legal power of detention is lost; and the patient is accordingly set at liberty before his system has become ha-

¹ This has undoubtedly been experienced and practised to a considerable extent in various asylums, and apparently admitted by Dr Skae, in the evidence quoted, so far as the Morningside Institution is concerned. Besides, houses, such as those at Trinity, Joppa, and in the Island of Skye, are mentioned in the Commissioners' Report as having long been open for the reception of such cases; and our own House of Refuge appears at present to have many inmates of this description, which, if admitted voluntarily, are at least detained by compulsion, and without legal authority.

bituated to the withdrawal of the stimulants. Consequently, he again gives way to intoxication; in all likelihood impoverishes himself and his family, and not improbably ends his career by committing murder or suicide. In the evidence which was given before us, various suggestions are made to meet this crying evil; but they all resolve themselves into the recommendation to deprive the patient of his liberty for a period sufficiently long to allow the system to accommodate itself to the want of stimulants, and thus to enable the patient to resist the morbid craving which their withdrawal produces. There is no doubt that the evil is one of great magnitude in Scotland, and more especially, perhaps, in the western districts. Of 559 cases, admitted in the years 1853 and 1854 into the Glasgow Asylum, 110 were traced to intemperance. Of 448 cases, admitted into the Edinburgh Asylum in the same years, 56 were ascribed to the same cause. The number of cases due to intemperance may, however, have been considerably greater in both institutions, as during the above period 87 cases were admitted into the Glasgow Asylum, and 112 into that of Edinburgh, in which the cause of the malady was unknown. Any measures, however, that may be adopted to meet this evil, should be as simple and uncomplicated as possible, in order to insure their being carried into effect, not only in the cases of individuals possessed of pecuniary means, but also of those belonging to the lower ranks of the people. The necessity of the case has, in the meantime, led to the establishment of particular houses, in some of which, patients are received at their own request, while in others they are placed by their friends, and illegally detained by force. Miss Wotherspoon's house for females belongs to the former class, as does also an establishment for men in Skye, the chief advantage of which seems to be remoteness from any house where intoxicating liquors can be procured. As places where such patients are detained against their will, may be mentioned a private house at Trinity, near Edinburgh, and the House of Refuge, in that city.

From a consideration of the above facts, it appears to us highly important that some plan should be devised whereby a degree of authority might be legally retained over such cases, allowing, at the same time, a certain amount of freedom. Such a check might, we think, be exercised, in a very salutary manner, by first placing them in asylums, and then allowing them to leave on probation, which should terminate at a fixed period, or be subsequently extended, as might be deemed advisable. The warrant remaining in force, the patient could be at once re-admitted, should it prove necessary, without fresh certificates. A patient placed under this modified restraint would, we conceive, be in a favourable position also as respects treatment; for, whilst exposed to temptation, the power of again placing him under restraint, thus impending over him, would act as a salutary check, by strengthening his self-control, and weakening, and perhaps permanently destroying, the morbid propensity. In this way a cure might ultimately be effected.”—Vol. I., pp. 242, 243.

The Commissioners further, in their summary of suggestions (No. 14) for future legislation, urged Government to devise some “special regulations for prolonging control over cases of insanity arising from intoxication.”—Vol. i., p. 256.

This was a very moderate recommendation, probably much short of what some of the Commissioners may have deemed requisite; and, had it been carried into effect in the Bill framed by the Lord Advocate and now the law of the land,¹ an advance would have been made in the right direction of social legislation, and a great benefit thereby conferred on the country. But it would appear that the difficulties attending the subject deterred the Lord Advocate from proposing any legislation regarding it, in connection, at least, with the proper Lunacy Act; and, therefore, it appears desirable that the subject be now placed before Government in a stronger light, and the necessity shown for even more being done than the Commissioners suggested.

It may be that by the new Act some may consider that the dipsomaniac is recognised as a lunatic. It differs so far from that of 1841² that the person now indicated for restraint is an "insane person, an idiot, or a person of unsound mind," (sect. 35); and it is thus assimilated to the last Act for England, already referred to. But there is this to be said in its commendation that, while the interpretation clause of the English Act is quite barren of information as to what is to be understood by mental unsoundness, the corresponding clause in the Scotch Act announces that "the word 'lunatic,' shall mean and include any mad or furious or fatuous person, or a person so diseased or affected in mind," etc.—(Sect. 3). Now, this phrase, "diseased in mind," is much more psychologically correct than that of "unsound mind," which, when rigidly considered, means anything, or nothing, in respect of insanity; and, if it can be shown, as I think I have done, that the drunkard, as described, labours under a form of mania, the result of an unhealthy condition of the brain, and, further, that in consequence of this he is found, in the terms of the same clause, to be "unfit, in the opinion of competent medical persons, to be at large, either as regards his own personal safety and conduct, or the safety of the persons and property of others, or of the public" (sect. 3),—then possibly the poor dipsomaniac, when under the more direct, acute, violent delirium of drink, may be sent to an asylum with greater safety than heretofore, and even detained

¹ 20 and 21 Vict., c. 71. Act for the Regulation of the Care and Treatment of Lunatics, and for the Provision, Maintenance, and Regulation of Lunatic Asylums in Scotland. (25th August 1857.)

² 4 and 5 Vict., c. 60. An Act to Alter and Amend Certain Acts Relating to Madhouses in Scotland; and to Provide for the Custody of Dangerous Lunatics. 22d June 1841.)

there for some time after it has abated. Supposing, however, that the present law gives this facility, I would accept it only as an instalment of what the necessity of the case demands, and would still desiderate more distinct legislation on the subject, and urge the establishment of institutions, such as those suggested in the Appendix, distinct from Lunatic Asylums, where such cases could be treated and the patients detained till a thorough cure was effected. But I am apprehensive that the legal profession will not consider that there is anything in the enlarged definition of the insane given in the Act, to afford sufficient ground for departure from the ancient *dicta* of the Courts of Law, both of Scotland and England, in the latter of which countries the term, "unsound mind," has been legislated on since 1845; and thence that the total or absolute insanity of an individual, or the existence of a decided delusion, will still be deemed necessary for restraint, where neither imbecility nor fury are alleged to exist.

It is, I believe, only in cases of the more complete states of mental insanity that, under the present statute as under the former one, a dipsomaniac can be sent into an asylum. The greater number of instances in which there is weakened mental power combined with excessive moral perversion, and which ought, for the preservation of personal and social decency, comfort and prosperity, to be subjected to restraint, will derive no benefit from the change in the law. Thus many most necessitous objects for physical, moral, and mental treatment, are shut out from the timely benefit which ought to be extended to them, and a blasting curse is inflicted on individuals, families, and the community, extending down no one knows how far, or how widely, into posterity. Then, of what avail is it if the unfortunate being is reduced to complete imbecility before he is sent into seclusion? In such a case the time has gone by for benefit, and he is doomed to spend the remaining days of his life in a state of the most humiliating fatuous existence.

It will be found then, I apprehend, that under the present statute rarely any but the furious and dangerous will be placed under restraint, and even in the majority of such cases, what comfort can there be in the step taken? The experience of all superintendents of asylums—and the recent Act can make no difference—has been that such persons are pests in these establishments, disliked, it would appear, even by the other insane; and that the result of treatment, in most cases, is very unsatisfactory.¹ A man is not many weeks under restraint,

¹ Of the causes of moral insanity, by far the greater number were characterised

denied of course all intoxicating liquors, when the excitement from the alcoholic poison passes away, and he becomes comparatively quiet and sane. He now demands his liberty, which he knows he has a right to possess, unless it can be affirmed that he is decidedly insane; and so long as he is detained, which is generally not very long, he is troublesome in the extreme, from his clamorousness, deceitfulness, lying, and general perversity, disturbing the proper arrangements of the institution. He soon, however, obtains his liberty, for there is, in such a case, *no legal power of detention*; and, as he is still in a weak state of mind, and his dispositions perverse, the length of time during which he has been under control and treatment being quite insufficient to produce any change on the abnormal condition of his mental and moral constitution, or to remedy that peculiar condition of the brain of which the uncontrollable craving for stimulants is a symptom, the result is that the moment he is at large he returns to his former practices with greater recklessness than ever, and the last state of that man is worse than the first. Now, too, his condition is probably complicated and aggravated by feelings of animosity towards the medical man who placed him under restraint, or the friends or other parties who were concerned in it. Such, therefore, being the unsatisfactory result of too early liberation from restraint, and the consequent cessation of an absolutely necessary course of curative treatment, medical men, unless in instances of furor or threatened injury to life, are indisposed to incur the responsibility of imposing restraint, which, while productive of no lasting benefit, is afterwards apt to prove to themselves a source of annoyance or even threatened danger. Thus all efforts for the wretched dipsomaniac's welfare are frustrated, in consequence of the facility in obtaining liberty being greater than that for imposing restraint at first.

In a word, the facility for legal interference, in the present condition of the law, is so limited, as to be totally inadequate to meet the necessities of the case; and in those cases in which the law is put in force the result almost uniformly is unfavourable,—without benefit to the individual chiefly concerned from much too early

chiefly by an insatiable and uncontrollable craving for stimulants, the loss of self-control, and a shameless and complete disregard for truth. Such patients are the most troublesome inmates of an asylum, and the results in regard to them are almost uniformly unsatisfactory. Some legislative enactment for the control of such persons, and their treatment in houses specially set apart for that purpose, would save many lives, and many families from shame, grief, and loss of property, or total ruin." *Dr Shaw's Report of the Royal Edinburgh Asylum for the year 1854*, p. 21.

liberation, or to other parties from the renewed annoyances to which they are exposed, and from increased danger of injury to property or life.

In so far, therefore, as the law at present stands, although no case has yet been tried, I firmly believe there is little reason to hope that the difficulties in disposing of the dipsomaniac are removed; but, on the contrary, that the matter rests very much, if not altogether, as it did before the last Act was passed, and that the complaints of all who have given any attention to the subject remain undressed. I consider that Government have given the go-bye entirely to the suggestions of the late Lunacy Commission,—no doubt partly owing to the way in which the late Bill was hurried through Parliament, but probably also owing to an aversion to raise discussion, and call forth denunciations from the unreflecting and the interested on what might be alleged to be an infringement of the liberty of the subject.

Some, perhaps, may take very high ground against legislation for the dipsomaniac class of the insane; some, possibly, may out and out object to legal interference with any form of drunkenness, on the ground that it is an overstepping of the nice and proper distinction between what may be called *civil-moral* and *merely moral* jurisdiction, and thus throwing open the door to interference with mere *mental* immorality, though unconnected with any of those physical demonstrations which, in the present state of law, bring that immorality under its cognisance. But the conclusion is unfounded. A distinction is quite appreciable between the moral crime of drinking, and the moral crimes of infidelity, disregard of religion, coveting, evil speaking, and such like. These are *natural* breaches of morality. They are the products of the natural deceitfulness and wickedness of the human heart. But drinking to excess is not natural. The indulgence in intoxicating drinks is purely artificial. The desire for them, particularly the more spirituous, is entirely acquired. The taste, indeed, is easily acquired,—so much so as almost to imply a palatal propensity for them; but it is the exciting effects, themselves unnatural, which attract, and the taste soon follows on the sense of pleasure, or the experience of relief from pain and oppressive misery; and in proportion to the increasing mental disorganisation springing out of indulgence, is the frequency of the acts of gratification. But further, and more particularly, since the direct effects resulting from excessive drinking are that they pervert those

powers of the mind which distinguish man from the brute creation, overthrow reason, and consequently lead to the infraction of all the laws, natural and conventional, of social order and existence, assuredly it cannot be beyond the province of Government to impose some legislative checks.

But, more than this, the power of Government to restrain the use of intoxicating liquors has been already recognised and exercised. The reason for the exercise—and I do not say that it has been wrong, since a vast amount of evil has been prevented, and good obtained by it—is the abuse of those liquors by a small minority of the public. For the guilt of this minority, Government has put a restraint upon the personal liberty of the innocent public. I say *personal liberty*, for it is as truly so, to remove that from any one to which he is entitled, as to remove him from it, or to bind him so as to prevent its being used or approached. It is, therefore, not a stretch of this recognised power, but rather an inductive result of it, recommended too by reason and justice, equally wise, and perhaps more equitable, to apply the restraint on the abuse, and thus affect the guilty only, rather than upon the thing abused, and thereby affect the innocent and the guilty indiscriminately. No doubt one great object of legislation may be regarded as prevention as well as cure. But what is wrong is attempting the prevention merely, and not adopting the cure likewise. The Government tries to prevent the abuse by restraining the use; should it not also try the cure by restraining the abuser?

If the above reasoning is correct, nothing can be more legitimate than the exercise of judicial powers over the various kinds of drunkards, according to their condition, social relations, and the apparent consequences of their acts. Thus the drunk and disorderly in our streets are properly taken charge of by the police as offenders; and those affected with the delirium ebriosum and the delirium tremens, if not in a position to be well and safely taken care of at home, are at once removed to an asylum or hospital, until the fit of fury or delusion pass off. But it is still more highly expedient, on every personal and relative consideration, that the dipsomaniac, the chronic insane drinker, should be suitably restrained *since he can no longer control himself*. This is the full and true limit to liberty of person. In this state he must forfeit his freedom for a while. He is no longer a voluntary drinker, but is hurried along to destruction, and also, probably, to the serious in-

jury of others. It is I consider, as much the duty of a good Government to interpose in this case, as if it was to stay the hand of the homicide or the suicide in their insane impulse. And let not this treatment—compulsory as in most cases it must be—be viewed in the light of a punishment, when the present good and the future benefits are taken into account. By such restraint, continued for two or three years, the low, grovelling propensity to excessive indulgence would probably be overcome—possibly obliterated—and the dethroned reason would regain its power and control. Good nutritious diet, exercise, wholesome air, and regularity of life, would affect a powerful influence on physical vigour, and through it, on the structure and functions of the brain; and amusement, occupation, and means of moral and religious instruction, would all assist in raising the individual from his disordered and debased condition. With improved mental vigour self-control and self-respect would spring up, so that there is every reason to believe that many of those, otherwise lost to society, would become useful members of it, and thus many families and dependants would be raised in the scale of society, instead of being sunk to the condition of paupers and burdens on it.

But merely to provide for *prolonged control in cases of insanity arising from intoxication*, as proposed by the late Commissioners of Lunacy, although likely to be eminently useful, would not meet the wants of the case. Power should manifestly be granted, under such restrictions as are proposed in the Appendix to this paper, to place under control those whose minds are disordered—not merely from excessive and continued drinking, but from that evident abnormal condition of the brain, of which the ever-craving desire for alcoholic stimulants is the proof or manifestation, but which gratification and an accumulating influence no doubt maintains and increases. Delay in such cases is dangerous, when the mental and moral condition of the dipsomaniac tends to violence, or even to a homicidal or suicidal act; and the deed may be done which timely interposition might have prevented. But further, timely aid may avert much irreparable confusion and mischief; for from what has already been stated it must be apparent that many cases are characterised by mischievous eccentricity when there is no existing delusion; or by disregard of the usages and decencies of society; wasteful, profligate extravagance; sottish imbecility; and variously mixed and disordered moral and mental phenomena, which lead to degrada-

tion and destitution. Why, therefore, should not the Legislature attempt to protect the property of the dipsomaniac, and of those connected with him, before he or they are irretrievably injured or ruined? Why should a good Government allow any of its subjects to go at large until the very latest possible time compatible with private and public safety, when all observation and experience points out the danger? Why should it not attempt to avert the commission of some horrible crime, rather than simply go through the accustomed forms of judicial procedure, in order to punish a man for what he can scarcely be held responsible for? or place him as a culprit at the bar, when his testimony would not be received in the witness-box? or find out, too late, that he really is a maniac, and sentence him at last to an asylum as a criminal? In fine, when it is known from hundreds of instances that the unhappy victim of this vicious propensity has no self-control—which properly ought to be the legal test of this form of insanity—why not make a timely, wise, and benevolent effort to save him? Why withhold from him the only remaining hope of cure? Why not prevent his going to a premature grave, or to beggary, or to a poor's-house, or to an asylum, to pass there a miserable existence, as an *incurable* lunatic? Liberty is sweet; personal liberty is a precious thing; but this, in truth, is a high price to hazard for it. To attempt to rescue an unhappy dipsomaniac from his dangerous condition; to restore him to a position of self-respect, and consequently self-control; to restore to families one who may become a well-doing, dutiful son, an industrious and affectionate husband and father, or wife and mother; or to reclaim to society one who would have become a pauper and a burden on it, but who may be made a useful member of it, would surely be safe, sound, and sagacious policy.

APPENDIX.

IN the preceding paper I have advocated new legislative provisions for the care of the Dipsomaniac.

I think that the supposed difficulties in the way of Government interference, are by no means insuperable, and that just and discriminating arrangements would sufficiently guard the liberty of the subject, and be very generally approved of by the sound-headed and right-hearted of the community—particularly by the medical profession, under the observation of which, so much that is vexatious in this department of social evil falls.

It will naturally be asked, by what arrangements I would propose to accomplish the purposes contemplated? I would reply by submitting the following plan, which, although drawn out in detail, I shall now merely sketch, so as not to distract discussion from the medico-legal principles on which the merits of the question must in the first instance turn:—

I. At least four *establishments*, in the first instance, should be opened in different parts of Scotland—say at Edinburgh, Glasgow, Dumfries, and Inverness, with all necessary arrangements for the reception, seclusion, comfort, and cure of different grades or classes of Dipsomaniacs. These institutions, if altogether under the Public Board of Direction, hereafter to be mentioned, should be made as much self-supporting as possible; or they might be under licensed management, as Private Lunatic Asylums are at present; but, in that case, subject to the observation and control of a Board, according to prescribed regulations. I most decidedly prefer separate institutions to any accommodation in existing Lunatic Asylums, as the various arrangements cannot, as appears from the statements by Superintendents of Asylums, be conveniently made compatible with

these, or so conducive to the accomplishment of cure; and, besides, it would be better not to raise more prejudice against the restraint of the dipsomaniac than is absolutely necessary, for many may feel strongly opposed to the idea that he, who, in the brief period of a few weeks, in consequence of abstinence from intoxicating liquors, *under restraint*, becomes comparatively sane, should be classed or associated with those who are in a greater or less degree decidedly insane.

II. A Board should be formed at each of these places, composed say of a Magistrate, a Justice of the Peace, a Clergyman, and a Physician, salaried of course, but only to the extent of being somewhat compensated for time spent in the transaction of business connected with these arrangements—the duty being understood to be viewed as of a benevolent character. The duties of this Board should be to meet from time to time to consider cases brought under its notice; to grant orders for reception and discharge as it thinks proper; to make regular visits to the establishment, in order to see that the various arrangements for the care, comfort, and cure of the inmates are properly carried out; and, in general, to consider all matters connected with the proper working of the scheme.

III. In all cases of complaint against the decision of these Boards of Direction—whether in regard to treatment or detention—appeal might be made in the form of a memorial to the Lord Advocate, who might order inquiry if he thought fit, and his judgment should be final; or, since there is now a Lunacy Commission, appeal might be made to them—their decision also being final.

IV. Applications for protection and cure might be made *voluntarily* by the Dipsomaniac himself, in which case he must be understood to agree to the rules of the Institution in which he placed himself, and to remain within it for such a period of time as the Directors consider likely to effect recovery from the insane desire for drink. Applications, on the other hand, for *compulsory restraint*, might be made to the Sheriff of the county in which the case occurs, by any friend, relative, member of the community, or Parochial Board, and the Procurator-Fiscal for the public interest, should also have power to make application in cases of very aggravated Dipsomania, where there is no relative or other party willing to do so; and, in such cases, it should be his duty to make the necessary inquiries, and to take the necessary steps, as an officer of

the Crown, especially in cases in which danger is to be apprehended from sudden outbreaks of fury—having recourse afterwards for expenses, on individuals or the parish, agreeably to sect. 85 of the recent Act: Of course, where the Procurator-Fiscal is the applicant, he should give due notice of his intended proceedings to friends or the parties whom it might afterwards concern as to expense of maintenance, etc. In the case of *voluntary* applications, they might be made at once either directly to one of the Boards of Direction, or to it through the Superintendent of one of the authorised institutions without the intervention of the Sheriff; and in this case, were facility given for escaping public observation, the applicant might the more readily be induced to place himself under voluntary restraint, which would be most desirable. In cases of *great urgency from violent delirium*, the Superintendent of any of these authorised establishments should be empowered to receive the individual without delay, although there may be no formal warrants or certificates, but he should take immediate steps to have the Act confirmed by the Board of Direction, within a short space (*say three days*) from the date of admission.

V. All applications for compulsory restraint should be in the form of a petition to the Sheriff, and should state the grounds on which they are made. They should, for example, state that the individual has been addicted to excessive indulgence in intoxicating liquors for so many years (not less than six years in the case of one manifesting simply imbecility); that all ordinary and available means of cure have proved unavailing; **THAT ALL POWER OF SELF-CONTROL IS GONE**, and that nothing stands in the way of the possible gratification of the morbid desire; that the vice has induced great mental weakness and perversion of the moral feelings—as evinced by (*more or less, as the case may be*), indecorous or indecent behaviour, disregard of truth, uncleanness of person and habits, or wastefulness and extravagance, or mischievousness or violence; and that altogether the mind of the individual has become so diseased in its operations, that person and property are alike uncared for, domestic peace and comfort, and family prosperity blasted, and good neighbourhood disturbed (*as the case may be*), or the life of the dipsomaniac himself or of others, endangered. On, in a case of short duration (an *acute* form of the disease), say even of one year's standing, the application might be made, if it can be shown that the individual complained of **HAS AN**

UNCONTROLLABLE DESIRE FOR STIMULANTS; and that when indulged in beyond a certain limit, in consequence of some peculiarity of constitution or cerebral condition from injury or disease, an outbreak of furious madness occurs, which places in hazard any one, or every one, within reach. On application might be made to the Superintendent of an authorised establishment, or to any licensed Asylum in the county for *pro tempore* care in the case of great urgency, where delirium exists in any form from intoxication. Thus would cases of the *Delirium Ebriosum* and *Delirium Tremens* be at once properly cared for, and immediate danger to life and property avoided, without any formal legal warrant or certificate, where such could not be accomplished in private without much inconvenience or danger.

VI. The principal statements contained in applications for compulsory restraint should be attested to the Sheriff by witnesses acquainted with the facts, and by the medical attendant of the individual, if such there be, from what he knows and has personally observed. The Sheriff should also in all cases require an opinion from another medical practitioner appointed by himself; and he should then transmit the evidence in writing to the before-mentioned Board of Direction of the district in which the case occurs, with as little delay as possible, and with these forward the individual to be restrained if the case seems one of urgency.

VII. On the Board being satisfied from the statements furnished to them of the necessity or desirableness of restraint being imposed, for the protection of property or life, the good of the community, or for the recovery of the individual, they should notify their opinion to the Sheriff, in order that he may issue the necessary warrant or certificate, and see that it is carried into effect; and they should forthwith make arrangements in the establishment, over which they preside, for the reception of the patient, and thereafter be charged with his suitable care and comfort, and if possible his cure.

VIII. The Board or Superintendent should not detain any person received into the Institution on account of an acute attack of delirium from intoxication longer than is absolutely necessary for complete recovery, unless with the consent of the individual; and in the chronic forms of the disease—the true dipsomania, they should grant

no warrant or certificate for a shorter time than six months, or for a longer period than two years,—although the friends of a Dipso-maniac might be allowed to remove him within these periods, provided no tendency to violence has been manifested in the course of the affection. In every case of removal the Board must be satisfied as to the reasonableness of the desired change, and have some assurance given them that the individual be properly looked after and cared for; and the Board should have full powers to *prolong the term of detention* in any case as circumstances may suggest, with the concurrence of the friends, even beyond the period of two years, which has been found by experience to be, in the great majority of cases, rather too short a period of abstinence for the chance of effecting a cure. They should also, while the term of detention at first agreed on is still uncompleted, have the discretionary power, with a similar concurrence of the friends of the person under restraint, to grant a trial of liberty for a certain period before final freedom is permitted.

IX. No individual restrained under the proposed regulations should be considered as altogether deprived of civil rights, but should have the power to execute any testamentary or other deed, or avail himself, under surveillance, of any external civil privilege on the attestation of the Board that he is in perfect sobriety at the time of doing so; that he is sane in other respects; that he is able to distinguish between right and wrong; that he fully comprehends the matter under consideration; and that he is not apparently instigated by any malice towards those who were the means, or who gave their consent towards placing him under restraint, if the deed concerns such.

All the other arrangements in regard to the management, domestic and medical, of these proposed establishments; the nomination and appointment of the Board of Direction; the division of labour among the different members of the Board; the amount of their salaries; the expenses incurred by the Procurator-Fiscal, and for medical testimony; the forms of procedure; the modes of transmission of cases from one part of the country to another; the liabilities of friends, Parochial Boards, etc., for the costs of the maintenance of dipsomaniacs, or their responsibilities in surveillance over them after due notice has been given of the requirements of a particular case,—all these matters could be very easily and satisfactorily arranged if the weightier considerations were agreed to.

The above scheme, I am convinced, could be worked out so as to cost the country very little annually. The establishments proposed might be made almost entirely self-supporting. Many of the fees, too, of procedure would be paid by private persons or by Parochial Boards; and the remainder, probably not many hundred pounds, would be a small outlay indeed for the good likely to be obtained. To save even a few dipsomaniacs or their families or connections from ruin would be no small benefit; and there is no doubt that the length of time during which control would be continued would be highly beneficial, arising both from the improvement of the physical condition, and the moral influence produced on the mind. By this, too, the country would profit not a little; for, not to speak of the burden which the offspring of such unfortunates necessarily, in many ways, entail on society, by such reformatory or conservative measures many would be kept from passing the remainder of their days in poor-houses, hospitals, and asylums. Doubtless, many also would be kept out of prison; and thus, by the lessening of crime, which is too well known to spring so wildly and abundantly out of unrestrained systematic drunkenness, a very great saving to the country would be effected, not only in the maintenance, but in the prosecution of criminals.

THE SCOTTISH TEMPERANCE LEAGUE, 108 HOPE STREET, EDINBURGH: W. OLIPHANT AND SON, 1874.

LETTER

TO
THE RIGHT HONOURABLE

SPENCER HORATIO WALPOLE,

HER MAJESTY'S SECRETARY OF STATE FOR
THE HOME DEPARTMENT,

FROM
THE DIRECTORS

OF
THE SCOTTISH TEMPERANCE LEAGUE;

BEING
A REPLY TO THE STATEMENTS MADE TO
SIR GEORGE GREY, BART.,
BY THE DEPUTATION OF GLASGOW PUBLICANS.

GLASGOW:
SCOTTISH TEMPERANCE LEAGUE, 108 HOPE STREET.
EDINBURGH: W. OLIPHANT AND SON.

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LETTER
TO
THE RIGHT HONOURABLE
SPENCER HORATIO WALPOLE,
HER MAJESTY'S SECRETARY OF STATE FOR THE HOME
DEPARTMENT.

SCOTTISH TEMPERANCE LEAGUE,
OFFICE, 108 HOPE STREET,
GLASGOW, 19th April, 1858.

SIR,

We, the Directors of the Scottish Temperance League, respectfully beg to be permitted to address to you some reply to a communication lately presented, on behalf of the Licensed Victuallers of Scotland, to your predecessor in office, Sir George Grey, relating to the present licensing law, and praying for a committee of inquiry into the working of the Act 16 and 17 Victoria, commonly known as the Forbes Mackenzie Act. This favour we request the more earnestly, that the publican interest intend to prosecute their claims with the present Government as energetically as they did with the last.

In the outset of that document, the Licensed Victuallers propose "to point out the hardships" to themselves, "and the many evils" to Scotland, which, they say, "that Act has created." With your leave, we propose now to show that their plea of "hardship" is preposterous, and that, instead of "many

evils," the Mackenzie Act has effected in Scotland an immensity of good.

The first evil which the Licensed Victuallers attribute to the new Act, is that of illicit selling. On this they say, "Before the above Act came into operation, little or no illicit selling was known in Scotland, but from that date there at once came into existence hundreds of illicit sellers in all large towns; and in illustration of this fact, the city of Glasgow contains, at the lowest estimate, upwards of 1600 shebeens, or houses where liquor can be had during any hour of the night, or of Sunday; and those parties who carry on this business are in no way subject to any surveillance by the police or others, consequently the law has great difficulty in reaching them, and they can only be caught by resorting to what is termed in Scotland the 'spy system' to secure a conviction." They then give statistics in reference to these cases, and extract from the *Glasgow Herald* of 9th February, 1857, a report of the case of "Bonnie Bell," to illustrate what they call "this new branch of business, brought into existence immediately upon the passing of Forbes Mackenzie's Act;" and, after some further account of this illicit trade, they again explicitly assert that "the present law has been the cause of its origin."

Deploring, as we do, the existence and many evils of illicit selling, and that progressive restriction must ever expect to encounter this tendency, we declare the above to be a gross and reckless exaggeration. For (1.)—The representations that illicit selling is a "new branch of business, brought into existence immediately upon the passing of Forbes Mackenzie's Act," that "the present law has been the cause of its origin," or even that, "before the above Act came into operation, little or no illicit selling was known in Scotland," are notoriously untrue. Dr. Cleland, as quoted by James Smart, Esq., superintendent of the Glasgow police, says, "that in the year ending the 5th July, 1816, 550 persons were prosecuted in Glasgow for selling without licences and for illicit distillation,

and the penalties awarded against them amounted to upwards of £8000." To come down to the recent years more immediately concerned, Mr. Smart, in his first Report, dated September, 1855, to the Lord Provost and Magistrates of Glasgow, on the working of the new Act, says, "An increase has taken place in the number of convictions under this class (unlicensed dealers in spirits); but the old law was defective, and very many of the parties fined under the new Act carried on business under the old Act for years with impunity—for instance, Currie, McCabe, Davies, Grange, and a number of other well-known unlicensed dealers." And in his second Report, 1856, Mr. Smart further says, "The increase of convictions against unlicensed parties, proves that the powers of the new Act are more effective than the old, and not that these dealers were not in existence before it became law. It is a notorious fact, that nearly every brothel in Glasgow, for twenty years back, has sold and still sells wines and spirits. It is also well known that oyster stores, low lodging houses, low eating houses, &c., sell liquor without reserve; and many of them have been convicted since the new law came into operation, who, under the old, were allowed to do so with impunity."

(2.) The statistics on the subject of illicit selling presented by the Licensed Victuallers, and the inferences they deduce therefrom, are grossly exaggerated. The most imposing of them are of a merely hap-hazard and conjectural character. The wholesale assertion that "the city of Glasgow contains, at the lowest estimate, upwards of 1600 shebeens," has, for some time, been publicly challenged by the Directors of the Abstinence Union of Glasgow, who "offer to pay over to the Glasgow Royal Infirmary the sum of one hundred guineas, provided the Licensed Victuallers' Association will prove to the satisfaction of the authorities the above statement." Of the "club-houses," the Licensed Victuallers say, that "they have sprung up in all quarters of the city of Glasgow;" and yet, on the authority of Mr. Smart, in his Report of 1856, only

six convictions of that description during that year had been obtained. Deducting their conjectural statistics, little or nothing remains but what corresponds to, or is at all events authoritatively superseded by, the following official statistics in Mr. Smart's second Report of 1856:—"There has been an increase," says that highest authority, "in the number of these cases (unlicensed dealers)—the convictions being 164 against 126 last year; and the penalties imposed, £957 15s. against £911. It is worthy of remark, that twenty-two of these cases were directed against licensed victuallers, for selling liquor in their private houses; and six convictions have been obtained against the keepers of 'shebeen clubs'—a class of houses that open when the licensed houses shut, and are kept open generally till four or five o'clock in the morning, and during the whole of Sunday." From this it will be seen that the increase is by no means to the extent that the Licensed Victuallers affirm. It is also distinctly to be noted, that those very cases of which the publicans complain, are cases in which they themselves have been the convicted parties to the number of twenty-two, or nearly one-seventh of the whole. In further proof that the number of club-houses has been egregiously overstated by the Licensed Victuallers, we may add, that at a meeting of the Glasgow Police Committee, held on the 15th March, and presided over by the Lord Provost, Captain Smart, as reported in the *Daily Mail* of 16th March, declared, that after the new Public Houses Act came into operation, "he called the attention of the magistrates to the fact that there were fifty or sixty drinking clubs in Glasgow, and told them it was useless to go on with this Act, unless these could be put down;" and after stating the resolution of the magistrates to do so, and the means to be instituted for this end, Captain Smart adds—"The result is, that since the meeting of the magistrates, nearly every club has been brought before the sitting magistrate, and convictions obtained upon evidence of an actual sale having been made. These clubs are now reduced to one or two—very few, and these are shabby."

(3.) The actual increase, such as it is, in cases of illicit selling, is to be in great part accounted for by the stricter fidelity with which, since the new Act came into existence, the law has been enforced. That Act armed the authorities with new powers; and the moral influence of it, besides, led to a more faithful exercise even of the powers formerly possessed. Mr. Smart, in the extract above quoted from his first Report, Sept. 1855, declares, that "very many of the parties fined under the new Act carried on business under the old Act for years with impunity"—some of whom he then proceeds to name. In his second Report, 1856, Mr. Smart says of that class—"These houses have not had the attention bestowed on them that their importance demands, and, in fairness to the licensed dealer, no pains should be spared to suppress them. The magistrates would require to give special instructions in regard to them." From this it is to be expected, and on all accounts very much to be desired, that the ratio of such convictions should progressively increase, till the evil be as thoroughly as possible extirpated. It will, moreover, be apparent from the above facts, that the increased amount of fines for illicit selling, so often appealed to, is no proof of the increase of the illicit system, or even of a greatly increased number of convictions, but simply of the new powers and heavier fines provided for in the new Act, and of the greater fidelity with which it is enforced.

(4.) Had those illicit abuses been as formidable as we have proved them insignificant, they would have claimed, and as it is, *do* claim, to be very stringently met; but they could never, it is respectfully submitted, warrant the removal or relaxation of the wholesome restrictions already imposed on so dangerous a traffic—restrictions which have foreclosed tenfold more evils than the shebeens have created, and which the moral and Christian part of the community only long to see increased. Conceding the principle that increased restriction tends to increase illicit selling, the question still remains, Is the traffic in question morally and politically right? If it is not—and we believe it is not—this principle will not warrant a return to

former laxity in granting licences, or forbid increased stringency even to the extent of ultimate prohibition.

The next charge which the Licensed Victuallers bring against the Mackenzie Act, and which they call "a great evil amongst the working people of Scotland," is, that "they have no place of amusement on the Sabbath day," every house being then shut up, and that, "in consequence, they procure liquor, and consume the same at home in the presence of their families, and the immoral effect of which your memorialists will not dilate upon." To this we reply—(1.) The people of Scotland accept and prize the Sabbath, not as a day of "amusement," still less of bacchanalian revelry, but as a divinely consecrated season, to be spent in secular rest and spiritual duties. This they have all along testified by the most indubitable proofs. The Licensed Victuallers, on the contrary, have here, as a body, publicly committed themselves to the cause of Sabbath desecration. In the face of Scotland and the world, they declare for Sabbath "amusement," and, as embraced in this, for Sabbath-day drinking in public-houses. In this they are only consistent; for to overturn the Mackenzie Act would be to promote all this. But ninety-nine hundredths of the people of Scotland will regard it as a shockingly godless consistency, and as one of the most audacious insults ever offered to the profoundest religious convictions and most cherished traditions of their country.

(2.) Without taking time to show, that bad as home drinking is, public-house drinking is, in many obvious respects, worse, we invite attention to the virtual concession here made by the Licensed Victuallers, that drinking produces an "immoral effect." This, indeed, they affirm of home drinking only; but on what grounds? On no conceivable grounds but what imply that drinking itself is an evil. Were drinking not an evil, the influence of home drinking could not be immoral. But if it be an evil, and its influence, as indulged in at home, has, as the publicans truly say, an "immoral effect,"

then it is an evil also in the public-house, and its effect there, too, cannot fail to be immoral. Thus out of their own mouth they stand condemned.

(3.) The assertion that home drinking has increased since the passing of the Mackenzie Act is gratuitous, and, beyond all doubt, the reverse of the truth. It is gratuitous, for the Licensed Victuallers make no attempt to support it by proof. And it is, we venture to affirm, the reverse of the truth, for it is made in the face of facts that dictate a directly opposite conclusion. On Sunday, the 6th March, 1853, fully a year before the Mackenzie Act came into operation, it was found, as the result of careful and accurate observations, that, in the city of Edinburgh, 41,796 visits were made to public-houses on that day, and that of these no fewer than 7,663 were by children under 14 years of age. On Sunday, the 26th June, of the same year, similar observations were made at Leith, including the Newhaven and Parliamentary bounds, as the result of which it was ascertained that, on that Sabbath, out of a total of 17,818 visits to public-houses, no fewer than 3,170 were by boys and girls. Taking Edinburgh and Leith together, the result will be, that out of a grand total of 49,614 visits to public-houses in the course of a single Sabbath, 10,833 were by children under 14 years of age. These last were, of course, every one of them cases in which the drink purchased was to be consumed at home. But by virtue of the Forbes Mackenzie Act, which prohibits all Sunday traffic in intoxicating drinks, there no longer exists any scope for such cases, except in the comparatively few instances in which deliberate means are taken to violate the law. It may, indeed, be rejoined, that due provision will be made for home drinking on Sunday, by the timely purchase of liquor on the day or week before. But a variety of reasons concur to render this in the highest degree improbable; for the class concerned in these cases being the lowest, they have seldom the means, and still more rarely the inclination or the forethought, to lay in drink in any quantity beyond what is immediately to be consumed.

So much, in fact, is that class dependent on facilities obtruded on their immediate notice, and brought to their very doors, that (all experience being witness) the removal of these facilities directly removes, at one sweep, an immense proportion of the drink-consumption and the drunkenness they may have created. But after all reasonable abatement has been made for cases of week-day purchase of strong drink for Sunday use, there will still remain, in the immense number of 10,833 cases of home drinking on Sunday under the old law, margin enough for a difference of many thousands of those cases that must have necessarily disappeared under the operation of the new Act. Thus home drinking, instead of having increased under the operation and influence of the Mackenzie Act, has, by virtue of that very Act, been to an immense extent diminished.

The next allegation of the Licensed Victuallers is, that the Mackenzie Act has increased the consumpt of spirits in Scotland by an excess of nearly two million gallons in 1856 over 1855. No assertion could be more palpably opposed to fact. As soon as it became public, it was challenged and exposed. It was shown, from the new mode of entry in the Excise books since May, 1855, that the Licensed Victuallers had palmed off, as the consumpt of whisky in Scotland, the entire consumpt of Scotland and England together. This they and their abettors strenuously denied, and continued, without scruple, to vend the misrepresentations of the alleged increase in Scotland of two million gallons. The timely returns, however, which we owe to Mr. Dunlop, M.P. for Greenock, have established beyond all cavil a very different fact. These returns give the quantities of whisky and other spirits used in the three years, respectively, immediately preceding and immediately following the passing of the Mackenzie Act. Of these six years, from 1852 to 1857 inclusive, the first four exhibit the Scotch and English consumpts separately; but, owing to the Act of 1855 assimilating the rates of duty in the two countries, the last two years of the series present the Scotch and English consumpts in one common sum. By means of data furnished under the

first four years, we can easily determine, by the rule of proportion, the amount to be deducted for the consumpt in England; and this amount very considerably exceeds the two million gallons of alleged increase—thus accounting for the misrepresentation of the Publicans' Committee, and, instead of an increase, showing an actual decrease. According to these data, the total consumption of ardent spirits in Scotland, during the three years immediately preceding the enactment of the new law, was 21,503,715 gallons; whereas, during the three years that immediately followed that enactment it was only 19,344,457; thus presenting a total decrease, under the new law, of 2,159,258 gallons in three years, or nearly three-fourths of a million gallons as the average decrease for each year. Instead, then, of the alleged increase of two million gallons in Scotland, the authoritative returns of Mr. Dunlop exhibit a positive, and very considerable, decrease.

The Licensed Victuallers next charge the new Act with having caused an increase of drunkenness. On the authority of Dr. Strang, City Chamberlain of Glasgow, they declare the number of cases dealt with in the Police Office in 1857 to have exceeded those of 1856 by 1193; and this excess they ascribe to the influence of the new Act. But such a conclusion carries absurdity in its very front; for the new Act having been in operation in 1856, and a year and a-half before, as well as in 1857, the increase, to whatever extent established, must be due to some other cause. Any such conclusion, to hold good against the Mackenzie Act, must be grounded on a comparison of equal times before and after it came into operation. Dr. Strang's statistics (which, except the important item for 1857, seem to have been taken from Captain Smart's second Report of 1856), themselves furnish materials sufficient for such a comparison—presenting, as they do, the results of 1849 and 1853, which preceded the enactment of the new law, and those of 1856 and 1857, which were subsequent thereto. The comparison is as follows:—

Cases of Drunkenness.

1849,	10,258	1856,	6,625
1853,	10,659	1857,	7,818
	20,917		14,443
	14,443		

6,474 Decrease in 1856, 1857, as compared with 1849, 1853.

Even Dr. Strang's statistics, then, when fairly interrogated, show a decrease in the two years, under the new Act, as compared with the other two prior to it, of no fewer than 6,474. But that vamped up plea of increased drunkenness under the new Act, worthless and false as we have already proved it, stands completely exposed by the recent returns for Glasgow, ordered on the motion of Mr. Dunlop, M.P., and now before the public. These returns, which overbear all other statistics on the subject, and appear to supersede all necessity for the committee of inquiry demanded, show a prodigious decrease under the operation of the Mackenzie Act, when the three years immediately prior to its coming into operation are compared with the three years that immediately followed. The new Act, though it became law in August 15, 1853, came into full operation only at Whitsunday, 1854. The years compared, accordingly, are the three years before and the three years after the passing of the new Act;* so that no comparison could be more just and fair. The cases of drunkenness, then, in Glasgow, for each of these periods, (ending 31st December, 1857,) during which the population had increased from 329,000 to 391,000, are as follows:—

<i>No. of Cases under Old Law.</i>		<i>No. of Cases under New Law.</i>	
1851,	24,019	1855,	16,296
1852,	23,788	1856,	17,446
1853,	23,841	1857,	20,043
	71,648		53,785
	53,755		

17,893 Decrease under new Act.

* The year 1854 is excluded, as the returns for it embrace five months under the old law and seven months under the new law.

The increase in 1857, however it is to be accounted for, cannot, as we have already seen, be charged to the new Act. If it is to be ascribed to the recent increase of shebeens, it may suffice to set off against this the growing zeal of the police in putting these down. This specific fact, however, in no way affects the general result, namely, that the foregoing average of the three years respectively, immediately before and after the Mackenzie Act came into operation, shows a decrease of cases of drunkenness to the prodigious extent of 17,893, or nearly 6,000 a year; and that, too, whilst the population had increased 62,000. Thus, during the first three years, under the old law, the number of cases was 33 per cent. greater than during the last three years, under the operation of the new law.

Again, taking the Sunday cases by themselves, the results are still more striking:—

<i>No. of Sunday Cases under Old Law.</i>	<i>No. of Sunday Cases under New Law.</i>
1,525	464
1,339	481
1,218	521
4,082	1,466
1,466	

2,616 Decrease under new Act.

Here the decrease is from 4,082 under the old law, to 1,466 under the new, or 2,616. That is, the cases of Sunday drunkenness under the old law exceed those under the new by 200 per cent.*

Once more, deducting from the total number of cases of

* In harmony with this are the following interesting statements of Mr. Smart: "The same improvement, in respect to order and decorum on our streets on the Sabbath day, mentioned in my first report, still continues, and on Saturday nights, by 12 o'clock, peace and good order are obtained, instead of, as formerly, a state of turmoil and disorder the whole of Sabbath morning. In no place is the difference more observable than in the Police Offices, particularly in the Central Office, where Sunday used to be a busy day, but it is now perfectly quiet, and it is not unusual for a whole Sabbath to pass without a single case of any kind being brought in. The Lieutenants are now at liberty to go to church, one Clerk taking charge of both the Detective and the Lieutenants' Departments—and the Turnkeys have now little else to do on Sunday than read their Bibles."

drunkenness those of the inoffensive kind, there remain cases of drunkenness and crime combined, as follows:—

<i>No. under Old Law.</i>	<i>No. under New Law.</i>
13,328	6,787
10,985	6,658
10,659	6,525
34,972	19,370
19,370	
15,602 Decrease under new Act.	

These cases, which imply violence or wrong, and entail enormous criminal expenses, and which, therefore, very specially concern the public, decreased from 34,972 under the old law, to 19,370 under the new—a falling off in three years to the extent of 15,602, or 6,200 a year. In other words, the number of cases of drunkenness and crime combined was 84 per cent. higher under the old law than under the new. Thus, in regard to Glasgow, to which alone they particularly refer, the assertions of the Licensed Victuallers are completely belied by the returns ordered, and now obtained, through the motion of Mr. Dunlop; and these same returns establish a corresponding harmony of results throughout the other large towns of Scotland: thus demonstrating, beyond all contradiction, the truly benignant effects of the Mackenzie Act, and how doleful for Scotland would be the day that saw it abrogated or relaxed.

In the remaining part of their memorial, the Licensed Victuallers complain of sundry hardships to which they are exposed. With some of these complaints, such as that relating to the billeting of soldiers, the temperance cause we represent does not require us to intermeddle. As to other alleged hardships, such as being fined if admitting into their premises any person, though a friend or relative, or one in quest of spirits for medicinal purposes, five minutes past eleven at night, or any time on Sunday, we respectfully submit that these are not to be regarded as hardships at all. They are simply the natural and unavoidable results of the

subjection of their trade to restrictive regulation. That their trade is one that does require special regulation, the general current of our past legislation assumes, and publicans themselves seldom care or dare to deny. On the contrary, they have repeatedly owned it to be, in a momentous sense, exceptional to other trades. Thus they have declared that the drink traffic, unlike others, stands in need of regulation, inasmuch as "it deals in a dangerous article." And the very party whose claims we now oppose have confessed the same thing; for in the Report, for 1854, of the Scottish Licensed Victuallers' Association, that body expressly declare, that "to throw open the trade would be to throw open the flood-gates of vice and drunkenness." That their trade demands stringent regulation is thus confessed on all hands. But if these restrictive regulations are not to become a dead letter, the publicans must be held within the limits of the law. If minutes are too freely allowed them, hours will follow, and the whole affair prove like the letting out of waters. Better that inconveniences should occur, though far more formidable than those they mention, than that a salutary law, which has proved such a boon to Scotland, should have its girths cut and be vilely cast away. In really extreme cases, the spirit of British law, it is humbly presumed, would here, as elsewhere, be found large and considerate; but it is respectfully submitted, that no such case is almost ever likely to happen. No grocer needs to have his shop open on Sunday to entertain relations from the country; nor does a druggist need, for the sake of a possible emergency, to keep his shop open all the hours of the twenty-four. Nay, the publican, of all others, ought to have his shop and house in entirely different premises—their conjunction being notoriously a source of numerous abuses and contraventions of the law. The whole plea of hardship, on these grounds, thus resolves itself into a mere complaint against the needful and wholesome restrictions of the Forbes Mackenzie Act; and let these be modified as they may, so long as restrictions on selling remain, publicans'

complaints may be expected to remain. The alleged inconveniences, moreover, bear on the face of them to be little else than a mere pretence. They amount to almost nothing more than the betrayal of a strong desire to sell by night as well as by day, on Sundays as well as week days; and this desire has been further betrayed by the number of cases in which publicans have been convicted of violating the law. Had their sympathies been more with the law, and their chosen interests coincident with those of the public, no such grievances would probably ever have been named. All their complaints about police interference seem fairly met by the statement of Captain Smart, that "no respectable publican in the city had anything to fear from the police." Without reflection on the *men* concerned, it may be safely affirmed, that the *trade* itself, in its present form, can never be made "respectable." In the outset of their document, the Licensed Victuallers call their trade "legitimate." Relatively to the licence law, and to illicit selling, their appropriation of this term need not be disputed; but brought to the moral standard, the drink-trade, it is submitted, is anything but legitimate. It is essentially, invariably, and indiscriminately demoralising; and among the moral and respectable classes of Scottish society, without as well as within the total abstinence pale, the sentiment is strong, and is deepening every day, that instead of relaxation, there ought to be increased restriction, and this we could long to see carried to ultimate prohibition.

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THE RISE AND PROGRESS

OF

WHISKY-DRINKING IN SCOTLAND,

AND THE WORKING OF THE

'PUBLIC-HOUSES (SCOTLAND) ACT,'

COMMONLY CALLED THE

FORBES M'KENZIE ACT.

BY

DUNCAN M'LAREN, ESQ.

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THE RISE AND PROGRESS

WHISKY-DRINKING IN SCOTLAND.

THE Act usually known in Scotland as the Forbes McKenzie Act, 16 and 17 Victoria, cap. 67, came into operation May 21st, 1854. The bill, about which so much has been said, as bearing on the cause of sobriety and good order in Scotland, was introduced into the House of Commons by the gentleman whose name it bears; but having vacated his seat before the measure had made much progress, it was watched over, and carried through, mainly by Mr Cumming Bruce. In the House of Lords it was under the charge of Lord Kinnaird, and, as I once stated at a public meeting in Edinburgh, his lordship also did a great deal privately, by his personal exertions, to promote its passing through the House of Commons; and he may thus be said to have been the chief author of the Act. Its short title is 'Public-Houses (Scotland) Act.'

I need not state to the people of Scotland that the leading provisions of the Act are two in number—(1.) That there shall be no selling of intoxicating drinks on Sundays, except to *bona fide* travellers, and (2.) That there shall be no selling of such drinks during any day of the week after eleven o'clock at night. These two provisions are so manifestly just in themselves, and so conducive to the welfare of society, that I am happy to say they have commended themselves to the great body of the people of this country.

There is, however, an active and influential section of the community who have always been opposed to these provisions, and who have been using all the means in their power to get the Act modified or repealed; and they have endeavoured to procure the appointment of a Parliamentary Committee to inquire into the working of the Act, with a view to accomplish their object in this indirect way. The ostensible movers in this cause are a committee of Glasgow publicans and spirit dealers, but they are privately receiving the sympathy and support of influential distillers, and other persons who do not publicly come forward to advocate their cause. They are also supported in their efforts by a portion of the public press, and by a small number of Scotch members of Parliament.

Being always more anxious to know what opponents have to say against any cause of which I have formed a decidedly favourable opinion, than to know what friends say in its favour, I have read and heard much against the 'Public-Houses Act'; and if I understand the objections of its opponents aright, they may be classed under these heads:—

They say that, both as regards the requirements for shutting up public-houses during the entire Sunday (as compared with the former law, which required them to be shut only during the hours of divine service), and as regards restricting the business hours on week-days to 11 o'clock at night, they are novelties in the legislation of Scotland, of a Puritanical character, and interfering with the liberty of the subject; that they are unjust to the persons engaged in the spirit trade; that they have proved injurious in their operation as regards all classes; and in particular, that in place of diminishing drunkenness, they have increased it—causing an enormous increase in the consumption of whisky, amounting to nearly two millions of gallons annually. These allegations have often been made, and those last mentioned were embodied in an official memorial recently prepared by the Glasgow Committee, and presented by them to Sir George Grey, the Home Secretary, with a view to induce him, on the part of the late Government, to appoint a Parliamentary Committee of inquiry.

THE SABBATH LAW OF SCOTLAND.

In answer to these allegations it may be stated, that, as regards the non-trading on Sunday, this principle has been the law of Scotland for several centuries, except during the twenty-six years from 1828 to 1854. In the first-mentioned year, the Act known as the Home Drummond Act altered the Sabbath law of Scotland, by the insertion of certain words in the schedule appended to the Act, which were not intended to have that operation, as I shall afterwards prove. Now, if these facts be as I have stated, it follows that the 'Public-Houses Act,' in place of establishing any novelty in legislation, only restored the law of Scotland to what it had been from time immemorial, until it was accidentally altered by the passing of the Act of 1828.

To prove my case, I shall have to refer to the ancient legislation of Scotland respecting the observance of the Sabbath. I could easily cite numerous Acts of the Parliament of Scotland on the subject, but will only trouble you with two or three. One of them is the Act of James VI. (1594), and is a fair specimen of the series, exhibiting the broad and distinct grounds on which the Scotch Acts usually proceeded—not singling out publicans or any

one class as special objects of legislation, but laying down broad general principles, briefly expressed, and so comprehensive in their terms as to include all classes of traffickers, and prohibiting Sunday trading of every kind. After ratifying all former statutes prohibiting the profanation of the Sabbath, the Act proceeds thus:—'That quhasoever prophanes the Sabbath-day by *selling, or presenting and offering to be sold upon the said day, any guddes or geare, or quhatsoever merchandise*, by themselves or any other in their name, and he is three several times lawfully convicted thereof, either before the Provost and Bailies within burgh where the profanation shall happen to be committed, or before certain Commissioners and Justices in every Presbytery to be appointed by the King's Majesty, with advice of his Privy Council—their hail guddes and gear shall be escheated to his Majesty's use, and their persons punished at the will of his Majesty with advice of his Secret Council.'

Another Act was passed in the second year of Charles the Second (1661), for the purpose of dealing with the then abounding vice of drunkenness, which is deserving of notice, as showing the prevalence of open drunkenness to a much greater extent than at present amongst the higher and middle classes; and also an account of the stringent manner in which drunkards of all classes are punishable under its provisions:—'Our Sovereign Lord being desirous that all his subjects within this Kingdom may live a quiet and peaceable life under his government, in all godliness and honesty, and in order thereto, having resolved to curb and suppress all sort of sin and wickedness, and especially these abominable, and so much abounding sins of drunkenness, and all manner of cursing and swearing—Declares that each person who shall blaspheme, swear, or curse, and *whosoever shall drink into excess*, shall be liable in the pains following, according to the quality of the offenders,' (the fines are here stated in our present money,) 'each nobleman, £1 13s 4d; each baron, £1 2s 2d; each gentleman, heritor, or burgess, 11s 1d; each yeoman, 3s 4d; each servant, 1s 8d; and each minister in the fifth part of his year's stipend.'

There are many older Scotch Acts than these on the same subject, and many later, down to the period of the Union, which all affirm the same broad, general principle, that no man, be he who he may, in any walk of life, shall buy or sell, sow or reap, or fish, or carry on any business for gain on the Sabbath-day. None of these Acts single out the publican's trade as one requiring to be specially dealt with, either in a harsher or more favoured manner than other trades. The Acts, in effect, just intimate to every man in plain and distinct terms, 'Thou shalt not carry on thy business on the Sabbath-day;' and some

of them specially require the ministers of each parish and their kirk-sessions to see the Sabbath law duly enforced. The ministers and kirk-sessions are, in effect, appointed by Act of Parliament the public prosecutors within their several parishes, so far as regards the enforcement of the Sabbath law.

About the end of last century considerable laxity prevailed in many places regarding the opening of shops and public-houses on Sundays. The church courts took the subject into their serious consideration, and applied for advice to one of the most distinguished lawyers that ever adorned the Scottish bar or bench, Lord President Blair, then at the bar, who gave a clear and decided opinion to the effect stated, in 1794. During that year, as I shall afterwards show, an enormous increase in the number of public-houses took place, in consequence of the passing of an Act authorising licenses to be granted at a very low rate for the sale of whisky alone, and this increase probably stimulated the zeal of the church courts. The opinion is as follows:—

'The statutes now in force, with respect to the observance of the Sabbath day, appear to me to be sufficient for checking the evil complained of. The statutes which I mean are the following:—Act 1661, c. 18; 1672, c. 22; 1693, c. 40; 1695, c. 13; and Act 1701, c. 11.

'By these statutes, every person guilty of profaning the Sabbath-day in any manner whatever, is made liable in a pecuniary penalty, *toties quoties*, to be recovered by prosecution before Sheriffs, Justices of the Peace, or any other Judge Ordinary; and the minister of every parish, the kirk-session, or the presbytery, or a person named by them, is entitled to prosecute.

'There appears, therefore, to be no defect in the law as it stands, if duly executed; and the power of enforcing execution is lodged with the Church Judicatories themselves. Perhaps it might be proper to cause print the above statutes, and transmit copies thereof to the different presbyteries, so that due notification may be given to all concerned.'

(Signed) ROBERT BLAIR.'

Edinburgh, 24th May, 1794.

The law at the present day remains as described by the Lord President Blair (the Sabbath clause of the Home Drummond Act, of which I shall afterwards speak, being now repealed), and, therefore, there can be no difficulty in enforcing the law against all Sunday traders, if the parties on whom the Legislature have imposed the responsibility—the ministers and kirk-sessions—perform their statutory duties; and it is important to notice that they are entitled to receive the penalties. I observed in the

newspapers last week that, at a meeting of the Presbytery of Edinburgh, one of the ministers of the city, the Rev. Dr Nisbet, very properly complained of the number of shops which were open in his parish on Sundays; and on his motion, the Presbytery agreed to adopt the following memorial to the Magistrates and Town Council, which I copy from the *Edinburgh Advertiser* of the 2d April:—

'That your memorialists, being this day duly convened, and having had their attention called to the large and increasing number of shops kept open in many parts of the city on the Lord's-day, in the prosecution of their usual traffic, cannot but regard this circumstance with regret and alarm, as tending to debase the character, and destroy the best interests of the community, involving, as it does, a systematic violation of the law of God, and tending to foster in old and young those habits of irreligion which provoke His judgment.

'The Presbytery, in directing your attention to this subject, venture most respectfully to express their hope, that it may receive from your honourable body the consideration which its deep importance deserves, and lead to the adoption of such measures as the laws of the country may have placed at your disposal for securing that decent and general observance of the Lord's-day for which our country has hitherto been distinguished, and to which, your memorialists believe, it has been pre-eminently indebted for any virtue or prosperity which has blessed it.'

Now, it is quite plain, from the opinion of Lord President Blair, that the reverend doctor here exemplified the fable of the man who prayed to Jupiter to help his cart-wheel out of the rut, in place of applying his own shoulder to the work, and that he is himself to blame for the continued existence of the Sabbath desecration which he so properly laments. Should the President's opinion ever meet the eye of the reverend doctor, I hope he will remember that 'to him who knoweth to do good and doeth it not, to him it is sin.' He will then be in the position of not only knowing to do good, in the moral and religious sense of the admonition, but he will have learned, what it is evident he does not now know, that to the authority of the Divine law has been superadded the imperative requirements of the law of the land, by virtue of which he holds the honourable position of one of the ministers of this city, with all the advantages and responsibilities which it has pleased the Legislature to attach, as the conditions on which the office is held. An important position like his 'has its duties as well as its rights;' and there can be no better reason for asking, as he has done, the Magistrates and Council to relieve him of certain unpleasant duties which Parliament has imposed upon him, than there could be for the Magis-

trates asking to be relieved of certain unpleasant duties which Parliament has imposed upon them, for the collection of his stipend.

Returning from this digression, the Sabbath law remained unaltered till 1828, when the Home Drummond Act was passed, (9th Geo. IV., cap. 58). That Act regulates the mode of granting licenses to public-houses, imposes certain restrictions on them, and enacts larger penalties for the infraction of the statutory rules than were imposed by the ancient Acts. The form of certificate (schedule B), amongst other prohibitions, contains the following—'And do not keep open house, or permit or suffer any drinking or tipping on any part of the premises, thereto belonging, during the hours of Divine service on Sundays, or other days set aside for public worship by lawful authority.' These words were intended by Mr Home Drummond only to add another special prohibition to the restrictions formerly existing, and to enforce this new prohibition in the manner and subject to the higher pains and penalties which were enacted in the new Statute. This fact can easily be proved from the evidence given before a Select Committee of the House of Commons in 1832 by the late Principal Macfarlan of Glasgow, so long an ornament to, and the father of the Church of Scotland. In referring to the Act, the Principal is asked—

'You do not consider that the practice of keeping open public-houses on the Sabbath is sanctioned by the Act itself, to which you have referred? Certainly not.

'The fact of its being lawful to keep open public-houses at any time, excepting the hours of Divine worship, is merely inferred from the certificate to which you have alluded? Entirely so; and if the Committee will permit me to read another short extract from Mr Home Drummond's own letter, they will see this to be his opinion—"All that the last Act does, is to declare that it shall be a breach of the certificate to permit tipping on Sundays during Divine service, &c., as therein set forth. It does not, in my opinion, affect any other legal consequence of Sabbath-breaking, or make it lawful to do anything on Sunday which was previously unlawful."

The venerable Principal was, however, mistaken in his view of the law, as was proved by the decision of the Supreme Court. In the same year in which he gave his evidence the Magistrates of Edinburgh had a case tried by an amicable Bill of Suspension, raised at the instance of a spirit dealer, of the name of Macneil, when four of the Judges of the Court of Justiciary decided to suspend the sentence of the Magistrates, on the ground that the words quoted gave the suspender liberty to keep his house open at all hours on Sunday, except during Divine service. One

distinguished judge, Lord Moncrieff, held that the general law of Scotland could not be set aside in this incidental way, and thought the judgment of the Magistrates should be affirmed. The question was thus authoritatively determined, and thereafter Sabbath desecration went on with increased vigour.

This Act introduced into Scotland what had never before been recognized as part of the Sabbath law, a difference between what were called church hours and other hours. This fact was stated by my venerable friend, Principal Lee, whose authority on such a question no man will venture to dispute, in his evidence before the Committee of the House of Commons, to which I have already referred. The Principal was asked—

'Was not Mr Home Drummond's Act, at the period when it was introduced, considered a novelty, inasmuch as it recognized what are called in England *church hours*? Certainly it was; I believe, indeed I have been assured by Mr Drummond that it was not so intended by him, nor ought it to be interpreted, so as to legalize the keeping open of taverns on the Sabbath; but, practically, the effect of it has been to induce Magistrates and Justices of the Peace to act as if the law now authorized the keeping open of taverns and other places of entertainment during the greater part of the Sabbath.'

On the same subject Principal Macfarlan said—

'It forms no part of the law of Scotland, and no part of the ecclesiastical enactment of the Church of Scotland, to contemplate the Lord's-day as being confined to the hours of Divine service; all the enactments proceed on the principle of the entire Sabbath of twenty-four hours being held as a season of rest. To this I ascribe much; because if we confine it to any given period, then the period, being determined by human authority, is limited by individuals at their own pleasure. I ascribe much to it from our experience of a single enactment proceeding on a different principle. By an Act in 1828, the description of our Sabbath is given as if confined to the hours of Divine service, and it has done great mischief.'

The objectionable portion of this Act, allowing public-houses to be opened at certain hours on Sunday, having been repealed by the 'Public-Houses Act,' we have now got rid of all questions respecting canonical hours, and stand not on any law involving novel principles of legislation, but on the ancient Sabbath law of Scotland, by which the whole Sabbath was required to be observed, to the extent, at least, of every man abstaining from carrying on his ordinary business for gain on that day. There is, therefore, now no difference between the publicans as a class and any other class of traders, as regards the principle of prohibition. The butcher and baker, the grocer and confectioner, the hatter, and clothier,

and shoemaker, are now placed, as they always were in the legislation of Scotland, (except from 1828 to 1854,) on the same footing as the spirit dealer and publican.

There is, however, a difference in the mode in which offenders of the different classes must be tried and punished under the several Acts of Parliament. The spirit dealers must be tried and punished under the Public-Houses Act. The complainant may be either the Procurator-Fiscal or any other person. All other classes of traders must be tried under the old Scotch Acts, and, as already stated, the ministers and kirk-sessions are specially enjoined to be the public prosecutors. Under these Acts the penalties are smaller than under the modern Act, but the evils resulting from the sale of food, clothing, and other necessities of life on the Sabbath-day, are, in my opinion, also smaller than the evils resulting from the sale of intoxicating drinks. If a distinction were to be made betwixt different classes of traders carrying on their business on the Sabbath, I think that less evil would arise from permitting the opening of shops of all other kinds, provided spirit-shops were shut, than by permitting the opening of spirit-shops and keeping all others shut; but I am opposed to any change whatever on the existing law. I have no sympathy with the cry of hardship raised by a small section of persons engaged in the spirit trade—for I believe four-fifths of those holding spirit-licenses approve of Sunday closing—on the ground that Parliament has now deprived them of the protection from punishment for doing evil, which they enjoyed from 1828 to 1854, but which was enjoyed by no other class of traders. The days of protected interests of all kinds are now happily ended, and there does not appear to be any reason for exempting the spirit trade from the general rule, which prohibits Sunday trading in Scotland.

THE RELIGIOUS LIBERTY ASPECT OF THE QUESTION.

We are frequently taunted by our opponents with the allegation that the Act must necessarily be a failure, because it is impossible to make men religious by Act of Parliament; and they appear to think this argument, if such it may be called, quite unanswerable. The friends of the 'Public-Houses Act,' so far as I know, have never held, or expressed the opinion that Acts of Parliament can make men religious; and, therefore, while we are quite ready to assent to this negative proposition, we deny that it proves anything against either the principle or the operation of the Act. We are asked by our opponents whether we can point to legislation of any kind in which penalties imposed have ever been effective in enforcing moral or religious duties. I will answer the question as the late Bishop of London (Bloomfield)

did when examined by a hostile member of the Parliamentary Committee of 1832, to which reference has already been made. The member, no doubt, expected to extinguish the Bishop with this question—'Is your Lordship aware of any instance in which an enactment of penalties has ever been effective in enforcing moral or religious duties?'

'I think not; but I take this view of the subject: I am persuaded you will do no good by punishing people for not going to church; but I think you will do a great deal of good by preventing persons from spreading out those temptations which prevent the people from going to church. I think that the positive enforcement of religious duties by penalties is a mistake; it is a mistake in the principles of legislation; but I think you ought, if you look on religion as the basis of all sound principles and social order, to prevent and take out of the way as much as you can those temptations which must check the growth of religion and encourage the growth of irreligion.'

An attempt was also made in the committee to demolish Principal Macfarlan by a question of the same import, but he appears to have demolished his questioner by an answer of which I cordially approve. The member asked—'Supposing that new and stricter acts of legislation on the observance of the Sabbath were passed, might it not be deemed a legislating for religion, and thereby not carry the public opinion with it, to the same extent that it might do, were it considered merely a means of preserving the public tranquillity?'

'In the evidence I have given, and the opinions which I may have taken the liberty of offering, I proceed, not on religious grounds, but simply, and altogether, on general grounds of morality and good order. It would not be desired, it would not be at all wished for, by either the friends of religion or of public order in Scotland, that any legislative enactment should go to enforce any attendance on religious ordinances. The simple grounds on which we would place our desire that legal enactments should be rendered more strict, are—first, that by the legal enactments, all who will may rightly observe the Lord's-day; it is altogether impossible, without legal enactments, for this to be secured to all, dependent as one part of society are on another.'

Principal Lee also met the objection in his usual clear, logical, and beautiful language, thus:—

'The young in the neighbourhood are injured by seeing the Lord's-day habitually treated with disrespect; much disorder is also occasioned in the neighbourhood by the rioting which takes place. . . . These guilty excesses take place chiefly on that day which was mercifully appointed for the rest, refreshment, and improvement of rational beings; and they are committed

under the notice of those young and tender souls, who, at the very moment when their parents should be training them for immortality, are heartlessly kept back from the comforts of this life and the hopes of the next—living without God in the world, whose worship they never see celebrated, and whose name they scarcely ever hear, except in profane execrations and blasphemous oaths. These are some of the concomitants, or consequences of keeping shops open on the Sabbath; the practice is manifestly injurious to the community in another point of view, as it leads to many outrages, which add greatly to the burden of keeping up a police establishment, as well as to the expenses connected with the administration of the criminal law. . . . I cannot help saying, that one of the cheapest and surest modes of establishing a *preventive police*, would be to shut the doors of those mischievous haunts, which are so great a nuisance to all the pious and orderly inhabitants, and which, along with innumerable other evils, occasion an enormous expense to the community.

To all grumblers about the alleged hardship which the publicans suffer by not being allowed to carry on their usual trade on the Sabbath, and about the hardship involved to their customers who desire to be accommodated on that day, I would appeal by quoting an additional sentence following the extract just read from the evidence of Principal Lee:—'It is very hard, and surely not very equitable, that the virtuous should be taxed to a great amount, that the vicious might not be restrained from the liberty of sinning.' So much for what may be called the religious liberty aspect of the question, which I think has been greatly misunderstood by some, and greatly misrepresented by others.

CLOSING AT ELEVEN O'CLOCK AT NIGHT.

I will now notice the complaints of our opponents respecting the enforced shutting of public-houses at eleven o'clock at night. They represent this enactment as being something quite new in the legislation of this country, besides being a great grievance in itself. No greater mistake could be made than to represent fixed hours for the closing of public-houses as a novelty in the legislation of Scotland. It has been the policy of the Parliament of Scotland, from the earliest times, to endeavour to mitigate the evils arising from public-houses, by providing for their being closed at reasonable hours at night. The earliest Acts of the Parliament of Scotland now in existence were passed in 1424; and within five years of that period there was an Act passed for regulating the hours of closing public-houses in these terms (1429):—'It is ordained that na man in burgh be found in taverns of wine, ale, or beer, after the straike of nine houres, and the bell

shall be rung in, in the said burgh. The whilk is founden (offending), the Aldermen and Bailies shall put them in the King's Prison. The whilk if they do not, they (the Aldermen and Bailies) shall pay for ilk time, that they be found culpable before the Chamberlain, fifty shillings.'

This Act, in effect, compels the closing of all public-houses two hours earlier than is done by the 'Public-Houses Act;' and its provisions for enforcing the rule are certainly much more stringent than the provisions for enforcing that Act. I am not a great admirer of what is usually meant by 'the wisdom of our ancestors,' but I am not sure that we might not copy, with advantage, the spirit of this ancient statute, by enacting that all Bailies, Sheriffs, Justices of the Peace, and Procurators Fiscal, who do not enforce the modern Act, within their several jurisdictions, should be fined in the ancient penalty of 50s 'ilk time that they be found culpable.' And if our opponents insist on having the existing Act repealed, for the purpose of going back to the old laws, we may fairly ask them how far back they are prepared to go, and may hint that if they will agree to agitate for going back to this the oldest of all our restrictive laws, for closing 'after the straike of nine houres,' we may perhaps join them in their agitation for the repeal of the 'Public-Houses Act.'

It is not easy to realize the condition of Scotland at the time of the passing of the Act of 1429. The multitude of important events which have been crowded into the intervening period of 429 years, and the changes which have taken place in the manners and state of the country, cannot easily be conceived. Sometimes we form a more vivid and correct idea of the state of a country by a single incident in its history than from a laboured description. With this feeling I have copied out an Act which was passed only two years before this 'nine houres Act,' and which I shall quote, because it so strikingly indicates to my mind the great difference which exists between the present condition of Scotland and the state of matters which existed at the passing of these Acts. It appears that Scotland was then so overrun with wolves as to require the passing of a special Act of Parliament, ordaining all the Barons and their retainers to turn out, at least four times a year, to destroy ferocious animals of which the race has been totally extinct in Scotland for several centuries; and the penalties for non-compliance were required to be paid, not in money, but in *sheep*. The Act runs thus (1427):—

'It is statute and ordained by the king, with consent of his hail counsel, that ilk baron within his barony, in gangand time of the year, chase and seek the whelps of the wolffes, and gar slay them; and the baron shall give to the man that slays the

woolfe in his barony, and brings the head, twa shillings. And when the barons ordain to hunt and chase the woolfe, the tenants sall rise with the baron, under pain of ane wedder from ilk man not rising with the baron. And that the barons hunt in their baronies, and chase four times in the year, and as oft as ony woolfe beis seen within the barony.'

CLOSING AT TEN O'CLOCK AT NIGHT.

The 'nine houres' closing law appears to have remained unchanged for nearly two centuries. In 1617, it was changed for one establishing 'ten hours at night,' as the time after which persons found in public-houses were to be punished; and thus it, in effect, repealed the previous statute. The terms in which it refers to the vice of drunkenness are specially deserving of notice. The Act is as follows:—'For the restraint of the vile and detestable vice of drunkenness, daily increasing, to the high dishonour of God, and great harm of the whole realme, That all persons lawfully convicted of drunkenness, or of haunting of taverns and ale-houses, after ten hours at night, or any time of the day except in time of travel, or for ordinary refreshments, shall, for the first fault, pay three pounds, or, in case of inability or refusal, to be put in the jaggies or jayle for the space of six hours; for the second fault to pay five pounds, or to be kept in stocks or jayle for the space of twelve hours; and for the third fault to pay ten pounds, or to be kept in the stocks or jayle twenty-four hours, and thereafter to be committed to jayle till they find caution for their good behaviour in time coming.' It likewise enacts that all ordinary judges and kirk-sessions shall have power to try offenders and to convict them.

It will be observed that both of these Acts are framed on a different principle from our modern Acts. The ancient Acts punish the men found drinking in the public-houses after the restricted hours, but they do not punish the publicans who furnished the drink. Our modern Acts, on the other hand, punish the publicans who furnish the drink, but do not punish the men who have consumed it after the restricted hours. Here, again, a hint might be taken with advantage from 'the wisdom of our ancestors'; and perhaps a union of the two principles might, in practice, be found the best solution of the difficulty, by dividing the punishment, whether of a personal or pecuniary kind, equally between the consumers and vendors.

We have heard a great deal of late about the alleged Puritanical and Pharisaical spirit which dictated the passing of the 'Public-Houses Act,' and which, it is said, established a new principle in legislation; but both of the restrictive acts which I have

quoted, in effect affirm the same principle as the modern Act, and the first of them was passed when the Roman Catholic religion was established in Scotland, and the second in the full blaze of the Reformation, before the advent to power of the Puritans as a party in England. I do not say this to throw any discredit on the Puritans, for I revere their memory, and wish we had more of the spirit of their ministers in our pulpits, and more of the independent spirit of their Cromwells amongst our ministers of State and members of both Houses of Parliament.

The 'ten hours at night' Act was never repealed until the passing of the 'Public-Houses Act,' establishing 'eleven hours at night' as the rule; but it appears to have been overlooked by the administrators of the law, and to have remained for a long period almost a dead letter. Our opponents might be quietly asked whether, in seeking the repeal of the eleven o'clock hour, they desire to revive the provisions of this Act?

THE ELEVEN O'CLOCK HOUR IN EDINBURGH.

As an Edinburgh question, no novelty can be alleged in the eleven o'clock hour, and there can be no hardship, because the inhabitants of this city were so anxious to obtain such a restriction, that, without waiting for a general Act, they, in 1848, obtained a local enactment for themselves, as follows:—'If any person licensed, as aforesaid, shall suffer drinking or tipping within the premises occupied by him, or sell ale, beer, or excisable liquors on any day after eleven o'clock at night, or before six o'clock in the morning, [here follow the words respecting closing at certain hours during Sunday,] such person, on being convicted thereof before the judge, shall for each offence be liable to a penalty, not exceeding five pounds, and may, besides, in the case of a second or other subsequent conviction, be deprived of his license, provided always that nothing contained in this enactment shall apply to railway refreshment-rooms, licensed and open for the accommodation of passengers only.' This Act worked admirably in Edinburgh, and although it was interpreted—as I think erroneously—to favour large hotels and taverns keeping open after the specified hour, I have no doubt that the known benefits derived from this Act in Edinburgh suggested the propriety of obtaining for other towns the advantage of the same wholesome provision, by the passing of the 'Public-Houses Act.'

THE ORIGIN OF PUBLIC-HOUSES.

Having thus given an historical sketch of the state of the law as respects the observance of the Sabbath in Scotland—which,

like all other laws, human and Divine, was frequently violated—and also of the law for restraining publicans from keeping open at late hours, I shall now proceed to notice the rise and progress of the public-house system, and the kind and quantity of intoxicating drinks consumed in Scotland, at various periods of its history. In the first year in which any Scotch Acts which have been preserved were passed (1424), there was one passed which may be considered the germ of the public-house system, and of all subsequent public-house legislation. It is as follows:—‘It is ordained that in all burgh towns of the realm, and thoroughfares where common passages [roads] are, that there be ordained hostillars and receivers, having stables, and chambers; and that men find in them *bread and ale and all ither food*, as weil to horse or men, for reasonable price.’ This Act is a model of brevity and good sense, as many of our old Scotch Acts are. It comes to the point at once. It simply announces the principles enacted, and leaves the judge ordinaries to see these principles properly carried into effect, within their several jurisdictions. It will be observed that, in this Act, ‘bread and ale’ only are mentioned, and that nothing is said about whisky or other spirituous liquors. The same remark may be made respecting the other Acts of a later date—whisky is never referred to. ‘Taverns for ale and wine’ are the words we meet with—for whisky or ‘aqua vitæ,’ as it was originally called, was not introduced, except for medical purposes, until a comparatively recent period.

ALE FORMERLY THE NATIONAL BEVERAGE OF SCOTLAND.

Ale was unquestionably the ancient and general beverage of Scotland, but wine was also introduced at an early period; and our intercourse and alliance with France, and the cheapness of the wine, appear to have led to its being by no means a rare beverage, even amongst persons of little wealth. It is stated, for example, on the authority of the magistrates and ministers of Edinburgh, in a lawsuit which they had in 1814 respecting the ministers’ stipends, that John Knox ‘drew from his own pipe of claret the day before he died;’ and it is known from the ancient accounts of the city, which are still preserved, that his stipend never exceeded 400 merks, or about £22 4s 5d of our money. That ale was the great national beverage of Scotland until a comparatively recent period, can easily be proved from public documents.

There are accounts in existence which give either the number of bushels of malt consumed, or the materials from which the computation can be made, for each year since 1714; and there are other accounts showing the number of gallons of

whisky consumed for each year since 1724, with the exception of the period from 1786 to 1789. From these documents we can ascertain the quantity of malt consumed during each year. In 1714, the duty was sixpence and a fraction per bushel, and the quantity consumed was 334,320 bushels. In 1718, it fell to 86,695 bushels; and in 1722, to 37,451. In 1725, the trade was nearly at an end, except in the hands of the smuggler, for the quantity fell to 385 bushels, and the total revenue therefrom to £11 2s. During that year a new malt Act was passed by which the duty was reduced to threepence and a fraction; and swarms of English officers of excise were sent down, to the great dismay of the people, vigorously to enforce its provisions. In consequence of these proceedings, the quantity consumed rose to 2,145,233 bushels in 1726, and the revenue derived therefrom to £31,623 17s 5d. During the period from 1726 to 1780, the consumption exceeded two millions of bushels annually, being equal to nearly three bushels for each person of the population (supposed then to average about three quarters of a million), while in 1853 there were only 4,163,830 bushels consumed for a population of three millions, being only one and a half bushels for each person. The following statement shows how the consumption went on up to the present time:—

Years.	Bushels of Malt	Rate of Duty.
1726	2,145,233	3s 9d.
1730	2,151,158	4
1740	1,606,233	“
1750	2,130,000	“
1760	2,632,041	“
1770	1,770,460	4½d.
1780	2,215,487	8½d.
1790	1,544,666	8½d.
1794	1,675,741	“
1796	1,203,023	“
1798	2,085,672	“
1800	876,598	8½d.
1810	820,294	3s 9½d.
1820	1,182,208	3s 7½d.
1830	4,101,946	2s 7½d.
1840	4,397,304	2s 8½d.
1850	4,639,159	2s 8½d.
1851	4,101,946	2s 8½d.
1852	3,931,790	2s 8½d.
1853	4,163,830	2s 8½d.
1854	3,192,691	2s 8½d.
1855	1,630,865	4s.

No Duty was charged on the Malt made into Whisky in 1855.

An approximation to the quantity of ale and beer consumed at different periods can be reached only by deducting, from the total quantity of malt consumed, the proportion which was converted into whisky; and this proportion varied in a very remarkable manner at various periods of our history. The quantity of whisky consumed in 1850 was upwards of seven millions of gallons, being equal to about two and one-third gallons for each person; and, during the earlier period referred to, it did not average 300,000 gallons annually, or half a gallon to each person. Thus, although the proportional consumption of malt has now been diminished by one-half, the consumption of whisky has, at the same time, increased from one-half gallon for each person to two and one-third gallons, or nearly fourfold for an equal population. If, therefore, we now consume four times as much whisky per head as we did from 1726 to 1780, and if, notwithstanding, we then used double the quantity of malt per head which we now use, it follows that the quantity of ale then consumed must have been eight times greater per head than the quantity now consumed. In other words, ale was then the national beverage, and our ancestors were not a whisky-drinking people.

Perhaps no better proof could be given of the enormous comparative consumption of ale and beer in ancient times than is furnished by the annual account-books of the city of Edinburgh, which are still preserved. The Corporation had a right to a local custom on all ale and beers made or brought within the city or liberties; and in 1694 this custom was let to the city tacksman for a sum equal to £4250 of our present money. During the same year, another custom on wines and foreign liquors was let for £2055, making a total annual income arising from intoxicating drinks of £6305. This was an enormous sum to have been raised from such sources in that age. The Town Council never had the right to levy any custom on whisky; because all their rights of custom were granted by royal charters and confirmed by Acts of Parliament, long before the drinking of whisky, as an ordinary beverage, was known in Scotland. As a point of comparison, it may be stated that the Town Council was then bound to levy the Annuity tax of six per cent. on the rental of the city for the stipends of six ministers, who ought to have received from that source £111 2s 2d each, in terms of the Act of Parliament; but not more than £600 a-year could then be raised by this tax, although ten times as much was raised from the tax on intoxicating drinks. The same Annuity Tax now produces about £9000 a-year. If the civic customs on ale, wine, and foreign liquors, had still been leviable, which they are not, and a proportional expenditure for these articles, as compared with the expenditure

for house-rent, had still continued, the civic customs on the excisable liquors would now have amounted to £90,000 per annum!

The number of brewers carrying on business will also assist in giving some idea of the comparative magnitude of the trade in ale about the beginning of last century. When the Act of 1725 enforcing the payment of the new duty on malt, at the sight of the English officers of excise, came into operation in Edinburgh, there was a *strike* amongst the brewers, who refused to brew any longer. Their passive resistance was, however, overcome, and it is related that the defection from the combination was so great that *forty* brewers in Edinburgh, and *ten* in Leith, commenced working within a very short period.

The number of maltsters at different periods, also, throws light on the comparative quantity of ale and beer consumed. The maltsters appear to have been first charged with license duty in 1785. There were then 1567 maltsters' licenses issued in Scotland, and the number gradually diminished till 1810, when there were only 169.

WHISKY: ITS INTRODUCTION AND PROGRESS.

When whisky was first introduced into Scotland, it appears to have been used only as a medicine, and to have been kept strictly under the lock and key of the medical practitioners, as it now is within those American towns where the Maine Law is rigorously enforced, backed by the sympathy and support of the people. A portion of the medical practitioners of Edinburgh—now the Royal College of Surgeons—in 1505 united in their own persons the rather incongruous duties of surgeons and barbers, and, in that capacity, applied to the Town Council, in accordance with the customs of the age, to be formed into a separate incorporation. The Town Council granted the prayer of 'Their bill and supplication,' by issuing the 'Seill of cause, granted be the Towne Conssell of Edinburgh, to the craftis of Surreyoury and Barbouris,' dated July 1st, 1505. In the spirit of the times, this document—amongst other exclusive privileges conferred on the newly incorporated body—provided and declared 'that na persoun, man nor woman, within this Burgh, *mak nor sell any aquavite* within the samyn, except the saidis maisteris, brether and freemen of the craftis, under paine of the escheit of the samyn, but [without] favours.' In this way the medical practitioners of that day obtained the control of the whisky bottle, both as makers and sellers of the spirits, as completely as the apothecaries and druggists now have the control of chloroform, spirits of wine, morphia, and other preparations of opium. This and the other privileges granted by the Town Council

to the new medical incorporation were ratified by a Charter of Confirmation granted by King James IV., during the following year; and by another from James VI., in 1613; and, finally, the original seal of cause and the whole of these charters were ratified and confirmed by an Act of the Parliament of Scotland, passed in the reign of Charles the First, 17th November, 1641. The whisky bottle had been in the exclusive keeping of the medical profession for nearly a century and a half, and, by this Act, it appeared to be irrecoverably placed in their hands—the 'Chirurgians and Barbouris of the said Burgh,' as they are designated in the Act. This potent spirit, however, does not appear to have been retained a very close prisoner by its Parliamentary custodiers. In less than a century after the passing of this Act, it appears to have come into pretty general use.

It may be supposed by some that this monopoly of whisky-selling, on the part of the surgeons, was never really enforced, and that their exclusive privilege was allowed to remain, practically, a dead letter. But this was by no means the case. We find, for example, from the Minutes of the Town Council, of 20th March 1556, that 'Bessie Campbell' had been complained of for violating these privileges; upon which 'the Bailie sitting in judgment ordained Bessie Campbell to desist from making of aqua vite in time coming, or selling of any, except on the market-day, against the privilege granted to the Barbers in their seal of cause.' It will be observed that the prohibition in this judgment against manufacturing whisky was absolute, while the prohibition against its sale tacitly permitted 'Bessie' to sell on the market-day. The probable reason of this distinction was, that the privileges of the Chirurges and Barbouris were not held to prohibit Edinburgh traders from supplying country people, residing beyond the city and liberties, who, on market-days, came to town to purchase this and other articles of consumption. Whether this conjecture be correct or not, is of little importance, for, whatever theory may be adopted, the principle of restrictive legislation must be admitted to have been carried much farther three centuries since than it is now, under the operation of the 'Public-Houses Act.' The principle of the Maine Law thus appears to have been anticipated and enforced in Edinburgh three centuries ago.

Coming down to the period of the Revolution, there is a minute of the Town Council, of 11th April 1690, which 'appoints the Town Treasurer to furnish fourteen hogsheads of aqua vite, for the use of the public, at the rate of thirty-two dollars for each hogshead, extending, on the whole, to the sum of £108 8s 3d, sterling money.' The minute goes on to stipulate that a guarantee for the payment should first be got from the National Exchequer,

before the aqua vite is furnished; and it appears from another minute, of 16th April, that the guarantee had been given, and that the aqua vite was sent to Glasgow for the public service; but without throwing any light on the special service for which it was required. These facts appear to prove that, so recently as 1690, whisky was still in some way under the keeping, or inspection of the Town Council, so that Government, in supplying itself with fourteen hogsheads, for the public service, required the intervention of the Town Council to complete the transaction. The minutes also prove that whisky was then very cheap—only £7 14s 1½d per hogshead.

The public-house system, originating as we have seen in 1424, does not appear to have been of rapid growth for the first three centuries. This can be ascertained with considerable accuracy from the national accounts, because when the Excise duties were introduced into Scotland our financiers appear to have considered public-houses, and everything connected with them, as fair subjects for taxation; and in this way we can ascertain the number of public-houses from the number of licenses issued at various periods.

In 1743, a license-duty, of £1, was first imposed on all 'retailers of spirits,' and there were then 828 licensed retailers. The population at this period may be assumed to have been little more than three-quarters of a million; in 1801 it was ascertained to have been about a million and a-half; and in 1851 about three millions. This disparity of numbers requires to be constantly kept in mind in dealing with facts of this kind bearing on our past history; and before proceeding farther, it may be here stated, as affording some points of comparison, that there are at present as many licenses issued to spirit dealers in Edinburgh as there were then issued in all Scotland; and that in Glasgow there are now twice as many as there were then in all Scotland. The licensed spirit dealers of 1743, however, appear to have been unwilling payers of the tax, for in the following year the number of licenses taken out was reduced to 346.

During the troublous time of the Rebellion, when the royal authority must have been at a low ebb, the numbers became still smaller. In 1745 there were only 255, and in the following year, 218, licenses taken out. In 1747, when the royal authority was re-established, the number increased to 625. In 1751 the duty on licenses was increased to 40s, and the number issued fell to 344; but they increased in 1760 to 819; in 1770 to 893; and in 1780 to 1358. In 1788 a large increase in the amount of the license-duty took place, graduated according to the rent of the licensed premises, and varying from £4 14s to £7 2s. The number issued at the high rates fell, in consequence, to 1220 during that year, and in 1791 to 811.

INCREASE OF WHISKY DRINKING IN SCOTLAND.

In 1794 the number of licenses had again increased to 1304, but the Chancellor of the Exchequer does not appear to have been contented even with this great increase. During that year the fatal change was made in the licensing law, from which may be dated the rapid growth of the whisky-drinking propensities of Scotchmen. The enactment referred to permitted licenses to be granted to 'retailers of plain aqua vitæ only,' at the reduced rate of 20s in the Highlands and 40s in the Lowlands, instead of the former graduated high rates. The effect was magical. There were taken out during that year 4397 of these cheap whisky licenses, in addition to the 1304 general licenses which authorised the sale of foreign as well as British spirits. In this way the number of public-houses in Scotland was increased to 5701, or fivefold, in a single year, and each of the new class of publicans became the centre of a circle, from which the people were taught to drink whisky, in preference to all other exciseable liquors.

In 1815 the number of whisky licenses had increased to 5695, and the general licenses to 2774. Parliament then doubled the duty on whisky licenses and the number during the following year fell to 1809—thus clearly proving that Acts of Parliament have increased and diminished the number of public-houses, and, consequently, have increased and diminished the means of demoralising the people. The duty on general licenses was at the same time increased on houses under £15 of rent to £7 1s; but the number did not materially diminish, because during the following year the rate was reduced to £5 5s. Matters went on in this way till 1824, when the number of general licenses had increased to 3595, and those for whisky alone to the enormous number of 7539. The two classes were then united at uniform rates of duty. In 1825 the license-duty on houses under £10 of rent, was reduced from £4 14s to £2 2s; and on houses under £20 of rent to £4 4s.

The issuing of these two-guinea licenses, in 1825, gave such an extraordinary impetus to the spirit trade that, in each of the years 1829, 1830, and 1831, the total number of licenses issued exceeded 17,200. This was the climax, as regarded the number of public-houses. Thoughtful people became seriously alarmed at the consequent increase of drunkenness; and great efforts were made in various quarters to induce the Burgh Magistrates, and the Justices of the Peace for Counties to reduce the number of public-houses; and the same feeling led to the Parliamentary inquiry of 1832. A reduction in the number of licenses accordingly took place, but not to any great extent.

In 1835 a change was made by which those who sold above fifty gallons annually were charged 50 per cent. additional; but this distinction does not appear to have worked satisfactorily, for in two years thereafter the former rates were re-enacted.

In 1841, the rates payable by 'retailers of spirits' were finally fixed, as they have remained up to the present time as follows:—

For Houses under £10 of rent,	£2	2	0
" " £20 "	4	4	0
" " £25 "	6	12	8½
" " £30 "	7	14	4
Sum of these,	£20	12	7½
Average of these,	5	3	2

During the eight years ending in 1839, the number of licensed houses always exceeded 16,000; and during the seven years, ending in 1846, it always exceeded 15,000. The numbers have gradually diminished since that year under the operation of public opinion, until in 1855 they were reduced to 12,591; but the stimulus given to the consumption of whisky by the Acts referred to, reducing the license duty on low-rented houses, and by other causes which will afterwards be noticed, caused the demand for the whisky to go on with irresistible force.

Do not trouble you with the license duty charged on higher rents, because, as a general rule, that class of houses do much less harm in corrupting the people than the low-rented houses. From this feeling, the licensing Magistrates of Edinburgh have, for many years, given a preference, in all cases of competition, to the high-rented houses, and they refuse to issue new licenses to small houses at low rents. Now, look for a moment at what has been done by Act of Parliament, in opposition to this salutary restriction. Our rulers have, in effect, said to the retailers of spirits, 'If you will open a respectable public-house, with good rooms, well ventilated, and in a good situation, where the rent may be nearly £30, we will fine you in £7 14s 4d yearly. If you will take one somewhat inferior, which may be rented under £25, we will restrict the fine to £6 12s 3½d. If you will take one smaller still, we will further reduce the fine to £4 4s; and if you will oblige us by taking a miserable, small, dark, ill-ventilated house, in a poor neighbourhood, where rents are low, and where the people are most likely to be initiated in drinking habits, we are so anxious to encourage houses of that class that you shall be charged only £2 2s.'

The article sold being already taxed, no fiscal or equitable principle would be violated, either by charging no license-duty to any, or by charging an equal license duty to all—

the right to grant licenses remaining, as at present, in the hands of the local Magistrates. The average duty now payable by these four classes is, as I have already shown, £5 3s 4d, and, if they are taxed at all, I can see no good reason why they should not be taxed equally, at £5 3s 4d each. Such an arrangement could not make much difference to the Chancellor of the Exchequer, and, in my opinion, it would greatly promote the best interests of the working classes, by the gradual extinction of thousands of small public-houses which have done so much evil, and which, under a wise system of legislation, would never have been permitted to exist. When our opponents tell us, as they so frequently do, that we cannot make men sober by Act of Parliament, while we admit the truth of their proposition, we may just hint to them that thousands of sober men have been made drunkards and Sabbath-breakers through the operation of Acts of Parliament, in the way which I have pointed out; and we may add a word to the effect that since Parliament has done so much evil by its unwise acts, surely it may be allowed, without so much violent opposition, to repeal some of its most objectionable enactments, in order to mitigate these evils. Even if it be admitted that Parliament is powerless to promote sobriety, surely we are at least entitled to ask, that it should no longer promote, as it has too often done, by unwise legislation, the demoralization of the people.

QUANTITY OF WHISKY CONSUMED ANNUALLY.

The quantity of whisky consumed at various periods has undergone the most extraordinary and unaccountable changes. In 1725 the consumption was 145,602 gallons, and during the next eleven years was always about 200,000 gallons. In 1736 and 1737 it increased to above 500,000 gallons, and in 1741 it fell to 351,707 gallons. During the whole of this period the duty was so low as from 3d to 6d per gallon. In 1745, during the Rebellion, the consumption increased to 598,469 gallons, and in 1751 and 1752 to upwards of 800,000 gallons. During this period the duty varied from 6d to 1s 3d. In 1758, 1759, and 1760 the consumption fell to about 60,000 gallons, or less than one-twelfth part of what it had been a few years before. The duty during this period was 1s 2d and 1s 7½d. In the five following years it varied from 1s 2d to 1s 10½d, and the consumption again fell, averaging only about 55,000 gallons. In 1770 it increased to 69,068 gallons, the duty being the same as before. As a point of comparison with the consumption during these twelve years, it may be noticed that the present consumption by a town of 30,000 inhabitants (such as Leith, for example) is

about 70,000 gallons, so that the average annual consumption, during the period referred to, in the whole of Scotland, was not equal to the present consumption in a town of 30,000 inhabitants. Nothing could more clearly show that the Scotch were not then a whisky-drinking people. In 1780 the duty was increased to 3s 5½d and 4s 1½d, and the consumption was 194,242 gallons; in 1786 the duty was 2s 7½d, and the quantity consumed was 824,988 gallons.

Coming down to more recent times, the consumption and duty were respectively as follows:—

Year.	Gallons.	Amount of Duty per Gallon.
1800	1,277,596	
1810	1,748,140	5s 9d.
1820	1,863,987	6s 2d.
1825	5,981,459	2s 4d, 3s 4d.
1830	6,007,631	2s 10d, 3s, 3s 2d.
1840	6,180,138	3s 4d, 3s 8d.
1850	7,122,987	3s 8d.
1851	6,830,710	3s 8d.
1852	7,172,015	3s 8d.
1853	6,534,648	3s 8d, 4s 8d.
1854	6,553,239	4s 8d, 5s 8d, 6s.
1855	5,344,319	6s, 7s 10d, 8s.

No duty is now imposed on the malt made into whisky, at the 8s duty. The above figures all refer to the usual financial year commencing on the first of April, and are taken from the first Report of the Commissioners of Inland Revenue. It will be seen from these figures that the diminution in the number of public-houses had not, up to 1852, reduced the consumption of whisky; but that, on the contrary, it went on steadily increasing till it reached its highest point during that year.

It is, however, right to state that a large portion of the increased consumption shown in the table from 1820 to 1830, was probably owing to the reduction in the rate of duty. The comparatively high duty previously imposed had the effect of encouraging smuggling, which was carried on to such an extent that, in the opinion of the Commissioners of Inland Revenue, one-half of the whisky consumed in Scotland during that year was furnished by the smuggler; and it is well known, from other sources, that smuggling to a considerable extent existed in Scotland for a very long period prior to 1820. In 1823 the duty was reduced to 2s 4½d, and in two years thereafter the quantity which paid duty had increased nearly threefold.

DIMINUTION OF THE NUMBER OF PUBLIC HOUSES.

I have always been of opinion that if we diminish the number of public-houses, and do nothing more, we do not thereby necessarily, and at once, diminish the amount of consumption; for existing drunkards have their habits so formed, and many of them have such an intense desire for spirits, that they will obtain it in spite of all the barriers of this kind which may be put in their way. A single gin-palace may swallow up many small public-houses, and yet do as much business in one establishment as was formerly done in many smaller ones; and thus no immediately perceptible decrease in the quantity of spirits sold can be expected to arise from the operation of this cause alone. But the diminution in the number of houses has a tendency to stop the progressively increasing trade in spirits, because every house suppressed is the removal of a snare for entrapping and enlisting the sober persons of its neighbourhood into the ranks of the drunkards; and there can be no doubt that, from the operation of this cause, there would have been a still greater increase in the quantity of spirits sold, if the number of these houses had not been so much diminished. Death rapidly removes the existing generation of drunkards, and, if we can prevent a new generation from rising up, from the young and sober classes of society, to fill the places of those who, from intemperate habits, have been carried to a premature grave, we may then look for a large diminution in the quantity of spirits consumed, and for other beneficial results which will assuredly follow. It is in this way chiefly that the suppression of small public-houses, especially in low neighbourhoods, does so much good. Every such house is in effect a mission station for implanting evil habits, having a fixed staff whose interest, and even livelihood, depend on their being able to make their neighbours good customers, or, in other words, to make them large consumers of whisky. If you wish to Christianize low neighbourhoods, all experience proves that you can do it most effectually by planting mission stations in their midst. If, on the other hand, it were desired still farther to demoralize them, experience equally proves that it could be done most effectually by planting low public-houses in their midst. Holding these views, and knowing the other great social evils which are frequently connected with such houses,* I rejoice with my whole heart at every diminution of their number.

* On this subject the following remarks were made at the Hall Sessions on the 31 April, 1838, by the learned Recorder, Mr Samuel Warren, M.P.:-

As for intemperance, very strenuous efforts are being made to deal with those pest-houses called beer-shops, and other places where intoxicating liquors are almost the recognized incentives to crimes of every description. A depopulation of great influence

CALLS FOR RESTRICTIVE LEGISLATION.

After 1850 the agitation for a restrictive law to close all public-houses at eleven o'clock at night, and during the whole of Sunday, went on with much vigour. About 200 members of the Edinburgh Abstinence Society united with other friends of the cause, to watch and record the number of persons who entered all the public houses within the City of Edinburgh during one Sunday; and the number of visits was found to be 41,796. The number of visitors to certain houses was put down at such incredibly large figures, that the public doubted the accuracy of the returns. In these circumstances, the Magistrates ordered the same houses to be watched by the police, on the following Sunday, and the number of visits to be recorded, when the numbers were found to be rather larger than those previously taken by the members of the abstinence society. These proceedings produced a great impression in the city in favour of restrictive legislation, as did the continued efforts of this Society in support of the cause. The Magistrates of Edinburgh, in 1852 and 1853, made a great step in advance to promote the cause of Sabbath observance, by inducing a large majority of the spirit dealers within their jurisdiction voluntarily to close their houses during the whole of the Sabbath. The good effects of this movement were so apparent in Edinburgh that no candid man ventured to call the fact in question. The experience of Edinburgh increased the desire formerly existing, in other places, for a general restrictive law for this purpose. The cause was likewise greatly promoted by certain Parliamentary returns, moved for by that indefatigable friend of the people, and, in my opinion, the best member Scotland ever had—Joseph Hume. These returns, going back, as they did, for a series of years, showed such an appalling amount of drunkenness and crime, especially in Edinburgh, Glasgow, and other large towns, that it was found to be impossible any longer to resist the calls

waited the other day on the new Home Secretary, Mr Walpole, and their well-founded representations and earnest recommendations were not made in vain. The Home Secretary let fall one valuable suggestion—that he should communicate with all the judges of assizes and sessions, in order to ascertain to what extent the evidence in criminal cases connected the offence with beer-houses. Gentlemen, he is welcome to look at my notes during the six years of my sitting here; and he will find almost every case—at least every other case—directly disclosing either the concoction, or the actual perpetration, of crime at these infernal scenes of guilt and degradation—where all seeds of virtue are consumed in the excitement of intemperance, and crime itself arrayed in hues of attraction and pleasure. I do most earnestly hope to see a measure shortly laid on the table of the House of Commons having for its object to bring these scenes of abomination—these moral charnel-houses—more effectually within the control of the authorities, without carrying interference too far. The last of the three sources to which I referred has come latterly into mournful prominence, as the vice of the age—and whatever other sources it may have, in the execrable wickedness of our sex—of either sex—who can deny that it is fed from those other two sources to which I have referred?

which were made for restrictive legislation; and, accordingly, the 'Public-Houses Act' was introduced and carried through during the session of 1853, in the manner already described, without much public opposition. It came into operation, as already stated, on the 21st of May 1854, and has been productive of an incalculable amount of good.

After the Act had been in operation for three years, Mr Murray Dunlop, M.P., at the request of friends of the cause in this city, moved for a return, showing the working of the Act in all the towns having a population exceeding 5000, during the first three years of its existence, and also during the three years immediately preceding the passing of the Act. These returns have not yet been issued by the House of Commons, but copies of those for several of the large towns have been published by the local authorities; and the favourable change which has taken place under the operation of the new law, in reducing the amount of drunkenness and crime, has greatly exceeded the most sanguine expectations of the original promoters of the Act.

Mr Murray Dunlop likewise moved for a return showing the quantity of spirits consumed in Scotland during each of the six years referred to. This return has been issued; (March 1, 1858) and in place of showing an increased consumption of nearly two millions of gallons, as was stated to be the case in the memorial recently presented by the Glasgow Committee to Sir George Grey, it shows a large decrease. There is no doubt or difficulty respecting the figures of this return as regards the first four years of the six, but there is a difficulty as regards the fifth and sixth years (1856 and 1857) which requires to be explained. In these two years the duty on whisky in Scotland and England was equalised, and, in consequence of no separate account having been kept for the two kingdoms, no return could be got for Scotland except one showing the number of gallons on which duty had been paid in Scotland; and this return necessarily included all the whisky manufactured in Scotland, which was afterwards sent to, and consumed in England.

During the first four years of the series separate accounts were kept, and the average yearly quantity then sent to, and consumed in England, was thus ascertained to have been 2,333,217 gallons. If it be assumed that England consumed neither more nor less during 1856 and 1857 than the average annual amount of its consumption during the four preceding years, the true consumption of Scotland will be accurately ascertained by deducting this average number of gallons from the quantity stated in the return as having paid duty in Scotland during these two years. This operation I have performed, and the following figures give an accurate view of the results:—

THREE YEARS UNDER THE OLD LAW.			
Years ending 31st May.	Whisky.	Brandy, Gin, and Rum.	Totals.
1852	6,764,863	246,675	7,011,538
1853	7,134,327	271,869	7,406,196
1854	6,822,261	265,720	7,085,981
	20,721,451	782,264	21,503,715
THREE YEARS UNDER THE NEW LAW.			
Years ending 31st May.	Whisky.	Brandy, Gin, and Rum.	Totals.
1855	6,442,047	235,075	6,677,122
1856	5,658,108	191,105	5,849,213
1857	6,582,862	236,122	6,818,984
	18,683,017	662,302	19,344,457
The General Results condensed are as follows:—			
Years ending 31st May.	Total Consumption Under Old Law.	Years ending 31st May.	Total Consumption under New Law.
1852	7,011,538	1855	6,677,122
1853	7,406,196	1856	*5,849,213
1854	7,085,981	1857	6,818,984
Totals.	21,503,715		19,344,457
	Decrease under New Law,		2,159,258

It appears by this mode of computation that, in place of an increased consumption of nearly two millions of gallons yearly, there has been an actual decrease on the three years of 2,159,258 gallons. My own opinion is, that, looking to the facilities now enjoyed for sending any quantity of whisky, however small, to England, and to the fact that nothing less than 20 gallons could formerly be sent, the real quantity consumed in England must have increased considerably beyond this average; and if this be the case, the decrease in the consumption of Scotland must be

* In 1854, 1855, and 1856, the duty on whisky was advanced five times, and the intention somehow got abroad, and led to very large speculative purchases on which the lower duty was paid before the advanced rates took effect. The large stock thus accumulated in the hands of traders served for the consumption of a portion of the following years, and hence the apparent reduction to the enormous extent of 1,556,983 gallons during 1856, as compared with 1855, and of only 207,869 gallons during the succeeding year. If the average of both runs were taken for each year, it would probably be more correct in fact than the figures given in the table.

considerably greater than is assumed in this calculation. I do not, however, attribute the same importance which some do, as a test, to any rise or fall, during a few years, in the quantity of spirits consumed; and the foregoing figures are produced mainly to disprove the assertions of the Glasgow Committee, that the 'Public Houses Act' had occasioned the enormous additional consumption of nearly two millions of gallons of whisky in one year. Many circumstances modify the apparent consumption of whisky shown in the Excise returns during particular years; as, for example, speculative purchases made, and duty paid on them, in anticipation of an increased rate of duty being imposed; the higher and lower prices of grain; the higher and lower rates of duty on malt and whisky; and the ability of the working classes—the great consumers—to spend more or less of their earnings in the purchase of spirits. All these circumstances will, to some extent, affect the apparent consumption of particular years, and therefore it is unsafe to draw sweeping general conclusions from isolated facts. It is equally our duty to act properly whether the result of our efforts shall be to produce a small or a large return to those whose benefit we are anxious to promote.

DRUNKENNESS AND CRIME IN GLASGOW.

The statistics of drunkenness and crime which the order for Mr Murray Dunlop's return has already brought to light would, to me, be a tempting subject on which to dilate at length, but for the space which these observations have already occupied, and therefore I shall not go deeply into the general question at present, but hope to have some other opportunity of expressing my sentiments on the subject after the returns shall have been issued by Parliament. In the meantime I cannot resist the pleasure of briefly referring to the returns for Glasgow and some of the large towns, in the shape in which they have been published in the Glasgow and other local newspapers.*

The following are the total number of cases of drunkenness in Glasgow for each of the three years ending in 1853, under the old law; and for each of the three years ending in 1856, under the new law. The population, according to the best authority,

* From inquiries which I made, by letter, while these sheets were passing through the press, I find, by an answer received, of date 10th April, from the respected superintendent of Police in Glasgow, Captain Smart, who has done so much to promote the cause of sobriety, that the returns for the six years, as printed in the Glasgow newspapers, were for the six years ending in 1846, whilst those given in Mr Dunlop's Parliamentary returns, are for the six years ending 1857, and hence certain discrepancies. All the Glasgow returns are for the natural years, ending respectively on 31st December, and thus only two years and seven months of the period embraced in the returns which follow (ending in 1856) were, strictly speaking, under the operations of the new law.

Dr Strang, the City Chamberlain, was 329,626 in 1851, and 391,400 at the close of 1857, making a difference of population between these two periods of no less than 62,374.

TOTAL NUMBER OF CASES OF DRUNKENNESS.

Year.	No. of Cases under Old Law.	Year.	No. of Cases under New Law.
1851	24,019	1854	19,434
1852	23,788	1855	16,266
1853	23,841	1856	17,446
	71,648		53,146

Here there is a real decrease of 18,502 cases of drunkenness under the operation of the Public-Houses Act, during the first three years. Taking the cases of drunkenness on Sundays apart from the other cases with which they are mixed up in the first view, the following are the results:—

SUNDAY DRUNKENNESS.

Year.	No. of Cases under Old Law.	Year.	No. of Cases under New Law.
1851	1525	1854	464
1852	1339	1855	481
1853	1218	1856	521
	4082		1466

The decrease here is enormous—from 4082 cases of Sunday drunkenness, under the old law, to 1466 cases, under the new.

We come next to the cases of drunkenness and crime combined—that is, cases of persons who were charged with the ordinary run of criminal offences, great and small, or with offences under the Police Act, and who were drunk when they were apprehended. This classification, of course, excludes all the helpless, inoffensive drunkards who were carried to the Police-office merely for their own protection, and who were discharged without being brought before the Magistrates:—

DRUNKENNESS AND CRIME COMBINED.

Year.	No. of Cases under Old Law.	Year.	No. of Cases under New Law.
1851	13,328	1854	6787
1852	10,985	1855	6058
1853	10,659	1856	6525
	34,972		19,370

In this class of cases there is likewise an enormous decrease—from 34,972 under the old law, to 19,370 under the new.

It has thus been proved to you that, in the great city of the West, the chosen battle field of our opponents on all occasions, the total number of cases of drunkenness was 33 per cent. greater under the old law than under the new; that the number of Sunday cases was about 200 per cent. greater under the old law than under the new; and that the crime committed under the influence of drunkenness was 84 per cent. greater under the old law than under the new. It must be remembered that this last division consists of the class of offenders referred to in the evidence of Principal Lee, already quoted, in which he so justly states that great injury and suffering is inflicted on innocent persons, and much trouble and expense is entailed on the community, in the apprehension, trial, and punishment of the offenders. Among this criminal class it has been shown that there was a decrease, from 34,972, under the old law, to 19,370, under the new—a diminution of 15,602 cases of crime combined with drunkenness, under the operation of the new law. Had the Public-Houses Act done nothing more than this, it would have been a most valuable enactment; but other towns have derived equal advantages from that excellent measure, which I, therefore, hope the Legislature will maintain in all its integrity.

I am anxious to impress on those who enter on this question, the great importance of giving effect to the increase of population in Glasgow during the last six years, in so far as it bears on the working of the Public-Houses Act. We are apt to talk of an increased population of 62,374 without attaching any very definite meaning to this large number. To enable you to have some idea of the vast number of people represented by these figures, who have been added to the former population of Glasgow during these six years, I may state that it is equal to the united population of all the towns within a wide circuit around the city of Edinburgh. Include in this circuit, Leith, Portobello, Musselburgh, Haddington, Dalkeith, Lasswade, Queensferry, Linlithgow, and Stirling, and, according to the census of 1851, you will have a population nearly equal to the increase in the population of Glasgow during the last six years. If then, you wish to make a perfectly just comparison respecting the amount of drunkenness and crime which occurred in Glasgow in 1857, pass over the five years immediately preceding, and take the amount of drunkenness and crime for the sixth year, counting backwards, (1851) as your point of comparison. Having ascertained the amount of drunkenness and crime during that year, then add the amount of drunkenness and crime for the same year which occurred in all the towns named, and the aggregate amount should be equal to the drunkenness and crime

which would have existed in Glasgow during 1857, if the Public-Houses Act had not been passed, and if no similar measure had been brought into operation to repress what is described in one of the old Acts before quoted as 'the vile and detestable sin of drunkenness.' It will therefore be seen that, in addition to the absolute decrease of crime shown in these tabular statements, there has been a large additional relative decrease, which these tables do not represent; and the same remarks apply, more or less, to the increased population of all the other large towns.

We come next to the prison returns for Glasgow, in which we likewise find an extremely favourable result:—

Year.	Daily Average Number of Prisoners under the Old Law.	Year.	Daily Average Number of Prisoners under the New Law.
1852	675	1855	573
1853	606	1856	491
1854	589	1857	462

DRUNKENNESS AND CRIME IN EDINBURGH.

Edinburgh, within the limits of its Police Act, contained in 1851 a population of 165,000, and is supposed to have increased about 15,000 during the six succeeding years. The Returns for Edinburgh have been made in compliance with the orders of the House of Commons, for each of the last six years, ending respectively on the 31st May; and the number of cases is as follows:—

THREE YEARS UNDER THE OLD LAW.		THREE YEARS UNDER THE NEW LAW.	
Year.	No. of Cases.	Year.	No. of Cases.
1852	9670	1855	8561
1853	9792	1856	8018
1854	9443	1857	7324
	28,905		23,903

There has been a total decrease of 5002 cases under the operation of the new Act; so that under the old law the total number of cases of drunkenness was about 20 per cent. greater than under the new.

Taking the cases of drunkenness on Sundays apart from the others, the following are the results:—

THREE YEARS UNDER THE OLD LAW.		THREE YEARS UNDER THE NEW LAW.	
Year.	No. of Cases.	Year.	No. of Cases.
1852	701	1855	139
1853	704	1856	153
1854	604	1857	176
	2009		468

There is thus a decrease of 1521 cases of Sunday drunkenness in Edinburgh out of 2009, so that under the old law the proportion of such cases was 300 per cent. greater than under the new.

DRUNKENNESS AND CRIME IN LEITH.

Coming now to the neighbouring town of Leith, the population in 1851, within the limits of its Police Act (which are smaller than those of the Parliamentary Burgh) was about 26,000; and the total number of cases for each of the last six years, ending respectively on the 31st May, was as follows:—

THREE YEARS UNDER THE OLD LAW.		THREE YEARS UNDER THE NEW LAW.	
Year.	No. of Cases.	Year.	No. of Cases.
1852	850	1855	666
1853	651	1856	497
1854	727	1857	523
	2228		1686

The decrease was thus 542 cases out of the former number of 2228,—so that the number of cases under the old law was about 44 per cent. greater than under the new.

Taking the cases of Sunday drunkenness by themselves, the numbers are—

THREE YEARS UNDER THE OLD LAW.		THREE YEARS UNDER THE NEW LAW.	
Year.	No. of Cases.	Year.	No. of Cases.
1852	95	1855	52
1853	102	1856	14
1854	109	1857	21
	306		67

The decrease has thus been 239 out of 306 cases; in other words, the number of Sunday cases was about 250 per cent. greater under the old law than under the new.

NUMBER OF PRISONERS FOR EDINBURGH AND LEITH.

We naturally go to the prison from the police-office, and there we may, with advantage, watch the fearful results of drunkenness and crime combined, as they existed both under the old law and the new. The great prison situated within Edinburgh, contains all the prisoners belonging to Edinburgh, Leith, and the other portions of the county; and the average daily number of these, during the six years ending respectively on the 31st May, was as follows:—

THREE YEARS UNDER THE OLD LAW.		THREE YEARS UNDER THE NEW LAW.	
Year.	Average daily No. of Prisoners.	Year.	Average daily No. of Prisoners.
1852	634	1855	395
1853	620	1856	380
1854	495	1857	331

This table shows that, comparing the first year of the series with the last, the average daily number of prisoners was nearly 100 per cent. greater under the old law than under the new. With reference to the decrease in the number of prisoners in 1854, as compared with 1853, I may state that, having then been chief Magistrate of the city, the other Magistrates and myself refused licenses to all Sunday traders who were convicted of other offences—in effect established the principle of the Public-Houses Act over a large portion of the city before it was enacted by Parliament as the general rule for Scotland; and hence arose the great decrease of prisoners in 1854, as compared with the preceding year. The value of the principle embodied in the Act was thus practically established in Edinburgh before the Act was passed.

I cannot avoid referring to certain returns respecting the Prisons of Edinburgh just issued, made up to the first day of April, 1858. From these returns I have taken the average daily number of prisoners for the quarters ending on the first day of April, during each of the last eight years. The comparison is one of the fairest which could be made, because four of the years compared are those immediately before the passing of the Public-Houses Act, and the other four are those which followed immediately thereafter.

NUMBER OF PRISONERS FOR THE EIGHT QUARTERS, ENDING ON 1ST APRIL.

Year.	Average Daily Number of Prisoners.	Year.	Average Daily Number of Prisoners.
1851	589	1855	380
1852	589	1856	379
1853	617	1857	310
1854	487	1858	317

It will be seen from these figures that, although, during the first three of the quarters, there was an extraordinary degree of uniformity in the daily average number of prisoners, there was, on the corresponding quarter of the fourth year, a considerable decrease. This decrease was clearly traced, at the time, to the measures already referred to, by which the great majority of the spirit dealers were induced voluntarily to close their places of business on Sundays during the whole day. In short, the people of Edinburgh partially anticipated the Public-Houses Act by one year, and therefore enjoyed a portion of the fruits a year earlier than was done in other places.

So great was the amount of crime in Edinburgh before the passing

of the Act, that the accommodation in the prison was found quite insufficient for the number of prisoners; and on the representation of the Prison Board, the sum of £12,000 was actually voted for the purpose of building an addition to the prison of Edinburgh. All that money we should have had to pay, had this Act not been passed; but it caused such a decrease in the number of prisoners that, at the instance of the Town Council, it was agreed not to proceed with the contemplated addition to the prison. When any person attempts to throw discredit on these statistics, by saying that the Public-Houses Act has not been the cause of this decrease in crime, ask what has been the cause?—Insist on getting a distinct answer to the question why, when the numbers had been going on increasing, or remaining stationary, they have now fallen down to about one-half? There must have been some cause for this; and if any one declines to agree with us, in attributing it to the operation of the Public-Houses Act, he is bound by all the principles of consistency and sound logic to give his own theory of the cause of decrease.

DRUNKENNESS AND CRIME IN DUNDEE.

In Dundee, the cases during each of the six years, ending respectively on 31st May, stood thus—

THREE YEARS UNDER THE OLD LAW.		THREE YEARS UNDER THE NEW LAW.	
Year.	No. of Cases.	Year.	No. of Cases.
1851	1208	1854	1186
1852	1042	1855	987
1853	1416	1856	1002
	3666		3175

The decrease was thus limited to 491 out of 3666 cases; in other words, the number of cases in Dundee under the old law, was only 14 per cent. greater than under the new.

As regards the Sunday cases in Dundee, the Act appears to have been more strictly enforced than in cases occurring during the other days of the week; and hence the results of the Sunday cases more nearly approach those of the other towns.

THREE YEARS UNDER THE OLD LAW.		THREE YEARS UNDER THE NEW LAW.	
Year.	No. of Cases.	Year.	No. of Cases.
1851	95	1854	43
1852	107	1855	45
1853	112	1856	56
	314		144

The decrease in Sunday cases was thus 170 out of 314; in other words, under the old law the cases were about 120 per cent. greater than under the new.

DRUNKENNESS AND CRIME IN PAISLEY.

Taking Paisley next in order, the number of commitments for crimes of all kinds, including cases of drunkenness, was as follows, for each of the six years, ending respectively on 31st May:—

COMMITMENTS.		COMMITMENTS.	
THREE YEARS UNDER THE OLD LAW.		THREE YEARS UNDER THE NEW LAW.	
Year.	No. of Cases.	Year.	No. of Cases.
1852	797	1855	716
1853	977	1856	781
1854	878	1867	587
	2652		2084

The decrease shown is 568 out of 2652 cases. Thus the total number of commitments was 25 per cent. greater under the old law than under the new. It is explained in the return that the number of commitments was unduly increased during 1856, as compared with 1855, by the fact that 135 soldiers were committed for military offences during 1856, and are included in the numbers for that year.

The number of cases classed in Paisley as 'drunk, assaults, and disorderly,' were as follows during the same period:—

THREE YEARS UNDER THE OLD LAW.		THREE YEARS UNDER THE NEW LAW.	
Year.	No. of Cases.	Year.	No. of Cases.
1852	308	1855	297
1853	459	1856	241
1854	414	1857	209
	1181		747

The decrease in the cases classified as 'drunk, assaults, and disorderly,' has thus been 434 out of 1181; in other words, the number of cases under the old law was about 56 per cent. greater than under the new.

The average daily number of prisoners in Paisley, was as follows during each of the six years:—

THREE YEARS UNDER THE OLD LAW.		THREE YEARS UNDER THE NEW LAW.	
Year.	No. of Cases.	Year.	No. of Cases.
1852	111	1855	102
1853	141	1856	92
1854	124	1857	73

Thus the average daily number of prisoners was about 50 per cent. greater during the first year of the series than during the last.

DRUNKENNESS AND CRIME IN GREENOCK.

Going onwards to Greenock, the total number of cases of drunkenness is stated to be as follows.

THREE YEARS UNDER THE OLD LAW.		THREE YEARS UNDER THE NEW LAW.	
Year.	No. of Cases.	Year.	No. of Cases.
1852	2199	1855	2887
1853	2608	1856	1905
1854	4235	1857	1495
	9042		6287

The decrease in Greenock has therefore been 2755 cases. Thus the total number of cases under the old law, was about 45 per cent. greater than under the new.

The Sunday cases of drunkenness in Greenock, taken apart from the others, were as follows:—

THREE YEARS UNDER THE OLD LAW.		THREE YEARS UNDER THE NEW LAW.	
Year.	No. of Cases.	Year.	No. of Cases.
1852	276	1855	221
1853	303	1856	129
1854	426	1857	131
	1005		481

The decrease in the Sunday cases of drunkenness in Greenock was thus 524 out of 1005. The number of cases under the old law was therefore about 110 per cent. greater than under the new.

DRUNKENNESS AND CRIME IN ARBROATH.

In Arbroath the number of cases of drunkenness for each of the six years was as follows:—

THREE YEARS UNDER THE OLD LAW.		THREE YEARS UNDER THE NEW LAW.	
Year.	No. of Cases.	Year.	No. of Cases.
1852	528	1855	277
1853	553	1856	234
1854	454	1857	202
	1535		713

Arbroath thus holds the distinguished pre-eminence in progressive sobriety; the decrease in the number of cases has been 822 out of 1535. Under the old law, therefore, the total number of cases was 115 per cent. greater than under the new.

The Sunday cases in Arbroath show still more delightful results, thus:—

THREE YEARS UNDER THE OLD LAW.		THREE YEARS UNDER THE NEW LAW.	
Year.	No. of Cases.	Year.	No. of Cases.
1852	20	1855	3
1853	12	1856	4
1854	20	1857	0
	52		7

There is thus a decrease of 45 cases of Sunday drunkenness out of 52; the proportions being, that under the old law the number of Sunday cases was 600 per cent. greater than under the new.

DRUNKENNESS AND CRIME IN INVERNESS.

Going onwards to the capital of the Highlands, we find a great improvement in Inverness:—

THREE YEARS UNDER THE OLD LAW.		THREE YEARS UNDER THE NEW LAW.	
Year.	No. of Cases.	Year.	No. of Cases.
1852	300	1855	202
1853	295	1856	159
1854	256	1857	132
	851		493

There is thus a decrease of 358 out of 851 cases in Inverness. The number of cases under the old law was 70 per cent. greater than under the new.

The result of the Sunday cases of drunkenness in Inverness is still more remarkable, and stands next in order to that of Arbroath, as follows:—

THREE YEARS UNDER THE OLD LAW.		THREE YEARS UNDER THE NEW LAW.	
Year.	No. of Cases.	Year.	No. of Cases.
1852	65	1855	22
1853	45	1856	7
1854	46	1857	8
	154		37

The decrease in Inverness has been 117 out of 154 cases; under the old law the decrease was 320 per cent. greater than under the new.

After these sheets were in type, the Return for all the towns, obtained on the motion of Mr Murray Dunlop, and printed by order of the House of Commons, (24th March, 1858,) reached me. Not to go over the ground again in detail, I have condensed the Results into three tables. The Return is for the six

years ending on the 31st May, 1857, being three years under the old law, and three years under the new.

Several of the burghs have sent incomplete returns, and some have sent none.* The following Abstract shows the population of each burgh from which complete returns have been obtained; the total number of cases of drunkenness alone, and of drunkenness combined with crime, which occurred in each burgh (1) during the last three years of the old law, and (2) during the first three years of the new. I am happy to observe that in all the towns, except two, there is a large decrease in drunkenness and crime under the operation of the new law. The two towns which thus stand out in bad pre-eminence are Ayr and Elgin. It would be very satisfactory, for their own credit, if some explanation could be given of this damaging fact.

	Population.	Total Cases	
		under Old Law.	under New Law.
Glasgow, . . .	329,097	66,993	53,755
Edinburgh, . .	160,302	28,905	23,903
Dundee, . . .	78,931	9,598	8,330
Aberdeen, . . .	71,973	13,744	10,357
Paisley, . . .	47,952	2,054	1,527
Greenock, . . .	36,689	9,042	6,287
Leith, . . .	30,919	2,228	1,686
Perth, . . .	23,835	2,274	1,862
Arbroath, . . .	16,986	1,538	715
Montrose, . . .	15,238	1,140	1,089
Airdrie, . . .	14,435	1,765	1,594
Stirling, . . .	12,837	1,851	1,191
Inverness, . .	12,793	1,081	697
Port-Glasgow, .	6,986	1,214	920
Cupar, . . .	5,686	213	135
The two following towns show an increase:—			
1. Ayr, . . .	17,624	1,503	1,660
2. Elgin, . . .	6,357	223	393
	888,620	145,366	116,101

The population of these towns in 1851 was 888,620. As the town population of Britain increases, on an average, at the rate of $2\frac{1}{2}$ per cent. per annum (and in Glasgow and Dundee at a higher rate), the total increase since 1851 will thus be 15 per cent., or 133,293; and the present population will therefore be 1,021,913. The total number of cases of drunkenness and crime during the three years, under the old law, was 145,366;

* The three abstracts which follow I allowed to appear in the *Daily Express*, in order that the import of this valuable Return might be generally known as early as possible, without waiting for the publication of this pamphlet.

while, under the new law, with a larger population, the number fell to 116,101. The decrease thus amounted to the enormous number of 29,365 cases during three years, the number under the old law being 22 per cent. greater than under the new, without taking into account the subsequent increase in population.

The next abstract has reference to the Sunday cases alone—separating them from those which occurred during the other days of the week—and the results are certainly far more favourable than even the most enthusiastic friend of restrictive legislation could possibly have dreamed of. The first column of the table shows the number of cases during the last three years in which the old law was in operation, ending 31st May, 1854; and the second column shows the number of cases during the first three years in which the new law was in operation, ending 31st May, 1857. The comparison is therefore so fair, that no possible objection can be raised to it, either by the friends or the opponents of the Forbes McKenzie Act.

CASES OF DRUNKENNESS AND CRIME ON SUNDAYS.

	Three Years under the Old Law.	Three Years under the New Law.		Three Years under the Old Law.	Three Years under the New Law.
Glasgow,	4082	1466	Airdrie,	509	178
Edinburgh,	2009	488	Stirling,	511	188
Dundee,	1031	444	Inverness,	219	71
Aberdeen,	797	485	Port-Glasgow,	96	59
Paisley,	210	114	Cupar,	40	22
Greenock,	1008	481	Ayr,	147	18
Leith,	306	67	Elgin,	14	7
Perth,	263	58			
Arbroath,	93	27		11,471	4299
Montrose,	136	126			

It thus appears that, under the old law, when the public-houses were open on Sundays, there occurred 11,471 cases of drunkenness alone, or drunkenness combined with crime; and that during the same period of time, under the operation of the new law, when the public-houses were required to be shut during the whole of the Sundays, the number of cases fell to 4299. The number of cases of drunkenness alone, and drunkenness combined with crime, was thus 165 per cent. greater on Sundays, under the old law than under the new, in the chief towns of Scotland, now including a population exceeding a million; and in every town in the table, without exception, there has been a considerable decrease. I trust that after this exposure of the mis-statements of the publicans and their abettors, respecting the alleged great increase of drunkenness on Sundays, through the operation of unlicensed shebeens, we shall

bear no more of their complaints; and, should they be impervious to all higher motives, that a feeling of shame may induce future silence.

As regards that portion of the return which refers to the Prisons of Scotland, it appears that the average daily number of prisoners in each of the burghs, with two exceptions, shows a large decrease. The two burghs thus distinguished are Airdrie and Forfar. The total daily average number of prisoners during the first of the three years, under the old law, was 2315, and during the last year of the new law, 1434. There is thus the gratifying fact apparent, that the daily average number of prisoners in Scotland has been diminished under the operation of the new law, by 881. The number of prisoners maintained daily at the public expense was, in fact, 60 per cent. greater in 1852, under the old law, than in 1857, under the new, as the following table will show:

	No. of Prisoners in 1852.	No. of Prisoners in 1857.		No. of Prisoners in 1852.	No. of Prisoners in 1857.
1. Glasgow,	675	462	14. Lanark,	21	11
2. Edinburgh,	634	331	15. Dunfermline,	18	13
3. Dundee,	196	94	16. Montrose,	18	8
4. Paisley,	108	73	17. Banff,	16	11
5. Stirling,	106	71	18. Kilmarnock,	14	12
6. Perth,	94	56	19. Stranraer,	14	9
7. Aberdeen,	80	62	20. Elgin,	10	8
8. Ayr,	70	45	On the two following prisons there has been an increase:)		
9. Cupar,	52	25			
10. Dumfries,	49	26	1. Airdrie,	23	31
11. Hamilton,	42	28	2. Forfar,	16	18
12. Greenock,	32	29			
13. Inverness,	27	11			
			Totals,	2315	1434

For any discrepancies betwixt the returns printed in the local papers, and those printed by the House of Commons, I am not responsible, as I have carefully copied both sets as they appeared in the several publications. All the returns respecting Glasgow (including both sets), are for the natural years, ending 31st Dec., whilst the order of the House of Commons was for returns for the years ending on the 31st of May. In this respect, the Glasgow returns are not in strict conformity with the order of the House, although this does not appear on the face of the paper as printed; and they come down one year later than those published in the Glasgow newspapers. The effect of this change in the month during which the years terminate is, that the first three years, ending 31st Dec., 1854, included in the House of Commons returns, and which were intended to show the operation of the old law, were not all under its operation. The period of seven months and ten days, from 21st May to 31st December 1854, having been under

the operation of the new law, the comparison between the working of the two systems has not been fairly made. The amount of drunkenness and crime intended to have been shown under the old law, has, for these seven and one-third months, been under the new law, and therefore has been unduly diminished, so far as regards the purposes of this comparison, although the figures are no doubt quite correct as regards the six years which they represent. Still these six years not being for the period ordered by Parliament, without this explanation, erroneous inferences would inevitably be drawn from them. The year 1854 must either be omitted in any correct comparison, or considered as one under the new law, seeing that only four months and two-thirds of it were under the old law, and seven months and one-third under the new law.

For these reasons, it will be apparent to all who carefully consider the question, that the following analysis will more correctly show the real comparative advantages of the new law over the old, than either the comparison made from the six years which were published in the Glasgow newspapers, or the six years which are included in the returns printed by order of the House of Commons. The following figures are taken from Captain Smart's letter to me of 10th April, 1858; the arrangement is my own:—

	Years ending 31st Dec., respectively.	No. of Cases of Drunkenness.
Under the Old Law,	{ 1851	24,019
	{ 1852	23,788
	{ 1853	23,841
Sum of these		71,648
4½ Months under Old Law, and 7½ Months under New,	{ 1854	19,434
	{ 1855	16,266
	{ 1856	17,446
Under the New Law,	{ 1857	20,043
	{ 1858	53,755
Sum of these,		53,755
Decrease under the New Law,		17,893

By this strictly correct view, the decrease has been 17,893 cases out of 71,648; or taking the question of proportion, the number of cases was 33 per cent. greater under the old law than under the new.

But, as already stated, no comparison can be perfectly just which does not give effect to the enormous increase of population during the last six years. Giving effect to this increase, the case may be stated thus:—The population of Glasgow in 1851, was 329,026; and the number of cases of drunkenness arising out of that population was 24,019. The population on

31st December, 1857, according to Dr Strang's official tables, had increased to 391,400. As a question of proportion, the number of cases of drunkenness arising out of this increased population, should have been 28,500, if no change in the law or habits of the people had taken place; but the number of cases during the year ending 31st December, 1857, was only 20,043, showing a proportional decrease of 8,457 cases during that year; or, in other words, the proportion of cases for a given population, was 40 per cent. greater under the old law in 1851, than under the new in 1857.

It has frequently, and very properly, been asked, why the number of cases in Glasgow during 1857 has increased so much as compared with the number in 1856; (not as compared with any year *wholly* under the old law) and to enable me to answer this question correctly, I applied for information to Captain Smart, who, in the letter already referred to, gives the following very satisfactory explanation:—

'The cause of the increase in drunkenness is simply that a most determined opposition was made to the Act in the latter end of 1856, and first half of 1857, and clubs were opened all over the city, and oyster stores and other places were opened for the sale of spirits, and kept open all night, and all Sunday, when the licensed dealers were shut.

'The whole attention of the Magistrates and police was directed to the places, and, after an immense labour and litigation, (some eight or nine cases were suspended,) the law was found too strong for them, and they are now all but extinguished; AND THE CASES FOR THE LAST FOUR MONTHS, WILL, I HAVE NO DOUBT, BE THE LOWEST SINCE THE ACT CAME INTO FORCE.'

But, after admitting the decrease contended for, some parties say 'still the "Public-Houses Act" must be admitted to be a failure, because there remain so many cases of drunkenness which have *not* been prevented, even where it has been most zealously enforced.' To these objectors I would answer in the words of the learned Recorder of Birmingham, Mr M. D. Hill, in his 'suggestions for the repression of crime,' contained in his admirable 'charges delivered to the grand juries of Birmingham.' 'Can any law,' asks Mr Hill, 'be specified which is never broken? What are our courts of justice, our assizes, our sessions, and our police-offices, but so many testimonies that laws are not expected to extinguish offences, but *only to keep down their number* by dealing in the best manner we are able with the offenders. If, then, laws are to be considered as useless because they are not unfrequently broken, our best course will be to put the statutes at large into the fire, turn out the lawyers, and apply Westminster Hall to some new purpose.' Mr Hill

goes on to quote Archbishop Whately in support of his views, thus—'It is evident,' says Archbishop Whately, 'that every instance of the infliction of a punishment is an instance, as far as it goes, of the *failure* of the legislator's design. No axiom in Euclid can be more evident than that the object of the legislator in enacting that murderers should be hanged, and pilferers imprisoned or transported, is not to load the gallows, fill the gaol, and people New Holland, but to prevent the commission of murder and theft; and that, consequently, every man who is hanged, or transported, or confined, is an instance, *pro tanto*, of the inefficiency, *i.e.*, want of complete efficacy of the law.' (p. 405.)

I cannot conclude these observations without referring to the conduct of the Inland Revenue department. In all former times it was considered the special duty of that department of the public service, to discover and prosecute all persons who defrauded the revenue by selling exciseable liquors without payment of the license tax. Until within the last few years, this duty was so perfectly performed, that cases were rarely heard of in which the law was not speedily vindicated, by the prosecution and conviction of the offenders. Of late years, however, this department of the public service has so neglected its duty, in this respect, that literally hundreds of persons in our large towns have been allowed to defraud the revenue with impunity, without the Inland Revenue department appearing to take any interest in the question whether this portion of the public revenue was collected or not. This allegation can easily be proved by the fact that the Magistrates of the large towns have fined hundreds of persons for thus defrauding the public revenue, against whom no complaint was ever made by the Inland Revenue department, or by any one connected with it. This remissness is the more inexcusable, because, under the Public-Houses Act, any officer of excise, or other person, can prosecute without incurring the expense of employing a solicitor or counsel. The general belief amongst persons conversant with these matters in Scotland is, that, as regards offenders of this class, the want of all proper attention to the vindication of the law, and the collection of the revenue which now prevails, has had no parallel in Scotland during the present century.

Having thus dealt with the returns ordered on the motion of Mr Murray Dunlop, it might be expected that I should analyze those ordered on the motion of Lord Melgund; but this has been so ably done in an article by the editor of the *Daily Express*, a paper which devotes much attention to the great social questions of the day, that I have preferred printing his article *verbatim* as an Appendix, to writing any thing of my own.

APPENDIX.

LORD MELGUND'S PUBLICAN STATISTICS.

THE returns moved for by Lord Melgund, acting as Parliamentary agent for the Scottish publicans, are as unfair and worthless as returns could well be. In the first place, they are for the complete years 1851, 1852, 1853, 1854, 1855, and 1856. As the Public-Houses Act did not come into operation until the 15th of May 1854, it is impossible to institute any comparison that can be satisfactory between the years, without excluding 1854. In the next place, 1857 is not included in the return—the reason being, we suppose, that the longer the Act has been in operation, the more markedly beneficial have been the results, and consequently the more unfavourable to the publicans' arguments. The return gives a statement of the number of persons fined for selling spirits without a license, the number of offences of that kind, the amount of fines exacted, and the number of persons imprisoned for such offences in each of the excise collections in Scotland in the years named; and also a similar statement for Edinburgh, Glasgow, Dundee, Greenock, and Paisley. There is also a statement of the amount of fines imposed on licensed victuallers in each of the five towns named in the years from 1851 to 1856 inclusive, and an account of the disposal of said fines; with a statement of the number of persons taken in charge by the police in each year for each of these towns.

We have not space to give the detailed statement of the number of persons convicted for the illicit selling of spirits in each excise collection for the six years embraced in the return; but we give the total offences of the kind in each year, the amount of fines exacted, and the number of persons imprisoned over the whole of Scotland:—

ILICIT SELLING OF SPIRITS—ALL SCOTLAND.

	No. of Offences.	Amount of Fines Paid.	No. of Persons Imprisoned.
1851	174	£637	28
1852	99	359	13
1853	122	387	11
1854	122	685	8
1855	114	696	11
1856	169	1180	7

The publicans no doubt hoped that these returns would enable them to make out a case that would frighten her Majesty's revenue officers, by proving how immensely the offences of selling spirits without a license has increased under the new law. But what are the facts as proved by the above return? Why, simply that such offences in 1851, before the Forbes McKenzie Act was heard of, were more numerous than in 1856, and that four times the number of persons were imprisoned for them! It is abundantly evident, from the above table, and still more from the one that we shall give next, that wherever the number of convictions for illicit selling of spirits has increased, the increase has been entirely due to the increased activity of the excise, and especially of the police. The amount of fines is greater, simply because, under the new law, heavier fines are imposed than was the case under the old. The following table gives the figures for the five chief towns of Scotland, that are given in the previous one for the whole country:—

Appendix.

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ILICIT SELLING OF SPIRITS—FIVE CHIEF TOWNS.

	No. of Offences.	Amount of Fines Paid.	No. of Persons Imprisoned.
1851	55	£235	9
1852	16	88	1
1853	15	67	3
1854	18	71	4
1855	37	229	7
1856	63	614	6

The above figures plainly show that, notwithstanding the praiseworthy activity of the police in Edinburgh and Glasgow (to which any increase observable is entirely due), the offences for illicit selling of spirits were only eight more in 1856 than in 1851, while the number of persons imprisoned was a third less. The publicans' case, therefore, so far as these returns—cooked to suit their purposes—can aid them, has entirely broken down.

The returns of the fines inflicted on publicans; the fines for illicit selling, and number of such offences; and the number of persons taken drunk to the police-office in the five towns for each year, from 1851 to 1856 inclusive, are just as little calculated to help Lord Melgund's friends. We have prepared a table for each town. The following is that for Glasgow.

GLASGOW.

	Amount Paid.	No. of Offences.	Fines on Publicans.	No. of Drunk Persons.
1851	£67	9	£191	24,019
1852	60	4	198	23,788
1853	1	1	193	23,841
1854	0	3	202	19,434
1855	114	14	836	16,266
1856	338	24	625	17,466

In Glasgow the increase of illicit selling is most marked. Yet, after all, what does it amount to? With greatly increased vigilance on the part of the police—which, indeed, will account for all the difference—there were just fifteen cases more in 1856 than in 1851, and eleven more in 1855 than in 1854—nearly half of which was under the Public-Houses Act. Compare this with a diminution of nearly a third in the number of public drunkards—there is actually about that difference between the number of inebriates taken to the police-office in 1851 (24,019) and the number taken in 1856 (17,466)—and what is it? Absolutely nothing. It is not to be weighed against it for a moment. It is true that the publicans have had to pay £625 of fines among them in 1856, and £836 in 1855, as against £191 in 1851. This may be thought a hardship; but the remedy is simple. Let them be honest enough to obey the law, and they will escape the fines as completely as if no fines could be exacted. The table for Edinburgh presents similar results:—

EDINBURGH.

	Amount Paid.	No. of Offences.	Fines on Publicans.	No. of Drunk Persons.
1851	£121	21	£89	9,491
1852	13	7	205	9,767
1853	35	8	141	9,730
1854	14	3	67	8,749
1855	37	9	143	8,095
1856	198	29	82	7,736

In Dundee, the law has evidently not been carried out so efficiently as it ought to have been, as the amount of the fines and the small number of illicit selling cases detected plainly show. Yet the results are undoubtedly favourable to the Act :-

DUNDEE.				
	Illicit Selling. Amount Fines.	No. of Offences.	Fines on Publicans.	No. of Drunk Persons.
1851	£25	19	£11	1,064
1852	12	4	60	1,151
1853	31	6	14	1,238
1854	17	3	91	1,359
1855	30	6	62	952
1856	25	2	26	1,130

Of course, Lord Melgund's returns do not give the Sunday cases of drunkenness. The publicans dare not venture upon that ground; the compulsory Sunday closing, since the entire public are in a manner the police in enforcing that, has the most remarkable results where the law has been loosely enforced by the proper authorities. Thus in Dundee, where the totals of drunken cases for three years before and after the Act (according to Mr Dunlop's returns) were 3666 and 3175 respectively, or about a sixth less in the latter, the total of Sunday cases for the same periods were 314 and 144, showing a decrease of considerably more than one-half.

To Greenock similar remarks, as regards the carrying out of the Act, seem to apply with almost equal force, though the results of the Act are still highly favourable :-

GREENOCK.				
	Illicit Selling. Amount Fines.	No. of Offences.	Fines on Publicans.	No. of Drunk Persons.
1851	£10	4	£0	1,936
1852	2	1	13	2,311
1853	0	0	89	3,556
1854	5	2	116	3,813
1855	48	6	48	2,099
1856	37	5	47	1,580

The Paisley returns are highly favourable, for the law has evidently been enforced :-

PAISLEY.				
	Illicit Selling. Amount Fines.	No. of Offences.	Fines on Publicans.	No. of Drunk Persons.
1851	£10	2	£3	738
1852	0	0	3	760
1853	0	0	3	845
1854	34	7	17	786
1855	0	1	22	477
1856	15	3	16	515

The production of the return of which we have thus stated and analysed the results, has been a most unfortunate affair for the publicans. Notwithstanding the scheming of these philanthropists to obtain a Parliamentary document which should prove, by partial figures and unfair arrangement, the sufferings of themselves, the revenue, and the public through the obnoxious Public-Houses Act, they have egregiously failed. They have made out no case that can alarm the revenue officials. As regards themselves, they have merely proved what had subjects they are, and how little they regard the law. While as respects the public, they have proved incontrovertibly—partial and tricky as the figures of their model return are—that an immense social benefit has been conferred upon Scotland by the Act against which they interestedly and wickedly declaim. We strongly counsel the publicans to eschew Parliamentary returns henceforth. The good results of the Public-Houses Act are not to be concealed or perverted into evil by any return, no matter how much cunning or how little principle may be visible in its construction.

R. AND T. DUNN, PRINTERS, GLASGOW.

TESTIMONIES & STATISTICS

IN REFERENCE TO

THE WORKING OF THE

PUBLIC-HOUSES ACT,

MAGISTRATES, SUPERINTENDENTS OF POLICE CLERGYMEN CITY MISSION-
ARIES, EMPLOYERS OF LABOUR, ETC. ETC.

GLASGOW:

OFFICE OF THE SCOTTISH TEMPERANCE LEAGUE,
108 HOPE STREET.

1857.

PREFACE.

THE Act, 16 Vict., cap. 67, commonly known as the Public-Houses, or Forbes McKenzie's Act, obtained the Royal assent on the 15th of August, 1853. The clauses, limiting the hours during which drink could be sold, and specially forbidding Sunday sale, came into operation at Whitsunday, 1854. The clauses separating the sale for consumption on the premises, from the business of the grocer, did not take effect until Whitsunday, 1855. Immediately after the cessation of the Sunday sale, an outcry was raised, by a number of those engaged in the traffic, against the Act. These parties alleged that, whilst its provisions entailed considerable hardship upon the sober portion of the community, they did not attain the purpose contemplated of improving the habits of the others; 'Since, under the Act, there was,' they said, 'as much drinking as formerly, only that drinking was transferred from the public-house to the shebeen and private dwelling.'

In consequence of the continued assertion of the failure of the Act to secure the objects contemplated, the Members of the Scottish Temperance League, at their Annual Meeting in May, 1855, instructed the Directors of that Association to collect from official and other parties such information as might show the actual working of the Act. The Statistics and Testimonies obtained were submitted to a Conference held at Edinburgh, 9th October, 1855, and were afterwards published and extensively circulated. Although these Statistics and Testimonies were obtained in reply to a circular requesting reliable evidence, *whether favourable or unfavourable to the Act*, there were no Statistics forwarded unfavour-

able, and only a very few *opinions* which could be so characterised. The returns from our large cities and towns all declared a most marked improvement in consequence of the Sunday clauses; and where, in certain rural districts, the change was not so marked, the explanation was at hand in the fact, that, from want of a public prosecutor, there had not been the same energetic enforcement of the Act by the authorities. So far, then, as at that time the Act had been operative at all, its operation was most satisfactory, and the allegations of its enemies were seen to be without foundation.

During the two years which have elapsed since the first series of Statistics and Testimonies was issued, the Licensed Victuallers' Association have been busy with attempts to influence the Members of Parliament against the Act, and have, as before, shown themselves ready to misrepresent the facts of the case—their great cry still being, that the Act has only driven the drinking from the street into the private dwelling, and, depriving the licensed dealer of his former gains, has transferred them to the keeper of the shebeen or brothel. In order to meet such misrepresentations, it was necessary that a second series of Statistics and Testimonies, having reference to the intervening biennium, should be procured and published. In reply to a circular, requesting, as the former one did, reliable information, whether favourable or unfavourable,* the Testimonies and Statistics now published have been received. These consist of returns and letters from magistrates and city officials, superintendents of police, chaplains and governors of, and officers in prisons, clergymen of various denominations, city missionaries, sabbath school teachers, employers of labour, and

* It may be as well to state that the Testimonies and Statistics have been printed verbatim as received. The following is a copy of the circular note in reply to which the Testimonies were received:—

SCOTTISH TEMPERANCE LEAGUE OFFICE, 108 HOPE STREET, GLASGOW.

SIR,—The Directors of the Scottish Temperance League desire me to request that you will favour them with your opinion as to the general effects of the new Public-Houses Act upon the habits of the people; also a statement of any facts bearing thereon, which may have come under your notice in connection with your office.

The wish of the Directors is to obtain reliable evidence on this subject, whether it prove favourable or otherwise to the Act.—I am, Sir, your most obedient servant,

JOHN S. MARR, Secretary.

merchants, and, with a very few exceptions, are entirely favourable. It is still, however, a matter of regret that there are some towns and rural districts where offences against the Act have not been punished, and where, consequently, it has to a greater or less degree become a dead letter; but this is not the case in our large towns, or in those districts where, from the spread of temperance principles, there is a public opinion favourable to the provisions of the Act; and the returns from such give most unmistakable evidence that its operation upon intemperance and the crimes connected with that vice, continues to be most beneficial,—so that the results may be expressed with entire correctness in the words of the 'Prefatory Note' to the First Series:—

'1. That, coincident with the operation of the Public-Houses Act, there has been, as compared with the period immediately preceding, a sensible diminution in those crimes which are directly traceable to the use of strong drinks, as well as in the number of cases of parties taken to the police-office in a state of helpless intoxication. 2. That that diminution in crime and police cases of helpless intoxication has proceeded in very regular proportion, according to the stringency with which the Act has been enforced—the want of uniformity in the enforcement of the Act, thus furnishing, rather unexpectedly, but very opportunely, a complete reply to such as seek the explanation in the number of police cases and prison commitments, however gratifying, is not the only or the main good traceable to the Act. On the contrary, that the classes quite removed from crime (so called) have been, proportionally, much more benefited than the lower or criminal grades; since, with the former, evasion is at once difficult and disreputable, whilst with the latter, it is not only comparatively easy, but is even a point of honour to cheat the police. 4. That there is not the slightest ground for the assertion that, under the Act, and as a consequence of it, private drinking during the forbidden hours in unlicensed houses has increased.* That the relative proportion of public and private drinking has been very much changed does not admit of doubt, but that the latter has been increased has not appeared. That it prevailed formerly to a lamentable extent, was proved by the startling figures of the Edinburgh and Leith Sabbath Statistics several years ago; and the evidence now published justifies the assertion that private drinking is now only more marked, because public sale, and therefore public drinking, have been rendered during these hours illegal and difficult. 5. That so great and so clearly marked have been the good results of the operation of the Act, that the whole community (if we except a portion of the spirit trade, the opponents of the Sabbath, and a few other agitators) are prepared to express, and do express their approval of it, and only lament that its provisions are not more stringent, or that there is no party held bound to see to its impartial and thorough enforcement.'

* See, on this point, the valuable testimony, on page 11, of James Smart, Esq., Superintendent of Police for Glasgow.

TESTIMONIES AND STATISTICS.

MAGISTERIAL, POLICE, AND PRISON.

No. I.—EDINBURGH.

Report by THOMAS LINTON, Esq., Superintendent of Police.

Tables 1, 2, 3, and 4 show that the very large decrease in cases of Drunkenness on Sundays, and the smaller, but still considerable, decrease in the cases on Week-days, which took effect whenever the 'Act for the better regulation of Public Houses in Scotland' came into operation in May, 1854, has continued up to the present date, and that the improvement has been to some extent progressive.

The cases on Sundays have diminished from 1805 in 1853, to 769 in 1856; and the cases on Week-days and Sundays have diminished from 9739 in 1853, to 7736 in 1856. It will be observed that the decrease is greatest in the cases of Persons Drunk when apprehended for Crimes or Offences; and No. 1., Tables 2 and 3, show a corresponding decrease in the number of Persons who committed Crimes or Offences, and especially the Offences, such as Assault and Breach of the Peace, which are more directly the effects of Drunkenness.

CASES OF DRUNKENNESS.

Number of Persons found Drunk in the Streets, and kept in the Police Office and Station-Houses till they were Sober, and Number who were Drunk when apprehended for Crimes and Offences.

1. Total Number taken charge of by the Police.

	MALES.				FEMALES.				BOTH SEXES.			
	1852	1853	1854	1855	1852	1853	1854	1855	1852	1853	1854	1855
Found Drunk, and kept till Sober, . . .	2968	2400	3126	2293	2847	2464	2867	2021	5732	4864	5993	4314
Drunk when Apprehended, . . .	1774	1014	1362	1109	121	1031	1369	774	2805	1145	2167	1883
Total, . . .	4742	3414	4488	3402	2978	3495	4236	2795	7537	5999	8160	6197

2. Number on Sundays.

	MALES.					FEMALES.					BOTH SEXES.				
	1852	1853	1854	1855	1856	1852	1853	1854	1855	1856	1852	1853	1854	1855	1856
Found Drunk, and kept till sober.	431	427	283	234	275	238	214	172	155	161	729	641	455	389	436
Drunk when Apprehended.	263	284	269	194	165	500	580	103	185	168	423	664	433	379	333
Total.	694	711	552	428	440	738	794	275	340	329	1152	1305	888	768	769

3. Number on Saturdays, Sundays, and Mondays.

	1852	1853	1854	1855	1856
Saturdays.	1523	1879	1633	1743	1744
Sundays.	1202	1210	878	708	719
Mondays.	1150	1136	1154	1028	852
Total.	4154	4225	3665	3479	3315

4. Number between Eight o'clock on the Sunday Mornings and Eight o'clock on the Monday mornings.

	1852	1853	1854	1855	1856
Found Drunk, and kept till sober.	401	333	176	82	119
Drunk when Apprehended.	378	315	165	61	66
Total.	779	648	341	143	185

This Table shows that forty out of every 100 Persons apprehended for Crimes or Offences were drunk when they committed them. The large proportion of criminality thus shown to be directly associated with Drunkenness affords some indication of the amount of Crime of which Drunkenness is, directly or indirectly, the probable cause.

Number and Per Centage of Persons apprehended for Crimes or Offences, who were Drunk when they committed them.

	MALES.					FEMALES.					BOTH SEXES.				
	1852	1853	1854	1855	1856	1852	1853	1854	1855	1856	1852	1853	1854	1855	1856
Apprehended.	4854	4920	3692	3448	3240	4456	4912	4076	3711	2715	9310	9832	7768	7159	5955
Drunk when Apprehended.	1714	2014	1602	1526	1374	1526	1580	1764	1491	1295	3440	4593	3356	3081	2596
Per-centage Drunk.	35	41	43	44	42	34	32	43	40	47	37	47	43	43	43

Table 1 shows that, since May 1854, the Certificates for Public-Houses have been reduced from 511 to 353.

Table 2 shows that, while there has been a considerable diminution in the number of Reports and Convictions against Persons holding Certificates, both on Week-days and Sundays, there has been a slight increase last year in the number of Convictions obtained against Persons without Certificates selling Spirits on Sundays.

Number of Certificates granted under the 'Act for the Better Regulation of Public-Houses in Scotland,' since it came into force at Whitsunday, 1854;—Also, Number of Persons holding Certificates, and Number without Certificates, Reported, and Number of each kind convicted for Offences against that Act, distinguishing the Offences committed on Sundays.

1. Number of Certificates Granted.

	1854.	1855.	1856.
Inns or Hotels.	47	47	53
Public-Houses.	511	414	353
Spirit-Dealers or Grocers.	206	318	351
Total.	864	879	757

2. Number of Persons Reported, and Number Convicted.

		WEEK-DAYS.			SUNDAYS.			TOTALS.		
		1854	1855	1856	1854	1855	1856	1854	1855	1856
Inns or Hotel Keepers.	Reported	2	2	2	2	2	2	4	4	4
	Convicted	2	2	1	4	3	4	2
Public-House Keepers.	Reported	60	45	18	23	23	23	83	79	41
	Convicted	34	23	11	14	23	14	48	56	25
Grocers or Spirit-Dealers.	Reported	12	37	17	5	8	6	17	45	23
	Convicted	7	28	9	3	6	4	10	34	13
Total Number holding Certificates.	Reported	74	83	37	30	45	31	104	129	68
	Convicted	43	61	22	18	23	18	61	94	40
Persons selling Spirits without having obtained Certificates.	Reported	23	26	16	49	55	56	122	81	71
	Convicted	19	13	7	39	29	29	58	42	46
Total.	Reported	107	109	53	119	101	87	226	210	139
	Convicted	62	74	29	57	63	57	119	137	86

THOS. LINTON,

Superintendent of Police.

Police Office, Edinburgh, March 23, 1857.

PRISON OF EDINBURGH.

RETURN showing the Total Number of Commitments to the Prison of Edinburgh, during each Month, since 1st January, 1847.

MONTHS.	YEARS.											
	1847	1848	1849	1850	1851	1852	1853	Monthly Average of 7 Years.				
	Prison.	Police Cells.	Prison.	Police Cells.	Prison.	Police Cells.	Prison.	Prison.	Police Cells.	Prison.	Police Cells.	Prison.
January,	314	591	498	515	422	434	434	401	...	371	74	379
February,	314	591	498	515	422	434	434	401	...	371	74	379
March,	314	591	498	515	422	434	434	401	...	371	74	379
April,	314	591	498	515	422	434	434	401	...	371	74	379
May,	314	591	498	515	422	434	434	401	...	371	74	379
June,	314	591	498	515	422	434	434	401	...	371	74	379
July,	314	591	498	515	422	434	434	401	...	371	74	379
August,	314	591	498	515	422	434	434	401	...	371	74	379
September,	314	591	498	515	422	434	434	401	...	371	74	379
October,	314	591	498	515	422	434	434	401	...	371	74	379
November,	314	591	498	515	422	434	434	401	...	371	74	379
December,	314	591	498	515	422	434	434	401	...	371	74	379
Yearly Average,	379	448	453	413	609	505	489	447	440	413	413	413

* The Act for regulating Public Houses took effect on 21st May, 1854.

PRISON OF EDINBURGH.

RETURN showing the Daily Average Number of Prisoners in the Prison of Edinburgh, during each Month, since 1st January, 1847.

MONTHS.	YEARS.											
	1847	1848	1849	1850	1851	1852	1853	Monthly Average of 7 Years.				
	Prison.	Police Cells.	Prison.	Police Cells.	Prison.	Police Cells.	Prison.	Prison.	Police Cells.	Prison.	Police Cells.	Prison.
January,	372	513	628	594	561	483	399	430	...	404	2	378
February,	411	503	665	533	629	578	622	566	507	...	355	7
March,	475	520	708	593	577	656	632	689	594	...	336	4
April,	435	532	708	593	577	656	632	689	594	...	336	4
May,	435	532	708	593	577	656	632	689	594	...	336	4
June,	435	532	708	593	577	656	632	689	594	...	336	4
July,	435	532	708	593	577	656	632	689	594	...	336	4
August,	435	532	708	593	577	656	632	689	594	...	336	4
September,	435	532	708	593	577	656	632	689	594	...	336	4
October,	435	532	708	593	577	656	632	689	594	...	336	4
November,	435	532	708	593	577	656	632	689	594	...	336	4
December,	435	532	708	593	577	656	632	689	594	...	336	4
Yearly Average,	477	585	639	582	625	619	581	676	440	378	355	355

PRISON OF EDINBURGH, June 1st, 1857.

J. SMITH, Governor.

From Rev. JOHN M. ROSS, Junior Chaplain, Edinburgh Prison.

Prison of Edinburgh, 15th June, 1857.

Sir,—In answer to your inquiry regarding the working of the New Public-House Act, I can most candidly say, that I am aware of no measure of recent enactment which has been productive of such a vast amount of good. The enclosed copy of the prison returns affords a most unanswerable argument in favour of this Bill. (See pages 8 & 9.)

If, for example, you take the daily average extending over the two years, 1852 and 1853, prior to the time when the Bill came into operation, which was respectively, as shown in the returns, 619 and 631—average, 575; and the average of the two complete years after it was in full operation, viz., 1855 and 1856, which was respectively 378 and 355—average, 366½; you will thus see that the average extending over that period is no less than 208 of a daily decrease. Such a result as this is of itself sufficiently conclusive.

But great as this decrease is, it is abundantly plain, from the many cases brought up to the police court for contravention of this Act, and from the many contraventions of it of which I hear from prisoners and others, not detected, that the decrease might have been greater still, had the Act been by all faithfully obeyed. This is no argument against the Act, but greatly in its favour; and should lead, not to the annulling of it, but to a more strict and determined enforcement of it by the proper authorities.

As regards the feeling of prisoners relative to the shutting of public-houses on the Lord's day, I can most conscientiously say, that although I have had constant intercourse with the vast tide of prisoners who have passed through the prison of Edinburgh since this Act took effect, I have not met with any, except a few of those engaged in the liquor traffic, who seem to regard the shutting of public-houses on Sabbath as a grievance. They almost universally speak of it as a great boon, that there is one day of the seven on which they can't obtain ardent spirits; nor have I heard any say but that he would be thankful if the same boon were extending over the entire seven.

If the shutting of the public-houses 1-7th part of the week has been instrumental in reducing, by 1-3d, the number of prisoners; to what would they be reduced if public-houses were shut 7-7ths of the week?—I am, Sir, yours very faithfully,

JOHN MILLER ROSS,
Jun. Chaplain, Prison of Edinburgh.

No. II.—GLASGOW.

Report by JAMES SMART, Esq., Superintendent of Police, on the Working of the New Act for the Better Regulation of Public Houses in Glasgow—September, 1855.

In complying with the order to make up the subjoined Returns, it may not be considered out of place to give a short history of the working of the Public House System in Glasgow for a few years back, to enable the Magistrates to make a comparison between the working of the Old and New Acts.

In the first year after the passing of the Municipal Act the Magistrates

granted about 2200 Certificates to Keepers of Public Houses, many of the houses being very small rented, and the keepers of them very ill qualified; for hundreds of them opened at the same hour on Sundays as on week mornings, and kept open till the last toll of the bell for Divine Service, at 11 forenoon, when the customers were turned out to the street, many of them in a state of intoxication, and this while the people were passing to church! They again opened between 1 and 2 o'clock, and then from 4 to 12 at night their doors were kept standing open, and the publican was seen with coat off, behind his counter, and his customers going out and in as publicly as on other evenings.

From the then state of the Law as to shutting their houses, every occasion was taken advantage of to keep open all night. A raffle, a wedding, or a dance, was sufficient to keep a whole neighbourhood from sleeping the greater part of the morning; and during the Fair Week, and New-Year Week, many of them did not shut from Monday morning till next Sunday morning, and when so shut they had small openings in the doors for the purpose of handing out spirits; and every week morning some of them opened shop at half-past 4, and kept open till half-past 12 next morning. From the loose way in which the business was carried on, the streets of the lower part of the City were kept in a state of turmoil and disorder all Sunday morning, and frequently the entire day. Grievous complaints were made to the Magistrates of this state of matters, by church-going people, and by parties who had the misfortune to live near these shops. The Magistrates were so satisfied that these complaints were well founded that, for several years before 1853, they granted certificates to all publicans on the express condition that no business was to be done on Sundays, and that all houses were to be shut by 11 at night, and not opened before 6 morning. The Police were instructed to visit, and actually for several years visited, all Public Houses found open on Sundays, counted the number of persons found therein, entered them in a journal, and submitted this book to the Magistrates before each Licensing Court. A notice was printed at foot of the usual certificate issued to each publican. The following is that for 1850:—

'Notice, the Magistrates have unanimously Resolved—

'I. That as the number of Public Houses of an inferior class is excessive, and productive of evil, it is expedient that the number of certificates to be granted by the Magistrates be materially reduced.

'II. That, with that view, the applications of all parties who have been convicted of an infringement of the terms of their certificate, and also the applications of all parties who have notoriously disregarded the conditions on which they received certificates, as intimated in the note thereby subjoined, although they may not have been convicted under the statute, be refused.

'III. That, except in particular cases, all new applications be refused.

'IV. That all certificates shall be granted on the express condition that the parties receiving them shall not open their premises nor sell exciseable liquors at any time of the Sabbath, except in the case of Inns or Hotels, for the accommodation of travellers, and, with this exception, shall not open the same on other days before 6 morning, nor have the same open after 11 o'clock at night.

'V. That no License shall be granted to any person who intends, in addition to exciseable liquors, to sell groceries, and other uncooked provisions, in the same premises, unless in special circumstances.

'VI. That, at future terms for granting certificates, the applications of all persons who have contravened any of the above regulations shall be refused, and that for the purpose of effectually checking such applications, the Superintendent of Police be instructed to ascertain and report all

Publicans who shall be found conducting their business contrary to these Resolutions, or in any manner inconsistent with good order or decorum.'

These Resolutions give a pretty good idea of the necessity that was felt to exist for an amendment and extension of the powers of the Act 9, Geo. IV., commonly called House Drunkenness's Act, before the recent Act 16 and 17 Victoria became law, on 15th August, 1853.

The Act passed in 1848, for Regulating the sale of Beer and other Liquors on the Lord's Day, by which all Public Houses were kept shut till after the forenoon service, no doubt effected a great improvement on the morning and forenoon of Sabbaths, but the evil still continued on the afternoons, the Magistrates having then no power to stop it.

The New Act came into partial operation in October, 1853, and at Whitsunday, 1854, the whole trade were licensed under it, and the separation of the certificates, into those for Hotel Keepers, Publicans, and Dealers; but it was not till Whitsunday, 1855, that the trades of Grocer and Publican were separated. The whole Act has therefore been in operation only since last Whitsunday. It is to be regretted that this Act, which is very stringent on some points, and has regulated the business of Hotel Keepers, who, if properly selected by the Licensing Magistrates, might very well be allowed to regulate themselves, has left untouched the greatest evils of the licensing system—viz., Music and Dancing Saloons, Billiard Rooms, &c. There are a great number of these places in Glasgow, some (very few of them) conducted with great regularity and decency; but the major part of them are ill conducted, and ought to be suppressed. In England the keepers of these places hold separate licenses for Music, Dancing, and Billiards, and the Magistrates have power to make rules and regulations for their guidance, and also to suppress them if ill conducted;—while in Scotland the Magistrates have no such power, and the result is, that a Publican obtains his certificate for the sale of Spirits, Ales, &c., and, without scruple, turns it into a Dancing or Music Saloon, at his own convenience. Should this Act come to be revised it would be desirable to obtain further powers over these places.

UNLICENSED DEALERS IN SPIRITS.

An increase has taken place in the number of convictions under this Class; but the old law was defective, and very many of the parties fined under the new Act carried on business under the old Act for years with impunity—for instance, Currie, McCabe, Davies, Grange, and a number of other well-known unlicensed dealers.

The New Act has produced a degree of quiet and order on our streets on week mornings, and in particular on Sabbath days, which must be apparent to all the citizens. I subjoin a List of the Reports, Convictions, &c., and Disposal of the Fines, as ordered, which are distributed by the Magistrates annually, in the month of October, to the various Charities in Glasgow.

I have to remark that the working of the Licensing Acts form no part of the duty of the Police, although imposed on them for the preservation of the peace and good order of the City. It is felt to be a disagreeable duty, of which the Police would gladly be relieved; and if it was taken up by others who had a personal interest in the prosecution for, and recovery of, penalties, it would perhaps be found that those who now complain of the enforcement of the law, would have a little more cause to do so. The one-half of the fines for contraventions, &c., would be quite sufficient to remunerate qualified persons for the special duty of attending to the Regulation of Public Houses.

In conclusion, I have to report that all the duty connected with the Public House Acts is performed by the Procurator-Fiscal, Superintendent, Assistants, and other Officers of Police, without fee or reward.

JAMES SMART, S.P.

The Hon. the Lord Provost, Magistrates, and Police Committee, of the City of Glasgow.

Report by JAMES SMART Esq., Superintendent of Police, on the Working of the Act for the Better Regulation of Public Houses in Glasgow.—Second Report, 1856.

To the Hon. the Lord Provost, Magistrates, and other Members of the Police Committee, of the City of Glasgow.

MY LORD AND GENTLEMEN.—It is now my duty to present to you my Second Report on this important subject; and in doing so it is gratifying to be able to announce, in the outset, that the results I have to communicate are in many respects hopeful and encouraging.

There has been a considerable reduction in the number of Licenses granted at Whitsunday and Martinmas, 1856, as compared with the number granted at the immediately previous corresponding terms—the total being 1773, while in 1855 there were upwards of 2000. Those who have given up the business, or lost their Licenses, were, principally, occupiers of the smaller rented houses, of which, I regret to say, there are yet too many.

It will be observed that 58 persons who were refused Licenses by the Magistrates, obtained them on appeal to the Justices. It would be desirable that the Magistrates, in future, should attend the Appeal Court and support their own decisions; and, also, that steps were taken to obtain for the Magistrates the exclusive power of Licensing Publicans within the City, they being responsible for the peace and good order thereof.

If the provisions of the Act are to be carried out effectively, it is also desirable that Licenses should not be granted to small-rented Public Houses, where the occupiers reside in them, as it is very difficult for such parties to resist the temptation of selling or giving out liquors at prohibited times, and no easy task to keep them in check.

It is satisfactory to have occasion to report that although Contraventions by Licensed Dealers have increased by four this year, yet the offences are of a less serious nature—the amount of penalties imposed being only £777, against £1042 15s. for the previous year. But of the number fined, sixteen of the charges were against Hotel keepers, which shews the necessity of greater caution in granting these Licenses, as the holders are, to a considerable extent, beyond the control of the Police.

UNLICENSED DEALERS.

There has been an increase in the number of these cases—the convictions being 164 against 126 last year; and the penalties imposed £957, 15s. against £911.

It is worthy of remark that 22 of these cases were directed against Licensed Victuallers for selling liquor in their private houses; and six convictions have been obtained against the keepers of 'Shebeen Clubs'—a class of houses that open when the Licensed houses shut, and are kept open generally till four or five o'clock in the morning, and during the whole of Sunday.

These houses have not had the attention bestowed on them that their

importance demands, and, in fairness to the Licensed Dealer, no pains should be spared to suppress them. The Magistrates would require to give special instructions in regard to them.

In fairness also to the Licensed Dealer, Music and Dancing Saloons, Billiard Rooms, &c., should be Licensed, and put under regulation, as in England; and Oyster Stores, Fish Shops, &c., should be compelled to shut at seasonable hours.

The increase of convictions against Unlicensed parties proves that the powers of the new Act are more effective than the old, and not that these dealers were not in existence before it became law. It is a notorious fact that nearly every brothel in Glasgow, for twenty years back, has sold, and still sells wines and spirits. It is also well known that Oyster Stores, low Lodging Houses, low Eating Houses &c., sell Liquor without reserve, and many of them have been convicted since the new Law came into operation, who, under the old, were allowed to do so with impunity.

Numerous as the Convictions now are for Illicit Selling, they are small when compared with former times in Glasgow, if Dr CLELLAND's account be correct. He says, that in the year ending the 5th July, 1816, 550 persons were prosecuted in Glasgow for selling without Licenses and for Illicit Distillation, and the penalties awarded against them amounted to upwards of £8000.

While working this Act, which is considered very stringent, my attention has been called to the Act, 24th Geo. II., cap. 40, commonly called "The Tippling Act"—an Act which appears to me to be the ground-work of the present, but far superior in many points—amongst others, for putting down Illicit Selling, by making the third offence seven years' transportation; and it strikes at the root of the evil by imposing a severe penalty on any Distiller, or Licensed Dealer, who shall sell, or deliver, or cause to be sold, or delivered, any quantity of Distilled Spirituous Liquors to any person, to the end that the same may be lawfully retailed, or to any unlicensed retailer of spirituous liquors.

As this Law is not repealed, were the Magistrates to order a few prosecutions under its provisions, the proper parties would be got at, and the unlicensed traffic would be put down, or at least kept within much smaller bounds.

The same improvement in respect to order and decorum on our streets on the Sabbath day, mentioned in my first report, still continues, and on Saturday nights, by 12 o'clock, peace and good order are obtained, instead of, as formerly, a state of turmoil and disorder the whole of Sabbath morning. In no place is the difference more observable than in the Police Offices, particularly in the Central Office, where Sunday used to be a busy day, but it is now perfectly quiet, and it is not unusual for a whole Sabbath to pass without a single case of any kind being brought in. The Lieutenants are now at liberty to go to church, one Clerk taking charge of both the Detective and the Lieutenants' Departments,—and the Turnkeys have now little else to do on Sunday than read their Bibles.

In 1849, when the first restriction was put on Public Houses by the Beer Act, there were somewhere about 2200 Public Houses in Glasgow, and the number of persons brought before the Magistrates, on criminal charges, was 5029, while in 1856, with 1773 Public Houses, there were only 3427. Again, in the same year, 1848-9 the average number of prisoners in the Prisons of Glasgow was 717, while in 1856 the average had fallen to 482, and the drunk and disorderly, drunk and incapable, brawls, and disorderly cases of all kinds, disposed of by the Magistrates, and by the Lieutenants of Police, have decreased to a very large extent indeed.

But it is difficult to say how much of the decrease in crimes, drunkenness, and disorder, is due to the working of this Act, as other circumstances have been in operation, which, without it, would have had a tendency to reduce the number of Public Houses, and with that the consumption of Spirits, and the number of Police cases, as a matter of course. But I have no doubt that to the new Public House Act we are wholly indebted for our comparatively quiet and orderly Sabbaths.

I have again to impress on the Magistrates the propriety of appointing other parties than the Police to work some parts of this Act, as much of the necessary work connected with the Unlicensed cases is highly unsuitable for Police Officers. In regard to the more important and peculiar cases of this class, the duty is more suitable for the Officers of Inland Revenue, who have already taken up a number of them.

Serious complaints have been made by gentlemen connected with the Press, who require to be out of bed every publishing night, that they are denied necessary refreshment in respectable Licensed houses, and are driven to seek it in Unlicensed places; and parties who require to assist in extinguishing fires, or in removing goods from places on fire, or on other extraordinary occasions, when employed all night, or on Sunday, complain of the same hardship. But I do not see that it is necessary to repeal any part of the Act to meet such cases, as the Magistrates have only to direct the Public Prosecutor not to take up cases against parties supplying refreshments under such circumstances, but to allow any one who may feel aggrieved to prosecute themselves. In short, the Magistrates may instruct their Officers to use the same discretion in regard to this Act that they do in executing the Police and all other Acts which they are in the habit of enforcing.

I subjoin a few tables showing the Number of Licenses Granted, Comparative State of Crime, State of the Prison, Penalties imposed on Licensed and Unlicensed Dealers, disposal of the Fines imposed on Publicans, &c., &c.

JAMES SMART,
Superintendent of Police.

Number and Classification of Publicans' Certificates granted by the Magistrates of the City of Glasgow, at the Whitsunday and Martinmas Licensing Terms, during the Years 1853, 1854, 1855, and 1856.

Whitsunday, 1853.—Public Houses, 1994. Martinmas, 1853.—Inns and Hotels, 3; Public Houses, 56; Total, 2053.

Whitsunday, 1854.—Inns and Hotels, 47; Public Houses, 1934; Dealers, 10; Total, 1991. Martinmas, 1854.—Inns and Hotels, 3; Public Houses, 13; Dealers, 4; Total, 2011.

Whitsunday, 1855.—Inns and Hotels, 62; Public Houses, 1633; Dealers, 179; Total, 1864. Martinmas, 1855.—Public Houses, 17; Dealers, 6; Total, 1887.

Whitsunday, 1856.—Granted by Magistrates—Inns and Hotels, 44; Public Houses, 1473; Dealers, 180. Granted by Justices—Inns and Hotels, 2; Public Houses, 45; Dealers, 1; Total, 1745. Martinmas, 1856.—Granted by Magistrates—Public Houses, 17; Dealers, 3. Granted by Justices—Public Houses, 8; Total, 28; Grand Total, 1773.

Number of Persons Convicted of Contravention of the Terms of their License Certificates, in the Years as under.—1853, 80; 1854, 95; 1855, 366; 1856, 370.

Number of Licensed Dealers respectively Charged with a First, Second, and Third Offence, during the Year 1856.—1st Offence, 262; 2d Offence, 94; 3d Offence, 14.

NOTE.—Of the above Number in 1856, there were of Hotel Keepers, 16 Publicans, 945; and Dealers, 11. Total 976.

Number of Persons Convicted of Selling Excisable Liquors without Certificates, in the Years as under.—1853, 21; 1854, 33; 1855, 126; 1856, 164.

The Number of Unlicensed Dealers, respectively charged with a First, Second, and Third Offence, during the Years as under.—1853—1st, 16; 2d, 5. 1854—1st, 18; 2d, 15. 1855—1st, 106; 2d, 15; 3d, 5. 1856—1st, 137; 2d, 22; 3d, 6.

NOTE.—Of the above Number in 1856, there were of Club-Keepers, 6; Pub-house, selling in Private Houses, 22; and other kinds of Shopkeepers, 136. Total, 164.

CONTRAVENTION OF LICENSE CERTIFICATES.

Amount of Penalties Imposed during the Years as under.—1853, £114, 8s; 1854, £207, 1s; 1855, £1042, 15s; 1856, £777.

Amount of Penalties Recovered during the Years as under.—1853, £103, 8s; 1854, £167, 14s; 1855, £836, 8s; 1856, £625, 15s 6d.

Amount of Penalties Un-recovered during the Years as under.—1853, £11; 1854, £39, 7s; 1855, £206, 7s; 1856, £151, 4s 6d.

SELLING WITHOUT LICENSE CERTIFICATES.

Amount of Penalties Imposed during the Years as under.—1853, £81; 1854, £161, 15s; 1855, £911; 1856, £257, 15s.

Amount of Penalties Recovered during the Years as under.—1853, £22, 10s; 1854, £76; 1855, £298; 1856, £293, 15s 4d.

Amount of Penalties Un-recovered during the Years as under.—1853, £58, 10s; 1854, £75, 15s; 1855, £613; 1856, £663, 19s 8d.

Grand Total of Penalties Imposed during the Years as under.—1853, £303, 9s 6d; 1854, £328, 14s 6d; 1855, £1953, 15s; 1856, £1734, 15s.

Grand Total of Penalties Recovered during the Years as under.—1853, £215, 18s 6d; 1854, £278, 2s 6d; 1855, £1134, 8s; 1856, £919, 10s 10d.

Grand Total of Penalties Un-recovered during the Years as under.—1853, £287, 11s; 1854, £118, 12s; 1855, £819, 7s; 1856, £813, 4s 2d.

Scale of Rental of Premises for which License Certificates were granted in the Year 1853.

	Central.	Western.	Eastern.	Southern.	Northern.	Total.
Under £10	No.	No.	No.	No.	No.	No.
£10 and under 15	69	17	114	16	0	207
15 and under 20	71	23	79	23	1	198
20 and under 30	380	124	192	189	4	889
30 and under 40	162	46	21	38	4	271
40 and under 50	127	35	7	16	0	185
50 and under 60	61	8	4	15	1	92
60 and under 70	45	3	0	5	0	54
70 and under 80	32	1	0	5	0	38
80 and under 90	23	1	0	0	0	24
90 and under 100	17	2	0	1	0	20
100 and under 150	6	2	0	0	0	8
150 and under 200	44	3	0	1	0	48
200 and under 300	16	0	0	1	0	17
300 and under 400	15	0	0	0	0	15
400 and under 500	8	0	0	0	0	8
500 and under 600	1	0	0	0	0	1
600 and under 700	1	0	0	0	0	1
700 and under 1500	1	0	0	0	0	1
	1069	265	403	301	19	2053

Number of Persons brought before the Magistrates in the Police Courts, Glasgow, during the Years 1849, 1853, and 1856, Charged with Crimes.

	1849.			1853.			1856.		
	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.
Offences against the Person,.....	279	242	37	837	650	187	51	39	12
Offences against Property, committed with violence,.....	261	209	52	131	105	25	27	23	4
Offences against Property, committed without violence,.....	4232	2596	1642	4006	2196	1804	3191	1706	1485
Miscellaneous offences against Property,.....	200	123	77	104	81	19	108	101	4
Offences against the Currency,.....	48	26	22	56	20	30	50	29	30
	5020	3196	1823	5118	3053	2065	3427	1892	1535

Average daily Number of Criminal Prisoners Confined in the Prison of Glasgow, for the year ending 30th June, 1850, and for the Year 1856.

	Total.	Males.	Females.
1850,.....	717	418	299
1856,.....	482	273	209
Decrease,.....	235	145	90

Number of Persons brought before the Magistrates, in the City of Glasgow Police Courts, charged with being 'Drunk and Disorderly,' and 'Drunk and Incapable,' during the Years 1849, 1853, and 1856.

	1849.			1853.			1856.		
	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.
Drunk and Disorderly,.....	8370	5829	1547	6086	3750	1236	2820	2328	497
Drunk and Incapable,.....	11888	1688	200	2673	3415	253	3800	3618	182
	10,258	8511	1747	10,659	9165	1494	6620	5946	679

* The apparent increase of this class of cases is caused by petty assaults and brawls on the street being improperly put under the head of 'Offences against the person,' instead of being classified under the head 'Drunk and Disorderly,' or 'Disorderly,' as they are in the returns for the other years.

† During this year, 1849, on account of Cholera, the Magistrates directed that all parties brought in 'Drunk and Incapable,' who could not find bail or pledge, should be liberated on their becoming sober. These returns do not include those discharged by Lieutenants, and do not give a correct view of individual crime or drunkenness, as the same person may be twenty times committed during the year.

No. III.—ABERDEEN.

From W. ANDERSON, Esq., Superintendent of Police.

Aberdeen, 1st June, 1857.

SIR,—During the past year, and for several years back, I find that the Licensed houses in this County have been gradually reduced in number—from 581 in May, 1849, to 457 in May, 1857. That during the past year, in this County, 22 prosecutions have taken place, principally on account of selling drink on Sundays. The Act, I consider, has done much good—and now the orders have from this office given a wholesome tone to a determination of punishing every one who contravenes their License certificate.

I hope in a year or two we may find few or no complaints to report. —I am, sir, your most obdt. servant,

W. ANDERSON, Gen. Sup.

From ALEX. THOMSON, Esq., Banchory, Convener of the County of Aberdeen.

Banchory House, Aberdeen, 6th June, 1857.

SIR,—I am very glad to have an opportunity of bearing my testimony in favour of Forbes Mackenzie's Act.

I can speak of its working in town only from the returns I have seen, and carefully studied, from Edinburgh, Glasgow, Dundee, Aberdeen, which are most satisfactory.

In the country it has been beneficial, and has gone far to put an end to Sabbath drinking.

From recent inquiries I find that the number of adult criminals all over Scotland has diminished very considerably. There are various causes for this, but the principal is Forbes Mackenzie's Act.

I should consider the repeal of it about the greatest calamity to the country which the Legislature could inflict.

My objection to the Bill is that it does not go far enough, and I deeply regret that it has not yet got fair play. If it was fully enforced, as it might easily be, its good effects would be soon visible.—I am, your obdt. servant,

ALEX. THOMSON.

No. IV.—AIRDRIE.

From N. SINCLAIR, Esq., Superintendent of Police.

Police Chambers, Airdrie, 4th June, 1857.

SIR,—In answer to yours of the 23d ult, requesting information as to the effects of the Public-Houses Act upon the habits of the people, I have to state that the result, in this town, is that there is far less outward appearance of drinking, and a great deal less crime on Sundays than previous to the introduction of that Act. I am, however, aware that a large quantity of spirits is purchased on Saturday nights, by private families, to be consumed on Sunday. I am not in possession of any statistics which can be properly relied upon as to the results of the Act.—I am, sir, your most obdt. servant,

N. SINCLAIR,
Superintendent of Police.

No. V.—ALLOA.

From the MAGISTRATES, &c.

Alloa, 17th June, 1857.

WE, the undersigned, have no hesitation, in bearing our testimony in behalf of the Public Houses (Scotland) Act, commonly called the Forbes Mackenzie Act.

It may have defects, but its influence, upon the whole, is extremely salutary. The small amount of restraint which it lays upon the sober and orderly is much more than counterbalanced by the wholesome check which it imposes upon drunkenness and Sabbath desecration. Since its enactment, our streets, during the night, have been comparatively quiet, and breaches of the peace, especially on the morning and evening of the Lord's-day, have been greatly reduced. The repeal of the Act would be an infliction upon Scotland which we would earnestly deprecate.

W. BENNET CLARK, Sheriff Substitute.
JAMES MOIR, Magistrate.
A. MITCHELL, Magistrate.
JAMES KIRK, Magistrate.
PETER CHIRNSIDE, Sup. of County Police.
GAVIN MARTIN, Governor of Prison.

No. VI.—ANNAN.

From Provost PALMER.

Annan, 1st June, 1857.

SIR,—In compliance with your request, I beg to state, that I am decidedly in favour of the Public-Houses Act. I have no hesitation in saying that, in as far as Annan is concerned, the restraining effects of the Act have had a very beneficial tendency.

The cases that have come before the Magistrates here have not been very numerous; but in all cases where the proof was clear, the parties have been fined 2/6 for the first offence, and one case of second offence 5/6, always with expenses. These examples have had a powerful effect, deterring others from committing breaches of the law.—I am, sir, your obdt. servant,

JOHN PALMER.

No. VII.—ARBROATH.

From JAMES CHARLES, Esq., Superintendent of Police.

Police Chambers, Arbroath, 28th April, 1857.

SIR,—I beg to acknowledge the receipt of your letter of date 17th inst., asking my opinion as to the general effects of the New Public House Act upon the habits of the people.

In reply, I beg to inform you that the habits of the people here, within the last two years, are greatly improved in regard to intemperance. I attribute this, in a great measure, to the working of the New Public-House Act, although the Act has not been carried out here rigorously.—for this reason, the Police are few for the size of the town. But I have studied to put down the Saturday night and Sunday con-

traventions, which, I have no hesitation in saying, has had a good effect on the habits of the people. A proof of this is shown by the Police Courts on the Mondays. We have now very few cases from drunken brawls on the Sunday mornings. A circumstance occurs this year, in the police records here, which will be seen from my annual report at 26th May next, that there have been nine Mondays already in the year, in which we have had no Police Courts. My own opinion is, regarding the Act, that its working has had good effects on the habits of the people of this Burgh.—I am, sir, yours respectfully,

JAMES CHARLES,
Superintendent of Police.

No. VIII.—AYR.

From D. M'DONALD, Esq., Superintendent of Police.

Police Office, Ayr, 29th April, 1857.

SIR,—In reply to yours of the 17th inst., requesting my opinion as to the general effects of Forbes Mackenzie's Public-House Act upon the habits of the people, I beg to state that it has been productive of much good here, in diminishing drunkenness, crime, and debauchery to a very great extent, and will do so wherever it is honestly and fairly carried out. Whenever you hear people complaining of it, be assured that it is not the Act, but themselves they have to blame in not administering it properly; and the general opinion here is, that it has been the greatest Legislative blessing conferred upon our country in our time. Street brawls during night are comparatively rare to what they were previously to the passing of the Act, especially on the Saturday nights and Sunday mornings, and a drunk person is seldom seen on the street on Sunday, which was not the case here formerly. There is not the fourth part of the private drinking carried on, and police cases have decreased by nearly one-half.

In the year ending Whitsunday 1854, there were 1767. In the year ending Whitsunday 1855, there were 1550. In the year ending Whitsunday 1856, there were 917, and I am confident that 1857 will also shew a decrease.

The Act has also done much good in being the means of drawing public attention to the enormity of the evil which required such a restrictive enactment, and thus many have been led to avoid it; so that the public-house is not quite so fashionable as it was wont to be, and, as one of our tavern keepers here, in speaking of the Act, expressed it, said, 'I would not give a pin for it if they would come in as they used to do, and drink till eleven, but it has put them from coming in at all. No doubt it bears hard on those whose subsistence depends on the debauchery of others; a general reformation to temperance and virtue is calculated to do so, but it will also prevent the ruin and disgrace, if not the eternal misery, of many thousands of persons and families.

I beg to remind you that Ayr is under peculiar disadvantages in many respects, and particularly relatively to this Act, owing to Newton and Wallaceton, which are within the Parliamentary bounds, and contain about as many inhabitants as Ayr, with 40 to 50 public-houses, and a few shebeen-houses, being without a police force. There are no shebeen-houses in Ayr, and I am certain there was more illicit selling before the passing of the Act than since, as then there were eight to ten brothels and houses of bad fame selling spirits, which is not the

case now; and, with one exception, these houses are among the things that were—I mean on the south side of the water.—I am, sir, your obedient servant,

D. M'DONALD,
Superintendent.

No. IX.—BANFF.

From NEIL ROBERTSON, Esq., Superintendent of County Police.

SIR,—In reply to your circular of the 17th ult., I beg to say that I continue to entertain the same favourable opinion of the working of the Public House Act which I communicated in my letter of the 18th October, 1855. Its beneficial results in suppressing drunkenness, lessening crime, and improving the morals of the people, are patent to all observers, especially in reference to the Sabbath day. For the last eighteen months, hundreds of labourers have been employed on railways in the centre of this county, and, but for the existence of the Act, it would have been all but impossible to have kept the peace. Any retrograde movement would be much to be regretted.—I am, sir, your obedient servant,

NEIL ROBERTSON,
Superintendent of County Police, Banffshire.

From GEORGE MEARNS, Esq., Superintendent of Burgh Police, Banff.
Banff, 4th June, 1857.

SIR,—I received yours of 27th May, requesting my opinion as to the general effects of the new Public Houses Act upon the habits of the people;—and in answer, I have to state, that in my opinion that Act has been productive of a great amount of good. Since it came into operation the town is much more orderly than formerly, and the business of the Police Court has been greatly lessened. The change to the better has been so marked as to attract very general notice, and the people have been consequently led to see how great an amount of the evils which afflict society are occasioned by the drinking usages of the country.—I am, sir, your obedient servant,

GEORGE MEARNS.

No. X.—BLAIRGOWRIE.

From WILLIAM STEVENSON, Esq., Superintendent of County Police.

Blairgowrie, 13th June, 1857.

SIR,—I have to inform you in answer to your request, that in this district, previous to Forbes M'Kenzie's Public House Act coming into operation, rioting and drunkenness were quite common on week nights, and more particularly on Saturday nights and Sundays, but since said Act came into operation, such, in a great measure, are done away with, more particularly on Sundays.

My opinion, from what has come under my notice during ten years' experience in the police service, as respects crime in general, is, that ninety cases out of one hundred have their origin, either directly or indirectly, from indulging too freely in the use of ardent spirits.

I consider that Forbes M'Kenzie's Act—properly speaking Lord Kin-

nair's Act, it being his lordship who framed the measure before it became law—is a great boon conferred on the community at large, and that any modification of the same, would be attended with evil results. —I am, sir, your obdt. servant,

WILLIAM STEVENSON,
Superintendent of County Police, Blairgowrie.

NO. XI.—BURTISLAND.

From JAMES CONNELL, Esq., Magistrate.

Burtisland, 29th June, 1857.

From the annexed List, it will be seen there has been a decided falling off of cases for assault and breach of the peace, which are almost always attended with drunkenness; and I can attest, from personal experience, that, since Forbes McKenzie's Act came into operation, no cases have come before the magistrates here for drunkenness on Sabbath.

JAMES CONNELL,
Magistrate.

List of Cases which have come before the Magistrates of Burtisland, since 1st October, 1850—

	Male.	Female.	Total.
From 1850 to 1851, for Assault, ...	9	2	11
" 1851 to 1852, " ...	3	0	3
" 1852 to 1853, " ...	3	3	6
" 1853 to 1854, " ...	3	0	3
" 1854 to 1855, " ...	2	1	3
" 1855 to 1856, " ...	0	0	0
Total, ...	20	6	26
From 1850 to 1851, for Assault and Breach of Peace, ...	0	0	0
" 1851 to 1852, " ...	1	0	1
" 1852 to 1853, " ...	2	1	3
" 1853 to 1854, " ...	3	0	3
" 1854 to 1855, " ...	18	0	18
" 1855 to 1856, " ...	0	0	0
Total, ...	24	1	25
From 1850 to 1851, for Theft, ...	8	4	12
" 1851 to 1852, " ...	2	3	5
" 1852 to 1853, " ...	5	0	5
" 1853 to 1854, " ...	3	3	6
" 1854 to 1855, " ...	5	1	6
" 1855 to 1856, " ...	5	2	7
Total, ...	29	13	42
From 1850 to 1851, for Breach of Peace, ...	29	1	30
" 1851 to 1852, " ...	13	2	15
" 1852 to 1853, " ...	7	2	9
" 1853 to 1854, " ...	15	10	25
" 1854 to 1855, " ...	13	4	17
" 1855 to 1856, " ...	9	0	9
Total, ...	77	19	96
Assaults, ...	20	6	26
Assaults and Breach of Peace, ...	27	1	28
Theft, ...	29	13	42
Breach of Peace, &c., ...	77	19	96
Total, ...	153	39	192

P.S.—It is not mentioned in the Conviction Book whether the parties were drunk or sober at the time the offences were committed.

NO. XII.—CRAIL.

From Provost Brown.

Crail, 30th May, 1857.

SIR,—I duly received yours of the 28th inst., asking my opinion as to the general effects of the new Public Houses Act. I have no means of knowing what difference there is in the quantity of spirits consumed within this burgh. However, there is a great improvement in the quietness of the place, and especially since the closing hour was made ten instead of eleven at night. This alteration was made two years ago; since which time we have had little or no trouble with riots or drunken brawls. But this being a small place, with no great public-works in it, the habits of the people are very different from the inhabitants of such a place as Glasgow.—I am, sir, your most obdt. servant,

DAVID BROWN, Provost.

XIII.—CROMARTY.

From JAMES GRIGOR, Esq., Procurator Fiscal.

Cromarty, June 1st, 1857.

SIR,—I am in receipt of your letter of the 28th May. I certainly think that the New Public House Act has, to a certain extent, operated beneficially in this district. Intemperance has been considerably checked, and the sacredness of the Sabbath more rigidly observed.

Besides these good effects, I am of opinion that crime has diminished in this district, by the introduction of the Act in question. Petty assaults and street squabbles are of much less frequent occurrence, and, on the whole, therefore, I have no hesitation in holding, that the measure has had a salutary influence on the morals and habits of the people in this locality.

The Act, however, has defects, and is capable of improvement.—I am, your most obdt. servant,

JAMES GRIGOR,
Procurator Fiscal of the County.

NO. XIV.—CUPAR.

From Provost MITCHELL.

Cupar, 5th June, 1857.

SIR,—In answer to your circular of 28th ult., asking my opinion of the general effects of the new Public Houses Act upon the habits of the people in this town, I have no hesitation in stating that the Act has had the most beneficial effect in this town, particularly as regards the entire shutting up of public-houses on Sabbath.

No intoxicated person is now to be seen as formerly on these days, and on week days I should say that the habits of the people are much improved, though this may not be ascribed entirely to the Act referred to.

The number of our public-houses is not half what it was 14 years ago.

—there being only three inns and eleven public houses in a town of between 6000 and 7000 inhabitants.

It would be an improvement were the hours for opening grocers' shops made the same as public-houses.—I am, sir, your most obed. servant,

WM. MITCHELL.

From ROBERT ADAMSON, Esq., Superintendent of Police.

Cupar, 4th June, 1857.

DEAR SIR,—I was duly favoured with yours of the 27th ult., and I regret that I have been unable to reply to it before this. You ask my opinion as to the general effects the new Public House Act has had upon the habits of the people of this county. I have watched the operations of this statute in all its bearings since it came fully into force, and I am glad to say that it has been the means of reducing crime and drunkenness to about one half of what it was under the old lax system. On Sundays there is a very marked improvement for the better; seldom, indeed, will you see a drunken person in our streets—before, Sunday was the head drinking, crime-committing day, especially for assaults and disorderly conduct.

It has been said that the new Act has increased private-house drinking. I am glad to say that such is not the effect in this county, whatever its effects may be elsewhere. On the contrary I am convinced that there is now much less private house drinking than formerly, especially on the Sabbath.

On the whole, I view the Act as one of the greatest blessings our country has had conferred upon her for many a long year.—I am, dear sir, yours truly,

ROBERT ADAMSON.

No. XV.—DORNOCH.

From PHILIP MACKAY, Esq.

Dornoch, 21st April, 1857.

SIR,—I am in receipt of your letter of the 17th inst., requesting my opinion on the working of the Act for the Better Regulation of Public Houses in this county, and, in reply, beg to report, that it is gratifying to be able to announce, in the outset, that the results which come under my notice in connection with my office, are, in many respects, hopeful and encouraging. It has had a most beneficial effect upon the habits of the people. It is my firm belief, that the liquor traffic is a prolific source of crime and pauperism, and that the present Public House Act has operated beneficially in the diminution of these evils.—I am, sir, your most obedient servant,

PHILIP MACKAY,
Chief Constable of the County of Sutherland.

No. XVI.—DUMBARTON.

From Sheriff STEELE.

Court House, Dumbarton, 13th June, 1857.

SIR,—I beg to acknowledge receipt of your letter of the 5th inst., requesting my opinion as to the working of the 'Forbes Mackenzie Act,' and I have much pleasure in complying with your request.

So far as my experience goes, that statute has been productive of much good in diminishing the number of those offences which usually take their rise from the inordinate use of intoxicating liquors—such as assaults, and other acts of violence against the person, wilful and malicious mischief, and infractions generally of the public peace. I have not the means of stating statistically the amount of benefit thus obtained, but it is palpable and substantial—greater than could have been reasonably anticipated from a measure introducing considerable changes, and those, too, of a somewhat experimental kind.

I think it proper to add, that the great defect of the Act is the want of sufficient means for enforcing its provisions. Were this defect supplied, and a supplementary measure passed to prevent the evasion of the Act by drinking clubs and similar contrivances (alike hurtful to the public and the licensed dealer), the efficiency of the statute, as a preventive measure, would be almost indefinitely increased.—I am, sir, your most obedient servant,

W. C. STEELE.

No. XVII.—DUMFRIES.

From GEORGE INGRAM, Esq., Superintendent of Police.

Dumfries, 21st April, 1857.

DEAR SIR,—In answer to your letter of the 17th inst., relative to Forbes M'Kenzie's Act, I have to state, that I have bestowed much attention on the working of that measure, and have no hesitation in stating, that its operation has been very beneficial on the habits of the people in this place, particularly among the young, and those who were not habitual drunkards. Previous to Forbes M'Kenzie's Act coming into operation, it was quite a common thing to see groups of our shop lads and others moving in a respectable sphere, brawling and staggering along our streets, as late as one and two o'clock on Sunday mornings. This state of things has happily now almost ceased to exist, and by twelve o'clock on Saturday nights, tranquillity and decorum generally prevail. The same marked improvement, as to good order on Sundays, is also observable; and satisfied am I, that, wherever the provisions of this Act are faithfully administered, the good results cannot but be apparent to the most casual observer. I should consider its repeal a very great misfortune indeed to the community.—I am, dear sir, yours truly,

GEORGE INGRAM,
Superintendent of Police, Dumfries.

No. XVIII.—DUNBAR.

From PROVOST COMBE.

Dunbar, 29th May, 1857.

SIR,—In reply to your circular of yesterday's date, I have much pleasure in bearing my testimony to the good effects of the Public House Act. Formerly it was customary to hold a weekly court here for the trial of disorderly persons. Now months will elapse without a single offender being brought before the police court. Formerly it was not uncommon to meet with drunken men and women on the streets on the Sabbath, while scarcely a single person of that description has been

seen on our streets since the Act came into operation. There is thus a marked difference in the habits and morals of the people here; as by shortening the hours and reducing the number of licenses, we have removed the facilities and the competition for customers which used to exist amongst the lower class of publicans.

It is said that private drinking has increased by the restrictions we have used, but I have met with no proof for this assertion, and have no reason to believe it is true.—I am, sir, your most obdt. servant,

WM. COMBE,
Provost.

No. XIX.—DUNDEE.

From the Provost and Magistrates.

Dundee, 12th June, 1857.

It affords us much pleasure—as Magistrates of the Royal Burgh of Dundee, and Commissioners of Police—to bear our testimony to the beneficial effects resulting from the operation of the Forbes M'Kenzie Act on this large community. For example, in 1853, the year prior to the passing of this Act, there were 4156 cases, including 5791 persons, brought before the Police Court; while last year (1856), with an increased population, there were only 3017 cases, including 4520 persons, brought before the Court.

The improvement, however, on the Sabbath is much more marked and satisfactory. Formerly, intemperance prevailed to a considerable extent, in consequence of the great number of houses and shops that were open for the sale of drink on the Lord's-day, and many poor inebriates were to be seen staggering along some of our streets; while now, since these houses are shut, one is rarely seen drunk on the Sabbath.

The statistics lately laid before the Police Court, by our excellent Superintendent, Mr MacKay, of those brought up before the Police Court for Sabbath offences for the two years prior, and the two years subsequent, to the passing of this Act, are the best evidences of its efficiency for the prevention of crime, and better observance of the Sabbath. The total number of persons brought up before the Police Court for two years prior to the passing of the Act, for offences on the Sabbath, were 729; while, for the two years subsequent, the numbers were reduced to 334. The jail returns for the same period will be found to correspond with the above.

With such results as these before us, we would deprecate any attempt made to weaken its efficiency, or impair its working. We feel assured that wherever the spirit of the Act will be temperately, but firmly carried out, intemperance will be diminished, crime lessened, and the general morals of the people improved.

JOHN EWAN, Provost.
JOHN MacKAY, Bailie.
JOHN MOIR, Bailie.
ROBERT WEBSTER, Bailie.
ALEX. GILRUTH, Bailie.

From D. MacKAY, Esq., Superintendent of Police, Dundee.

Police Chambers, 6th May, 1857.

Sir.—In reply to your communication of the 17th ult., requesting, on the part of the Scottish Temperance League, my opinion as to the general effects of the new Public Houses Act upon the habits of the people, as also a statement of any facts bearing on the same subject, I have much pleasure in being able to state, from my own experience and observation, that the good effects of the new Law upon the general community have been very manifest; and I do not think I exaggerate when I say, that the new Public House Act is, in my opinion, the most valuable that has been enacted by the legislature in modern times.

It has exercised a very marked effect upon the habits of the working classes, in reference to the observance of the Sabbath, the bulwark of religious freedom, and in having given the sanction of law to the preserving the sanctity of that sacred day of rest, which nothing is more calculated to undermine and to demoralize the community than the unrestricted traffic in excisable liquors. Although the new Law had done no more than this, I humbly venture to think that the people of this country, and especially the working classes, would have been under a perpetual obligation to the promoters of this Act.

But it has done a great deal more, as will be seen from the annexed tables.

The number of Public Houses have been very much diminished since its operation; they now are closed at 11 o'clock at night, and not opened before 8 o'clock in the morning, which rules have been attended with the very best results, and crime generally has been, in consequence, much reduced. In 1856, the number of cases brought before the Police Court, under the heads of disorderly conduct and drunkenness, had somewhat increased; and it was alleged by the opponents of the Public House Act, that this temporary increase proved that the new Law was inoperative in the prevention of crime; but in a return which I laid before the Magistrates and Police Commissioners of Dundee, in reference to this subject, in November last, and which I annex hereto, I shewed that the increase did not take place during the prohibited hours, viz., on the Sabbath, or at hours when the Public Houses should have been closed, but that it took place between the hours of 6 o'clock in the morning, and 12 o'clock at night, and that the increase arose from the three following causes, viz., the disbanding of the militia, a large reduction in the army, and abundance of employment, with wages unprecedentedly high.

This increase was therefore temporary, and very soon passed off; and, it will be seen from the returns, that during the present year crime has considerably diminished; and I have the greatest confidence that still more beneficial results will arise from the faithful administration of the Law.

In conclusion, I would say, that an amendment of the Public House Act, in as far as unlicensed houses are concerned, is indispensable, before the full benefits of the Act can be felt or appreciated, and if such a thing be contemplated, I will be glad to give, if required, the results of my experience in suggesting any alterations.

I.
Return showing the Number of Public Houses in Dundee in the years 1854 and 1856:—

1854.	1856.	Decrease.
517	396	121

Return showing the Number of Persons apprehended by the Police, for the undermentioned Crimes and Offences, from 8 o'clock on the mornings of Sabbath, to 8 o'clock on the mornings of Monday, from 15th May, 1852, to 14th May, 1856, inclusive:—

CRIMES AND OFFENCES.	Before the Public House Act came into operation.		After the New Public House Act came into operation.	
	1852-1853.	1853-1854.	1854-1855.	1855-1856.
Assault,	32	44	27	10
Disorderly Conduct,	175	254	164	110
Drunkenness,	114	110	39	44
Total persons,	321	408	170	164

Return showing the Number of Persons apprehended by the Police, accused of Drunkenness and Disorderly Conduct, during the month of October, in the years 1854, 1855, and 1856, from 6 a.m. till 12 p.m., and from 12 p.m. till 6 a.m.:—

DRUNKENNESS.			
OCTOBER.	1854.	1855.	1856.
Total number during month,	118	67	125
Number from 6 a.m. to 12 p.m.,	97	56	112
Number from 12 p.m. to 6 a.m.,	21	11	13

DISORDERLY CONDUCT.			
OCTOBER.	1854.	1855.	1856.
Total number during month,	115	103	145
Number from 6 a.m. to 12 p.m.,	74	68	86
Number from 12 p.m. to 6 a.m.,	41	35	59

I am, sir, yours respectfully,

D. MACKAY,

Superintendent of Police.

From PETER CRUIKSHANK, Esq., Governor, Dundee Prison.

Prison of Dundee, 6th May, 1857.

Sir,—I must apologise for delaying so long in answering your letter of the 17th ultimo, but a press of business requiring my personal attention has prevented me from giving your request the careful consideration which the subject deserves. I do not feel myself in a position to give any decided opinion as to the working of the New Public Houses Act in Dundee, as I am not frequently in the town, and, within the

walls here, my observation extends, in that direction, to the comparative numbers admitted under charges of Drunkenness and Disorderly conduct, &c., which may not form sufficiently accurate data for a decided opinion on the subject, from the circumstance, that, at the Police Court, such offences are very frequently visited with the alternative sentence of a fine or imprisonment, so that I am not aware how many may have been found guilty, and discharged on payment of a fine, without being brought to prison.

In the year 1853, the number of prisoners committed to this prison, for drunkenness and disorderly conduct, was 601 per cent. on the total number of prisoners admitted. In the years 1854, 1855, and 1856, the per centages were 55, 56, and 59 respectively, which would seem to indicate an increase of these crimes.

Prior to the introduction of the New Public Houses Act, the number of prisoners received into this prison from the police court, on Mondays, was double the number received on other days of the week; and, since that Act came into operation, the number received on Mondays, in general, is no greater than on the other days of the week, which is certainly an evidence in favour of preventing the sale of intoxicating liquors on Sabbath. At the same time, the law in question is extensively evaded. Perhaps, it might be amended, by making it a punishable offence to sell or give intoxicating liquors to individuals when tipsy, or allowing them to leave a dwelling house or place of business in a state of drunkenness, or by some other device, by which the evaders of the law, in its present shape, might be more readily got at.—I am, sir, your obedient servant,

PETER CRUIKSHANK.

Average Daily Number of Prisoners in the Prison of Dundee, for the Year—

From 15th May, 1851, to 15th May, 1852,	198
" 1852, " 1853,	159
" 1853, " 1854,	160
" 1854, " 1855,	141
" 1855, " 1856,	99
" 1856, " 1857,	95

Average Daily Number received on Mondays—limited to cases of Drunkenness or Disorderly Conduct, and Breach of the Peace—during the Years above specified, viz.—

From 15th May, 1851, to 15th May, 1852,	9-422
" 1852, " 1853,	7-115
" 1853, " 1854,	7-327
" 1854, " 1855,	4-759
" 1855, " 1856,	4-692
" 1856, " 1857,	4-961

PETER CRUIKSHANK,

Governor, Prison of Dundee.

10th June, 1857.

No. XX.—DUNFERMLINE.

From Provost ROBERTSON.

Dunfermline, 30th May, 1857.

DEAR SIR,—In answer to your inquiries, as to the working of the new Public Houses Act, I am happy to be able to state that the effects of it have been very beneficial. Our streets are much quieter through the night, and also on the Sabbath—not half of the rioting and fighting, I believe, crime from drunkenness has decreased about one-third, but I refer you to the answer of our Superintendent of Police for statistics. I know of no hardship to any party from the Act.—I am, yours truly,

R. ROBERTSON,
Provost.

From GEORGE STUART, Esq., Superintendent of Police, Dunfermline.
Police Office, Dunfermline, 31 June, 1857.

DEAR SIR,—I regret that I have not been able to answer your circular before this time.

In giving my opinion on the effects produced by the Forbes M'Kenzie Act, as the publicans call it, I have no hesitation in saying that it has done an amount of good in this part of the country at which its most sanguine promoters might well be surprised. This is a fact so obvious, that even the publicans dare not attempt to contradict it.

Wherever it is strictly enforced, it will go a great length in keeping the Sabbath-day holy. Previous to its becoming law, the public-houses here were kept open during the whole of Sunday, with the exception of something like three hours for the two diets of public worship, and were frequented by bands of Irish labourers and others from the public works in the district, and the result was, that on Sunday evening, the streets presented scenes of riot and disorder by the drunken parties quarrelling and fighting among themselves; nor was this the worst of it—quiet and respectable people, who had been out of the town on Sunday evenings, were frequently attacked on the roads and maltreated by these drunk ruffians on their way home. During the year before the Act came into effect, a medical gentleman was attacked about a mile to the eastward of Dunfermline, when returning home from visiting his patients on a Sunday night, and assaulted, to the danger of his life, by a drunk Irishman who had spent the afternoon in a public-house here. On a Sunday night in the same year, no less than thirteen unoffending persons were knocked down at different parts of the road between this and Crossgates in this parish, by a band of drunk Irishmen who had had a day's 'apree' in the town, and diverted themselves going home, by knocking passengers down and tumbling them among the snow. About the same time, a person, who is a preacher in a church in one of the adjoining parishes, was returning home on a Sunday evening, when he was knocked down by three men belonging to the class which I have already mentioned, and kicked until several of his ribs were broken, and his life in jeopardy. Previous to the new Act, cases of this kind very often took place. Whereas, during the three years of the Act, not a single case of this kind has occurred in the district; and I know, that in the Sheriff Court here, the number of convictions for crimes of all kinds during the three years of the Act, is more than thirty per cent. less than the convictions for the three years preceding the commencement of the Act; and the convictions in our police office for disorderly conduct and drunkenness has fallen off forty-five per cent.

I may also mention that, previous to the new Act, we had in Dunfermline, every night on the streets, and hanging about the closes and passages, from fifteen to twenty females, of a certain character, who followed no lawful employment during the day, ready to waylay every drunk man that made his appearance, and hook him off to their dens, from which he seldom escaped with a farthing in his pocket. Now-a-days the officers will patrol the streets during the whole night, and not see a female of this class for a month. On the other hand, I know of no case of hardship arising from the Act being enforced, unless that some of the publicans have had to shut their shops, and fall back upon their original occupations as a means of support, as I that some of the 'jolly mortals' are constrained to go earlier home to their wives, and are, like the naughty ones among their children, much sooner in bed than they could have wished.

For my own part, I would be sorry to see the Act repealed, and I would advise every friend of temperance, and every lover of peace and good order, to do their utmost to keep it as it is.—I am, sir, your obedient servant,

GEORGE STUART,
Superintendent.

No. XXI.—DINGWALL.

From GEORGE CUMMING, Esq., Superintendent of Police, Ross-shire.

Dingwall, 11th June, 1857.

DEAR SIR,—In reply to your note as to my opinion of the new Public House Act, I have much pleasure in stating that, so far as this county is concerned, the working of the Act has suppressed drunkenness and crime to a very great extent. I direct the police force of the county to visit the different public-houses at 11 o'clock p.m., in their respective districts, and I find now that we have not the one fifth of cases of assaults that we used to have. This I attribute entirely to the working of this Act. In my opinion, it is a great blessing to the country, and I have no doubt it has had the effect of decreasing crime to a very great extent.—I am, yours truly,

GEORGE CUMMING,
Supt. of Police, and J. P. Fiscal, for county of Ross.

No. XXII.—ELGIN.

From Provost GRANT.

Elgin, 29th May, 1857.

SIR,—I am favoured with yours of the 28th, and, in reply, have to say, that the effects of the New Public Houses Act upon the habits and morals of the people have been, in a general point of view, very beneficial. Objections have been stated to its working, and special hardships, such as are less or more attendant on all enactments, have been complained of; but these, if they cannot be removed or alleviated without impairing the efficiency of the statute, should be left alone.

I sincerely believe that, before the passing of the Act, one half of all the spirits consumed in Scotland were consumed after eleven o'clock, and that, in many places where low tipping houses were numerous, a rivalry of the worst description took place, as to which could secure the greatest

number at night, each having their respective champions or seducers to canvass for them; and, when once seated, without any compulsion to rise, and every inducement to remain, thousands were unfitted for next day's toil, and many involved in night brawls and crime.

The bustle that is now observable at eleven o'clock in clearing out, and the march of all to their respective homes, coupled with the peace and quiet that soon succeeds, particularly on Saturday nights, form a most favourable contrast to the previously existing state of things. Finally, the decided tendency of the Act is to limit the number of low public-houses, whose only chance for existence is with those who can be induced, by any means, to drink long and deep; while the honest and respectable hotel-keeper, if not benighted in a pecuniary point of view, is placed in a much higher position in society—his transactions and dealings are with temperate men, who leave his premises able to take care of themselves, and himself and his servants are relieved from the degradation of hanging on, and serving, at unreasonable hours, the worst class of society.—I am, sir, your most obedient servant,

JAMES GRANT,
Provost of Elgin.

From WILLIAM HAY, Esq., Superintendent of Police.

County Police Office, Elgin, 26th April, 1857.

SIR,—In reply to your circular of the 17th inst., I beg to state that I think, since the passing of the Public House Act, there is less open drinking amongst the classes in this county who are in the habit of frequenting such houses; but I think also, that, in some instances, although these are exceptional, drinking in private houses seems to prevail more than it used to do. Generally speaking, the Act is fairly wrought in this county; there is a disposition on the part of the great majority of public-house keepers to conform to its provisions, but there has also been a number of prosecutions, and, in some instances, more than one conviction. Although the Act may be considered in its infancy, and not yet fairly tried, I have no hesitation in saying, from all I have observed, that its effects have been beneficial. The opposition which the Act has received from many who consider their rights and liberties interfered with, is, perhaps, not to be wondered at; but I have little doubt this opposition will year by year be found to decrease—and did the Act receive full and fair justice from all parties, I am pretty confident its effects on many classes of the population would be more apparent than has yet been seen.—I am, sir, your most obedient servant,

WILLIAM HAY,
Superintendent of County Police.

No. XXIII.—FORRES.

From Provost RIACH.

Council Chambers, Forres, 6th June, 1857.

SIR,—In answer to your letter of the 28th May, I have the pleasure of informing you, that in this Burgh, the general effects of the New Public House Act have been decidedly favourable to the sobriety and good conduct of the inhabitants. The particular facts which have come under my observation, are, the almost total disappearance of drunkenness on the Sabbath day, and the occurrence of fewer police cases, for police offences, among our ordinary population. Cases have been frequent of late,

but chiefly against strangers employed on a railway in course of formation in our own immediate neighbourhood.—I am, sir, your most obdt. servant,

PATRICK RIACH,
Provost.

From J. GILCHRIST, Esq., Superintendent of Police.

Forres, 24 June, 1857.

SIR,—I received your letter, dated the 27th ultimo, inquiring about the working of the new Public House Act in this town and district, and in reply, I beg to state, for the information of the Directors of the Scottish Temperance League, that the new Act has proved to be the greatest blessing that ever came over this town and district. It is not now, as formerly, when the public-houses used to be open day and night, Sunday and Saturday, and there was no end to drunkenness and disorderly conduct; when, on Sunday morning, the police cells used to be full of drunken characters, and when the people going to church used to be annoyed by the cries of the drunkards. Since the new Act came in force, the public-houses are cleared at 11 o'clock at night, and opened in the morning at 8 o'clock, and we should be thankful. Neither drunkenness, disorderly conduct, or breach of the peace on our streets exists, and I am of opinion that the working of the Public House Act is the greatest blessing that has ever come over Scotland, and with the blessing of God long may it continue. High and low, rich and poor, should pray for the continuance of the Act, and not alter one single section of the new Act of Parliament.—Your most obedient humble servant,

JOHN GILCHRIST,
Supt. of Police.

P.S.—Let the enemies of the new Act try their strength, and in this town and district they will meet with twenty to one in favour of the new Public House Act.

J. GILCHRIST.

XXIV.—GALASHIELS.

From JAMES M'BAIN, Esq., Superintendent of Police.

Police Office, Galashiels, 6th June, 1857.

SIR,—I am in receipt of yours of the 27th May last, in reference to the 'New Public-Houses Act,' and in reply thereto, have much pleasure in informing the Directors of the Scottish Temperance League, through you, that the working of the New Public House Act in this burgh has done a great deal of good.

Any statistical returns of crimes and offences, as well as the number of, and convictions against, keepers of hotels, public-houses, and licensed grocers, for contraventions of New Public-Houses Act made out by me, have already appeared elsewhere; but the following return is subjoined.

—I am, sir, your most obdt. servt.,

JAMES M'BAIN,
Supt. of Police.

CRIMES AND OFFENCES, for 1862.															CRIMES AND OFFENCES, for 1865.																								
Also, Protection Cases.															Also, Protection Cases.																								
Males.					Females.					Total.					Strangers.					Connected under Indictment of Juries.					Accused as not Proven.					Accused after Citation.					Apprehended by, or removed to County Authorities.				
M	F	T	M	F	M	F	T	M	F	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T									
1	1	2	1	1	1	1	2	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
2	1	3	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
3	1	4	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
4	1	5	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
5	1	6	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
6	1	7	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
7	1	8	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
8	1	9	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
9	1	10	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
10	1	11	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
11	1	12	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
12	1	13	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
13	1	14	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
14	1	15	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
15	1	16	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
16	1	17	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
17	1	18	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
18	1	19	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
19	1	20	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
20	1	21	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
21	1	22	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
22	1	23	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
23	1	24	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
24	1	25	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
25	1	26	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
26	1	27	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
27	1	28	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
28	1	29	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
29	1	30	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
30	1	31	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
31	1	32	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
32	1	33	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
33	1	34	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
34	1	35	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
35	1	36	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
36	1	37	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
37	1	38	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
38	1	39	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
39	1	40	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
40	1	41	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
41	1	42	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
42	1	43	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
43	1	44	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
44	1	45	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
45	1	46	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
46	1	47	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
47	1	48	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
48	1	49	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
49	1	50	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
50	1	51	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
51	1	52	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
52	1	53	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
53	1	54	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
54	1	55	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
55	1	56	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
56	1	57	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
57	1	58	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
58	1	59	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
59	1	60	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
60	1	61	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
61	1	62	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
62	1	63	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2									
63	1	64	1	1	2	1	3	1	1	1	1	2	1	1	2	1	1	2	1	1	2	1	1	2															

J. M'BAIN, Superintendent of Police.

From A. MANN, Esq., Superintendent of Police.

Police Office, Greenock, 23d April, 1857.

Sir,—I beg to acknowledge receipt of your letter of the 17th inst., and, in compliance with your request, to send you, hereto subjoined, a return of the number of cases of drunkenness, brought under the notice of the police in Greenock, for the years 1853, 1854, 1855, and 1856.—I am, sir, yours faithfully,

AR. MANN,
Superintendent of Police.

	1853.			1854.			1855.			1856.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Number of persons taken off the streets by the Police, for being drunk and unable to conduct themselves.	1714	967	2574	1683	1380	3063	835	860	1695	609	477	1086
Number of persons accused of assaults and breaches of the peace, who were in a state of intoxication when the offence was committed.	662	229	882	564	187	751	305	58	363	403	358	761
Grand Total,	2376	1190	3566	2247	1567	3814	1140	908	2048	967	613	1580

From JOHN R. GRAY, Esq., Town Clerk, Greenock.

Council Chambers, Greenock, 9th June, 1857.

Sir,—In reply to your inquiry respecting the working of the Public Houses Act, commonly called Forbes McKenzie's Act, I have to state, that since the same came into operation, the number of cases in the police court has been much fewer than previously, and greater regularity and order have been observed on the streets, not only the week-day evenings, but during the whole of the Sabbath-day; and I should much regret that any attempt to repeal the Act were successful.

I may mention, that so far back as 1840, our Police Act, 3 Vict., Cap. 27, has a clause prohibiting the sale of ale, beer, and spirituous liquors on any part of any Sunday, or other day set apart for public worship by lawful authority.—I remain, sir, your obdt. servant,

JOHN GRAY.

RAY,
Town Clerk.

XXVI.—HADDINGTON.

From W. BAIN, Esq., Superintendent of Police.

Haddington, 14th June, 1857.

Sir,—In answer to your inquiries, I beg to state that I am of opinion that Forbes M'Kenzie's Act has done an immense deal of good in this burgh.

There have not been so many persons convicted for being drunk and disorderly on the streets since Forbes M'Kenzie's Act came into operation. Drinking also has been diminished to a great extent on Sundays, and it is now rare to see persons the worse of drink on Sundays.

From my intimate knowledge of the burgh for the past fifteen years, I have had good opportunity of seeing the benefits of this Act. I have conversed with several of the respectable licensed grocers, who have expressed their satisfaction at the law which empowered them to refuse to supply parties in their premises with drink. Several of the innkeepers also expressed to me their high approval of the hours laid down for closing their premises at night, and with the clause enabling them to shut their premises on Sunday against all but travellers—the only difficulty they find being what constitutes a *bona fide* traveller?—I am, &c.

W. BAIN,
Supt. of Police.

Return from Haddington, shewing the number of persons convicted for crimes against the person and property during the last three years, who were sober or intoxicated when they committed said crimes.

OFFENCES.	Sober.	Intoxicated.	Total.
1854 { Against the Person.....	60	123	183
{ Property.....	99	18	117
Total.....	159	141	300
1853 { Against the Person.....	82	143	225
{ Property.....	113	24	137
Total.....	195	167	362
1852 { Against the Person.....	85	105	190
{ Property.....	133	25	158
Total.....	218	130	348

Return shewing the number of persons convicted for crimes against the person and property during the last three years, who were sober or intoxicated when they committed said crimes.

OFFENCES.	Sober.	Intoxicated.	Total.
1856 { Against the Person.....	48	98	146
{ Property.....	79	13	92
Total.....	127	111	238
1855 { Against the Person.....	48	102	150
{ Property.....	62	23	85
Total.....	110	125	235
1854 { Against the Person.....	60	123	183
{ Property.....	99	18	117
Total.....	159	141	300

GEORGE HENRY LIST,
Superintendent.

County Police Office, Haddington, Feb., 1857.

XXVII.—HAMILTON.

From THOMAS DYKES, Esq., *Procurator Fiscal.*

Sheriff's Chambers, Hamilton, 13th May, 1857.

SIR,—I am in receipt of yours of yesterday's date. I believe that Forbes Mackenzie's Act has done good service in this district, and that the amount of crime has considerably decreased since it came into operation.—I am, sir, your obdt. servant,

THOMAS DYKES,
Procurator Fiscal.

From JAMES VEITCH, Esq., *Sheriff Substitute, Hamilton.*

Hamilton, 13th June, 1857.

SIR,—I am in receipt of your letter of yesterday. In answer, I can only state—what I believe I did to you on a former occasion—that after the experience of nearly a quarter of a century in the criminal courts of this county, I find nine-tenths of the offences brought before the court have their origin in drunkenness.—I am, sir, your obdt. servant,

JAMES VEITCH,
Sheriff Substitute.

From WILLIAM HENDERSON, Esq., *Town Clerk, Hamilton.*

Hamilton, 17th June, 1857.

SIR,—I am in receipt of your note of yesterday. I have not leisure to go over the various complaints which have been presented against publicans under the Public Houses Act. In my opinion, the Act has been productive of very considerable benefits in Hamilton, and adjacent villages, as far as regards Sunday desecration. I entertain doubts as to the utility of the measure in the suppression of drinking in the week or working-days. In my opinion, the restrictions upon the time of opening and closing public-houses is calculated to drive—and actually has driven—the working men to take home spirits to their dwelling houses, or to resort to shebeens or shabby inns.—I am, sir, your obdt. servant,

WILLIAM HENDERSON.

No. XXVIII.—HAWICK.

From JAMES THOM, Esq., *Superintendent of Police.*

Police Office, 3d June, 1857.

SIR,—I have great pleasure in giving testimony that, as far as the new Public House Act has been carried out here on the Sabbath days, it has been beneficial to the community.

At the time the Act came into force in other places in Scotland, (or rather two years afterwards), the Commissioners of Police, at their quarterly meeting, passed a minute that the police officers should be restricted to the working of it to the Sundays only, which minute has not, up to the present moment, been repealed, so that, in point of fact, we have only had the seventh part of the Act, or rather one day out of the seven during which the Act can penetrate this outlandish place. It has, therefore, never had a fair trial in Hawick. During the past year,

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ending fifth May, 1857—being the licensing court day for granting renewals of certificates, I felt it my duty to object to a number of the worst conducted houses receiving a renewal of their certificates—one grocer, in particular, for forcibly refusing admittance to the police on Sunday the 12th day of April last, the house and shop being full of persons, at the time, consuming drink on the premises. The grocer pled that the Public House Act only authorized the police to enter the inns and public-houses, but gave no authority whatever to enter grocers' shops. The Justices held that although grocers were not mentioned in the 14th Sec. of the Act referred to, my objection was well founded, and they had no hesitation in refusing a renewal of the certificate, which decision was confirmed on appeal to the Quarter Sessions. Two inn-keepers have been fined (one of them twice,) within the year for Sunday traffic—and for the last four months there has not been a single case of crime tried before the burgh Magistrates, which I can only compute to the strict working of the Act on the Sabbath.—I have the honour to be, sir, your humble servant,

JAMES THOM,
Superintendent of Police.

XXIX.—HELENSBURGH.

From JAMES LENNOX, Esq., Superintendent of Police.

Helensburgh, 25th May, 1857.

Sir,—In reply to your letter of 25d inst., I have much pleasure in stating, that since the new Public House Act came into operation, a decided alteration for the better has taken place in this town. Previously to the passing of the Act, and when the public houses were open to 12 o'clock at night, we had continual brawling, swearing, and fighting, particularly on Saturday nights, which was kept up till 2, 3, and sometimes 4 o'clock on Sunday morning; now the streets are comparatively quiet by 11, and at 12 scarcely a drunk person is to be seen; and the public-houses are shut here at 10 at night, an excellent regulation. And through the day on Sundays, the change is still more marked—I may say it is complete. Before the Act, the publicans were allowed to carry on their trade on Sundays. It was then lamentable to see the number of intoxicated persons, male and female, staggering along our streets. At present, it is a rarity to see anything of the kind; the decencies of the Sabbath are observed with respect by those who acted very differently in times gone by. It is my firm conviction that the working of the Act has been of very great benefit to this community; and I, for one, would be very sorry to see the Act interfered with, unless it were to make it more stringent.

I have held my present situation for a long series of years, during which time the town and population thereof has much increased. Notwithstanding the size of the town, and increased number of inhabitants, there are fewer public-houses in it now, than when I was first placed in office—three more have been knocked off the list this year.

I don't mean to say, that there is not, now and again, some unfortunate creature taken up for being drunk and disorderly—but the regular and uniform debauchery has disappeared, and I know of nothing to which to attribute this very agreeable change but the new Public House Act.—I am, sir, your very obedient servant,

JAMES LENNOX,
Superintendent of Police.

No. XXX.—INVERNESS.

From JOHN SUTHERLAND, Esq., Superintendent of Police.

Inverness, 12th June, 1857.

Sir,—The following is the report on the state of crime within the burgh of Inverness for the half-year ending 31st January:—

OFFENCES.

Theft,	16
Falsehood, fraud, and wilful imposition,	2
Assault, &c.	36
Drunken and disorderly conduct,	42
Trand in the sale of butter,	9
Vagrancy,	6
Suspicious circumstances,	3
Contravention of police act and bye-laws,	57
	—171

SENTENCES OF COURT.

Fined and forfeited pledges of money,	125
Sentenced to imprisonment,	11
Remitted, caution, deserted, &c. &c.,	35
	—171

MALES AND FEMALES.

Males (including six boys),	132
Females (including four girls),	39
	—171

INTOXICATED OR SOBER.

Intoxicated when offences were committed,	108
Sober,	63
	—171

PERSONS TRIED IN COURT.

	Males.	Females.	Total.
Tried in August,	24	7	31
" September,	19	6	25
" October,	25	7	32
" November,	31	12	43
" December,	18	3	21
" January,	15	4	19
	132	39	171

FINES RECOVERED.

Recovered in August,	£8 5 0
" September,	7 1 6
" October,	6 19 6
" November,	15 10 6
" December,	4 17 6
" January,	2 9 0
	£45 3 0

'In laying before the Commissioners his fifth half-yearly statement of crime in the burgh, the Superintendent has to state that during the six months ending 31st January last, there has been an increase of 43 on the total number of offences as compared with the previous half-year. This increase is distributed as follows:—In the number of cases involving breaches of the Police Act and By-Laws, there has been an increase of 18; the cases of theft having increased by 4; the cases of assault by 5; and drunken and disorderly cases by 1. There has been a decrease of 1 in the cases of parties guilty of fraud in the sale of butter.

'The Superintendent thinks it proper to state, that for several years past no case of housebreaking has occurred, and the value of the property stolen, although 16 persons have been convicted of theft, has been of trifling amount.

'The Superintendent thinks it proper also to state his belief that the new Public House Act continues to work satisfactorily in keeping down the number of drunk and disorderly cases, and in adding to the quiet of the town. Five innkeepers and spirit-dealers have been convicted during the last six months of breaches of the new Act.

'For a more detailed statement, he begs to refer to the table prefixed. All which is humbly reported by

JOHN SUTHERLAND,
Superintendent of Burgh Police.'

XXXI.—JEDBURGH.

From PROVOST GRAINGER.

British Linen Company Bank, Jedburgh, 12th June, 1857.

SIR,—From my experience in the working of the New Public House Act, I am of opinion that it requires several alterations.

I observe that there is considerably more private drinking in houses than used to be previous to the passing of the Act, particularly on Sundays.

I think the hour of closing respectable houses holding hotel licenses, should be extended to 12 o'clock, instead of 11 o'clock.

I think authority should be given to the Magistrates in each burgh, to authorize the keeping open of hotels for the purpose of holding meetings, balls, concerts, &c., where the hours require extending.

I would shut up all small public-houses at 11 o'clock, as at present. The idea, that a gentleman living in a respectable hotel cannot invite a friend to dinner on Sunday, is absurd.

The meaning of *bona fide* traveller should be properly defined, as there is considerable doubt at the present moment on this point. For instance, are people, walking a distance of 5 or 6 miles to church on a Sunday, to be considered *bona fide* travellers or not?

I can see little difference in the habits of the people since this Act came into force; and I am quite aware of the difficulties the legislature have to encounter in controlling the habits of the people—and I find, make what examples you will, a loop-hole can always be found to procure what drink they require, let your officers be ever so strict.—I am, sir, your most obedient servant,

J. M. GRAINGER,
Provost of Jedburgh.

No. XXXII.—KELSO.

From JOHN MOSCRIF, Esq., Superintendent of Police.

Police Office, Kelso, 5th June, 1857.

SIR,—In regard to your letter, dated 27th May, to me, intimating the wish of the Directors of the League regarding reliable evidence as to the working of the new Public House Act in this town, I may state, in general, that since the Act came into operation here, there has been a decided improvement in the peace and quiet of the town at nights; and especially upon the Sabbath, there is a most manifest difference for the better, and would by this time, no doubt, have been still more so apparent, but for a number of smuggling and drinking toll bars, unlicensed, in the vicinity of the town, which are doing a great deal of mischief, especially on Sabbath, and I may freely state, beyond the power of the police to suppress, belonging to the burgh.

I also think that it would be a great improvement to separate the spirit trade from the grocers' business altogether, and still further restrict the licenses, as tending to improve the morals of the community, and removing temptation out of the way of many who, otherwise, are very materially injured by the many sources of temptation that at present exist of that class of *low spirit shops*.

In conclusion, I decidedly think the new Act a proper step in the right direction, and in my capacity, as a public servant, have no hesitation in stating my conviction that it ought to be upheld in all its integrity.—I am, sir, your most obedt. servant,

JOHN MOSCRIF,
Superintendent of Police.

No. XXXIII.—KILBIRNIE.

From JAMES KNOX, Esq., J. P.

Kilbirnie, 13th June, 1857.

SIR,—I opine, were the Act, generally known by the name of 'The Forbes M'Kenzie Act' properly acted upon in this locality, it would be the means of checking intemperance to a great extent, consequently I would not be favourable to a repeal of that Act, but would support it in all its bearings. When the factory workers are allowed only 10 hours a day to gain their livelihood, the same law may be applied to Licensed Victuallers.

JAMES KNOX, J. P.

No. XXXIV.—KINROSS.

From PETER CLARK, Esq., Superintendent of Police.

SIR,—In reference to your letter, dated 17th inst., I beg to inform you that in this county the new Public Houses Act cannot have any good effects upon the habits of the people, as it has never been practically acted upon; this is the more to be regretted, from the circumstance that some of the public-houses on the borders of this county are in close

proximity to populous manufacturing and mining districts in Fife, where the Act is strictly enforced, and the intemperate portion of the community driven to those houses for the stimulus which they are denied at home; especially on Sundays after a pay, these houses are a nuisance to both counties, when only one has the means of remedy.—I am, sir, your most obedient servant,

PETER CLARK,
Superintendent.

Kinross, 29th April, 1857.

XXXV.—KIRKCALDY.

From PROVOST BEVERIDGE.

Kirkcaldy, 13th June, 1857.

SIR,—I adhere to the testimony I formerly gave as to the beneficial effects of the new Public Houses Act, which, if properly administered by the magistrates, will undoubtedly improve the morals of communities throughout the length and breadth of the land, and any relaxation in its provisions, in my opinion, would be greatly to be deplored.

HENRY BEVERIDGE,
Provost.

From BAILE FLETCHER, Kirkcaldy.

Kirkcaldy, 5th June, 1857.

SIR,—In reply to your question, I beg to state, that I am satisfied that Forbes M'Kenzie's Act has done good; it prevents too early drinking, and too late drinking, and from giving drink to those already intoxicated;—still, I think the Act should be revised, as in my opinion, some of the enactments are an oppression to the publican, and without benefit to the public, such as the separation of groceries from a public-house, and the too stringently keeping Inn-doors shut against strangers after eleven o'clock p.m., and on the Sabbath.—I am, your obdt. servant,

JOSEPH FLETCHER.

From JOHN WHITE, Esq., Sergeant of Police.

Kirkcaldy, 13th June, 1857.

SIR,—I adhere to my former statement, regarding the good effects done to the community, by the shutting of public-houses on Sunday; and have further to state, that from my own observation, and from inquiring in different quarters, I find that the stricter the New Public House Act is enforced, the benefits resulting therefrom are the more apparent, and public-house keepers themselves more respected, where its conditions are obeyed.

JOHN WHITE,
Sergeant of Police

XXXVI.—KIRKCUDBRIGHT.

From PROVOST SHAND.

Kirkcudbright, June 4th, 1857.

SIR,—Although I received your letter on the night of Saturday last, I delayed answering until I learned whether the opinion of the other Magistrates coincided with mine; and we are of opinion, that the New Public-House Act has done much good, and is likely to do still more, on the habits of the people. This we particularly observe on the houses being shut at the early hour of Saturday night, and altogether on Sundays.—I remain, sir, your most obdt. servant,

JOHN S. SHAND,
Provost.

XXXVII.—KIRRIEMUIR.

From G. B. BRAND, Esq., Clerk of Police.

Kirriemuir, 30th April, 1857.

SIR,—So far as my observation extends, the New Public Houses Act continues to work well in this town, and to have a highly beneficial effect on the habits of the people; and that all the more as its provisions are rigidly enforced.—Your obdt. servant,

G. B. BRAND,
Clerk of Police.

No. XXXVIII.—LEITH.

From JAMES GRANT, Esq., Superintendent of Police.

Police Office, Leith, 29th May, 1857.

SIR,—As requested, I submit a few observations and particulars as to the effects of the new Public Houses Act in Leith.

The Act has done good, and it has created evil—while it has diminished drunkenness, and tended to the better observance of the Sabbath, it has brought into existence and fostered illicit trafficking in spirits.

Though drunk people may still be seen staggering about on the Sabbath, parties going to the church are spared the pain of witnessing crowds of men and women, with unsteady gait, making their way from the dram-shops, cursing and swearing as they go to their wretched homes.

On the Sabbaths between 15th May, 1853, and 15th May, 1854—the twelve months immediately before the new Act taking effect—there were 205 cases of drunkenness in the police office, whereas on the corresponding Sabbaths of 1854-5, there were only 81, and in the following year—1855-6, they fell to 61.

Having briefly stated that drunkenness has decreased on the Sabbath, I do not mean to trouble you with any tabular statement, but may mention that the cases of drunkenness, on week days, have fallen since the passing of the new Act 18 per cent., and that the number of retail spirit licenses, of all kinds, within the burgh of Leith, has been reduced 25 per cent. within the same time.

Before the passing of the Act, I stated what I now repeat, that, so far as known to me, there was not a single unlicensed house in Leith where tipping was carried on; but now, in almost every street and lane in the town, there are the so-called temperance hotels and eating-houses, where spirits may be procured; and there being no act to regulate the opening and shutting of such places, they are in many cases kept open nearly all night.

In my opinion, no benefit has been gained by Justices of the Peace and Magistrates being prohibited from granting certificates, authorizing spirits, wines, or exciseable liquors to be drunk or consumed on the premises, where groceries and other provisions are sold to be consumed elsewhere than on the premises. In many instances, since the change of the law has taken place, the same person has a grocery and provision shop in one place, while, in the next door, he has a public-house. Other instances might be given, where formerly a respectable person carried on the trade of a grocer and publican under the same roof, but when he saw that one branch alone of his business could not be carried on to advantage, he abandoned the trade altogether. But what has been the result? A low public-house has been established in the old premises, while a mean grocery store has been opened in the immediate neighbourhood.—I am, sir, your most obt. servant,

JAMES GRANT, *Supt.*

N O. XXXIX.—LESLIE.

From the Magistrates.

Leslie, June 9, 1857.

We, the undersigned, the Magistrates of Leslie, understanding that an effort is being made by certain parties to obtain the repeal of the Forbes M'Kenzie Act, have much pleasure in recording our testimony to the beneficial operation of the said Act. In so far as our observation extends, it has been uniformly productive of great good in the town and neighbourhood. We earnestly hope that, for the sake of the moral and social prosperity of the country, the efforts of the opponents of the Act will be ineffectual.

(Signed) JAMES JOLLIE, *Bailie*.
JAMES BEATTIE, *Bailie*.

N O. XL.—LINLITHGOW.

Excerpt from Police Report.

'The Superintendent has now had the benefit of three years' experience of the Forbes M'Kenzie statute, and he begs to report his opinion that its operation has been attended with very great advantage to the community. He believes that keepers of public houses in the county, generally speaking, endeavour to obey its provisions, and the exceptions are to be found chiefly among the smaller and lower classes of the publicans, who are generally anxious to increase, by any means in their power, the sale of liquor.

'The Superintendent considers that the clauses which enjoin early closing of public houses, prohibiting sales on Sundays, and throwing all licensed houses or premises open to the police, have been of the very greatest benefit. Before the statute came into operation there were a great many

cases of assault and breaches of the peace on Sunday, and now we have very few indeed. The Superintendent has been unable to find that much good has resulted from prohibiting grocers to sell exciseable liquors to be consumed on the premises; he is not at present prepared to say that any harm has resulted from this enactment, but he has strong suspicions that some grocers do sell liquors to be consumed either on their premises, or in their adjoining dwelling houses, to which the police have no right of access.'

REMARKS.—If any alteration is to be made in this statute, I trust that it will be even more stringent than it is at present. For example, Fast-days, and other days set apart for thanksgiving and prayer, are not provided for in the statute, so that the publican is not prohibited from selling on these days. It should also be made imperative on Superintendents and Procurator Fiscals to prosecute all persons who may be complained against. As the statute now stands, it is not compulsory—any one may prosecute; but where will you find a private prosecutor in Scotland? I am officially aware that cases have been reported to Procurator Fiscals in districts where there are no Superintendents, and that they have refused to prosecute, which certainly encourages the publican to sell, and the drunkard to drink. In a county where the statute is strictly enforced, and in a burgh in that county where it is not enforced, people come from the county into that burgh and get what drink they want. I have also known people come from the county where the statute was enforced, a distance of 6 or 7 miles into a burgh where it was not enforced, purchase what they want, and return home. You may see from this, that had the statute been imperative, this would have been out of the power of seller and purchaser; at least if the P. F. did not do his duty, a complaint could then have been presented to the Lord Advocate; under the existing statute it cannot.

ADAM COLQUHOUN.

From ADAM COLQUHOUN, Esq.

Linlithgow, 8th June, 1857.

SIR,—I received your note of the 6th current, and, in answer, beg to say, that my official experience leads me to form a decided opinion that the 'Forbes M'Kenzie Act' has been of very great benefit to the community generally in this county, where the Act is strictly enforced. But its effects in the county are, to a considerable extent, counteracted by the inefficient manner in which it is wrought, or rather by the total neglect of working which it experiences in the burghs of Linlithgow and Queensferry, especially in the former. In these burghs, I have no charge over Police matters,—Your most obedient servant,

ADAM COLQUHOUN.

From FRANCIS HOME, Esq., Sheriff Substitute, Linlithgowshire.

Linlithgow, June 15th, 1857.

SIR,—I had the pleasure of receiving your note of the 6th inst., as to the working of the Forbes M'Kenzie Act in this county. I have referred it to the Superintendent of Police, and he tells me that he has already given you what information he has on the subject. It does not fall much within my knowledge how it works. I do not think that crime, so far as it comes before me, committed in a state of intoxication, has diminished, or that there is less drinking among the mining population of the county in particular. I was much struck, however, in the spring of last

year, when residing for some weeks at Bathgate during the strike, at the quiet and orderly state of matters in that place and its neighbourhood on the Sundays. The *hotel* there in which I lived, was as quiet on these days as a private house, their door being shut, and no one but the family of the innkeeper and myself in the place. I often expressed myself to him how happy he must feel to get thus a quiet day to himself, and to be able to enjoy it with his little family. He admitted it was a far better state of matters than formerly. In Bathgate, as in the county generally, the rules and regulations of the Act are strictly enforced. It is otherwise, I am sorry to say, in the burghs, where, I suspect, the magistrates are afraid of becoming unpopular by rigidly carrying it out, or, perhaps, they find it expensive to prosecute the frequent cases of its infraction. —Believe me, yours truly,

FRANCIS HOME.

XLI.—MID-LOTHIAN.

From ALFRED JOHN LIST, Esq., J. P., Fiscal, and Superintendent of County Police.

24th April, 1857.

SIR,—I am favoured with yours. In reply, I beg to make the few following observations upon the subject you solicit information;—doubtless, whatever I say will be published, and sent forth to the world, to be criticised both by those in favour of the 'Scottish Temperance League,' and its opponents. Be this as it may, your directors wish my opinion—at least so you say in your letter—^{as to the general effects of the new Public House Act upon the habits of the people &c.,} and thus I give it.

1. In most parts of this county, beneficial results have arisen to the community, since the Act has been in operation, in regard to the absence of drunken scenes upon the streets on Sundays.

2. Quiet and regularity at night, in consequence of their houses being closed at an earlier hour than formerly.

3. Less tipping among servants, and wives of the labouring class at grocers' shops, &c., when making their household purchases.

Now, against these benefits or advantages, I think it but right and fair to give what has fallen under my own observation, and come to my knowledge.

1. Owing both to the high price of provisions and whisky, the labouring class have less to spend in that way than they had before the Act came into operation.

2. Parties of workmen, in their shops, now club together on the Saturdays, purchase several bottles of whisky—and in some cases as much as a gallon—take it to two or three of their houses, and have a regular booze most of the Sabbath—this in the presence of wives and families.

3. That unlicensed places have sprung up very numerous in populous towns and villages, is a notorious fact; and that they require more attention—if detections are to be made—than the limited means of a county police establishment can afford, is also a fact; in short, I consider these places fall more under the surveillance of the inland revenue officers than the police.

4. Temperance hotels, oyster shops, and many refreshment rooms, have now become unlicensed places; and I humbly think that, in justice to the fair trader, they should be compelled to have some description of license, and placed under police inspection; in a word, it

has now become quite the order of the day, both by vendor and consumer, how best to evade 'Forbes McKenzie'; and in support of this, I need only quote a short sentence of Captain Smart's report—'164 convictions, and fines amounting to £957 12s for unlicensed traders in one year.'

5. The number of drunkards are not so numerous upon the streets on Sundays, as they were before the Act came into operation. Why? Because they get drunk in their own, or other people's houses—in clubs, as before described; in proof of this I must add, that a few days ago, an active Justice of the Peace, resident in a colliery district, and in a county where the most watchful attention has always been paid to the licensing system by the Justices, told me that 'he considered the Justices had gone far enough in the reduction of public-houses, for he was quite aware that dissipation in private houses was carried on to an alarming extent, and began to show itself in the habits of the young.'

I have now been twenty-five years in the public service in this county; and am enabled to say, that I have seen a *gradual improvement in the habits of the labouring class*, up to the introduction of the 'Forbes McKenzie Act; there might be less drunkenness since the Act has been in operation; but I must confess that I am somewhat sceptical on that point.

I am, nevertheless, still in hopes that the Act will do good, particularly in the separation of the trades; and in my opinion, grocers and victual dealers should be confined *entirely to the sale of eatables, &c.*, and spirit-dealers to wines, spirits, &c.; but with the view of improving the labouring class, educate them, inculcate habits of cleanliness, train up the females to good housewifery, learn them to have comfortable homes, and by these means you will wear them from the use of ardent liquors, more than by legislative enactments.—I am, sir, yours faithfully,

ALFRED JOHN LIST,

J. P., Fiscal, and Supt. of Police, County of Mid-Lothian.

No. XLII.—MONTROSE.

From JAMES BROWNLEE, Esq., Superintendent of Police.

Office of Police, Montrose, 29th May, 1857.

SIR,—Having a few days since completed my annual statistics for the year ending 9th inst., I am enabled to furnish you with the results, which, when compared with the previous year, are in the highest degree satisfactory. During the year ending May, 1856, 104 persons were convicted before the Police Court for assault, and for assault accompanied with a breach of the peace. For the year ending May, 1857, 72 persons were only convicted before the same court, for the above crimes or offences.

I have specially mentioned these as bearing more directly on the subject matter of your communication, because, in nine cases out of ten, it is only when drink has got the mastery that the foregoing are committed. I have therefore no hesitation in stating, that drunkenness has very much decreased within the last twelve months in this burgh, especially amongst the working classes, and that fewer convictions have been recorded in the police books against parties for committing crimes when under the influence of drink, in the last, than in any single year during the last eight; which shows, beyond all doubt, that the community have taken a step in the right direction, and are verging towards a healthier state of existence.

Different causes might be mentioned as conducive to this end, but to none of them am I inclined to attach the same importance as to the restrictions imposed by Forbes McKenzie's Act. Since it became the law of the land, all its enactments have been strictly observed here, and, when any violation has been discovered, the offender has been promptly dealt with by the authorities, all of whom seem resolved to give the Act an impartial trial, and to back out the police in seeing that its requirements are properly observed; and while, in my opinion, it has reduced the number of drunkards, it has, at the same time, rendered extinct that class of publicans who depended on night trade; and it is consistent with my knowledge, that the respectable publican and innkeeper consider Forbes McKenzie's Act as a great blessing bestowed on the trade.

I may also mention, that several parties attempted to evade the Act by selling drink without having a certificate, but by the exercise of a proper vigilance, detection soon followed, and those who escaped abandoned the illicit and precarious trade; so that, at present, I do not think that there is a *shebeena* shop within this burgh.

I beg also to mention, that drinking in private houses is not carried on to any great extent amongst the poorer classes in this town; so that what was dreaded by theorists and alarmists as likely to result from the restrictive enactments of Forbes McKenzie's Act, has not, as yet, been reduced to practice, and I have no reason to believe, ever will, in Montrose.—I am, sir, your obedient servant,

JAMES BROWNLEE,
Superintendent.

No. XLIII.—NAIRN.

From WILLIAM DICK, Esq., *Procurator Fiscal*.

Nairn, 29th May, 1857.

SIR,—In reply to your circular of yesterday's date, I beg to state that, in my opinion, the new Public House Act has made a great improvement on the habits of the people, particularly in the almost entire disappearance of drinking on Sundays. The Act has not been enforced, in this county, with that vigilance and vigour which it would be desirable, but if the duty of doing this was imposed on a proper officer, I am satisfied it would be productive of much further good—I am, sir, your most obdt. servant,

WM. DICK, P.F.

No. XLIV.—NEILSTON.

From PETER LAWERS, MATTHEW ARTHUR, and ALEXANDER COCHRANE, Esquires, *Justices of the Peace*.

We have much pleasure in expressing our unqualified approval of the Forbes McKenzie Act, and in testifying to the beneficial results which have attended it, so far as it has been observed and enforced in this district. We should be very sorry if any attempt to repeal that Act, or lessen the stringency of its provisions, meet with any countenance from the Legislature.

PETER LAWERS, Justice of the Peace.
MATTHEW ARTHUR, do.
ALEX. COCHRANE, do.

XLV.—NEWMILNS.

From GEORGE HADDON, Esq., *Magistrate*.

Newmilns, 18th June, 1857.

SIR,—In answering your circular requesting a statement of the effects of Forbes McKenzie's Act in our place to the present day, I would say, that the good done by said Act still continues to show itself, as formerly reported to you by me in 1855; and, to bring down said report to the 26th May, 1857, it stands thus, that the number of persons taken to the lockup, and those brought before the magistrates in this burgh, for being drunk and disorderly, and other offences committed directly under the influence of intoxication, from the 26th May, 1855, to the 26th May, 1856, were 12; and, from the 26th May, 1856, to the 26th May, 1857, were still fewer—being only 9; so that, as formerly reported to you by me, the year before the Act was in force the number of such persons were 40, thus proving, most strikingly, the good said Act has done for our community.

I may also add, that, in the former report, we had 17 houses licensed to sell spirits, &c., in this parish. On Whitsunday last, their number was reduced to 15—one ceased by death, the other refused license, having been fined twice for violating Forbes McKenzie's Act. These two belonged to this burgh.—I remain, yours, most respectfully,

GEO. HADDON.

No. XLVI.—PAISLEY.

From JOHN ANDERSON, Esq., *Burgh Fiscal*.

Paisley, 20th April, 1857.

SIR,—I duly received your letter of the 17th inst., and in order to enable me to give you some authentic information regarding the operation of the late Public Houses Act upon the habits of the people, I employed a man this morning to examine the Police records, and as soon as he has collected the information I require, I will write you fully on the subject.—I am, sir, your most obdt. servant,

JOHN ANDERSON.

[Up to the date of the publication of these Statistics no further answer has been received.]

From ROBERT BIRD, Esq., *Governor, Paisley Prison*.

Paisley Prison, 16th June, 1857.

From the following table you will see that from 1848 to 1854, being previous to the operation of the Public Houses Act, although the gross number of commitments, as well as the daily average number in custody were on the decrease, the numbers committed for drunkenness were on the increase, and the centesimal proportion of such cases had increased from 33 per cent. in 1848, to 47 per cent. in 1854.

In the years 1855 and 1856, the number of cases of drunkenness had decreased in the latter to 241, being 106 less than the lowest number in the former period, viz., in 1848, and 218 less than the highest number, viz., in 1853; while the centesimal proportion of such cases had decreased in 1856 to 30 per cent., being 17 per cent. less than in 1854.

For the current year, of which three quarters were passed at 31st March last, the number of such cases was still further reduced, viz., to 144 for the three quarters; being at the ratio of 192 for the whole year, which is a further decrease of 49, as compared with 1856.

The average daily number of prisoners, of all classes, in custody for the current year, has been only 69, being a decrease of 28, as compared

with 1855-6; and of 70, or more than one-half, as compared with 1848-9 and 1853-4.

It is not presumed that all this has been accomplished by the operation of the Public Houses Act, but it is worthy of notice, that previous to its operation, although the gross number of commitments were on the decrease, the cases of drunkenness were on the increase, and that so soon as the Act came into operation, the number of drunken cases, as well as the gross commitments, began to decrease. (The increase of persons committed for other offences in 1856, over 1855, was caused by the number of soldiers sent to prison during that period).

Every measure restricting the Liquor Traffic, whether by lessening the number of licensed houses for its sale, or the number of hours and days such houses shall be opened for business, or by an increase of duty enhancing the price, will, I believe, be found to operate beneficially, at least for a time; but I believe the Traffic to be of such a nature that nothing less than Total Prohibition can save us from its effects, and to obtain this I believe it to be the duty of every one to use all legitimate means to induce the legislature to pass a law prohibiting its manufacture and sale.

ROBERT BIRD.

Return of the Commitments to the Prison of Paisley, in the undernoted periods, distinguishing those Cases the direct effects of Intemperance, with the Centesimal Proportion of such Cases; the Total Commitments in each period; and the average Daily Number in Custody:—

Year ending 30th June.	Cases the direct effects of Intemperance.		Intemperate Cases.	Other Offences.	Total Commitments of all Classes.	Centesimal Proportion of Cases the direct effects of Intemperance.	Average Daily Number of all Classes in Custody.
	Assault.	Disorderly.					
1848	161	186	347	690	1037	33.4	145
1849	156	223	379	598	977	38.7	147
1853	161	228	419	518	937	44.9	142
1854	154	209	414	464	878	47.1	121
Total	632	967	1599	2270	3869
Average	158	241	399	567	967	41.2	139
1855	127	120	297	419	716	41.4	102
1856	116	125	241	540	781	30.8	92
Total	243	245	538	959	1497
Average	121½	122½	269	479	748	35.9	97
For the three quarters ended 31st March	57	87	144	278	422	34.9	69

ROBERT BIRD, Governor.

No. XLVII.—PARTICK.

From JAMES MACCOLL, Esq., Superintendent of Police.

Police Office, Partick, 1st May, 1857.

SIR,—In answer to yours of the 17th April last, I beg to state, that I have no complaints in this district relative to the working of the late Public-Houses Act.—I am, sir, your most obt. servant,

JAMES MACCOLL,
Supt. of Police.

XLVIII.—PEEBLES.

From NINIAN NOTMAN, Esq., Superintendent of Police.

County Police Office, Peebles, 20th April, 1857.

SIR,—In answer to your letter of the 17th, I have to remark, that the new Public House Act has operated most beneficially in this county. On Saturday nights and Sabbaths, the utmost quietness prevails, and it is a rare thing to see any person the worse of drink on a Sabbath day; indeed, I can safely say, that there is a decided improvement in that respect among the people in this quarter of the country. There have only been three persons convicted for breach of certificate in this county during the year past.—I am, sir, your obt. servant,

NINIAN NOTMAN, Supt.

No. XLIX.—PERTH.

From Provost IMRIE, Perth.

Perth, 15th June, 1857.

SIR,—I duly received yours of 28th May, and, in reply, beg to say, that the general effects of the new Public Houses Act have been good. There is now less disturbance on the streets, especially on Saturday evenings; very seldom a drunk person to be seen on Sabbath, and fewer cases in the Police Court on Monday morning from the effects of drink, than were before the passing of the Act.—I am, sir, your obt. servant,

WILLIAM IMRIE.

From ANDREW BOYLE, Esq., Superintendent of Police, Perth.

Police Office, Perth, 13th June, 1857.

SIR,—I am favoured with your letter of 27th ult., requesting my opinion, whether favourable or otherwise, as to the general effects of the new Public Houses Act upon the habits of the people, and in answer I beg to say that there can be no doubt that a sensible diminution of crime and drunkenness has taken place here since the passing of the Act. The restricted hours have had a tendency to restrain many from indulging in midnight orgies and Sabbath-breaking propensities. It is a rare sight now for a drunkard to be seen reeling on our streets on Sabbath, while the quiet, peace, and good order pervading our streets

at much earlier hours than formerly, especially on Saturday night and Sunday, is very observable. Contraventions of the Act have been punished, and licenses withdrawn, principally from small-rented houses; several unlicensed parties have also been convicted. Although I may be of opinion that some of the provisions of the Act are rather stringent, I would deprecate any attempt to return to the former state of matters.—I am, sir, your obedt. servant,

ANDREW BOYLE,
Supt. of Police.

L.—PORTOBELLO.

From PROVOST JOHNSTON.

Council Chambers, Portobello, 6th June, 1857.

SIR,—I have to acknowledge your letter of the 28th ultimo, requesting my opinion on the New Public House Act, as to its effect on the habits of the people. I may say, that public decorum is greatly improved, but drinking in private houses is more resorted to.—I am, Sir, your obedient servant,

JAS. JOHNSTON,
Provost.

LI.—RENFREW.

From JAMES DOBBIE, Esq., Superintendent of Police.

Renfrew, 22d April, 1857.

SIR,—I received yours of the 17th inst., and beg to state, that I gave you my opinion, about the month of October, 1855, of Forbes McKenzie's Act, which you will find among the Testimonies of Superintendents of Police, &c., got up by the Directors of the Scottish Temperance League at that time. I have no other testimony to give at present—my opinion in reference to the Act is unchanged.—I am, sir, your very obedient servant,

JAMES DOBBIE.

No. LII.—ROTHESAY.

From JOHN WILSON, Esq., Town Clerk.

County Buildings, Rothesay, 17th June, 1857.

SIR,—The Provost and Magistrates of this burgh have requested me, in reply to your communication of the 28th ult., to state that, in their opinion, 'the general effects of the new Public Houses Act upon the habits of the people' have been most beneficial, resulting in the perceptible diminution of crime, and better preservation of order in the town—more especially on the Sabbaths—the quiet and orderly observance of which, at present contrasts very favourably with the disorder and intemperance which, before the passing of the Act, too often characterized them.

The Magistrates have much pleasure in having an opportunity of expressing their cordial approbation of the general working and effects of the Act in question.—I am, sir, your most obedient servant,

JOHN WILSON,
Town Clerk.

No. LIII.—STEWARTON.

From JAMES FERGUSON, Esq., Notary Public.

SIR,—In answer to your queries I have to state, that Forbes McKenzie's Act is considered by the general public, and by many innkeepers, an excellent law. Its failure is for want of proper surveillance in the Magistracy, and indifference in the people who are disinclined to become informers.

There is, in connection with this Act and lectures on abstinence, much less ardent spirits drunk than formerly.

It only requires the people to press on the Civil Magistrates and the police under their charge, to see the law strictly implemented. Lately, at a general meeting of the Magistracy of Ayrshire, instructions had been issued to the Procurators Fiscal to punish innkeepers for every infraction of the Act.

JAMES FERGUSON,
Notary Public.

From W. MACKIE, Esq., of Meikle-Corsehill, J. P., Stewarton.

SIR,—My opinion of Forbes McKenzie's Act is, that it has done a great deal of good in Stewarton. If the Magistrates living in the town had looked more sharply to their duty, the Act would have done more good; and if the Act is put in force, it is quite sufficient to lessen drunkenness.

W. MACKIE, J. P.

No. LIV.—STONEHAVEN.

From ALEXANDER WEIR, Esq.

Stonehaven, 11th June, 1857.

SIR,—In reply to your favour of the 28th May, I have to say that the general effects of the new Public Houses Act appear to be beneficial, in so far as the checking of drunkenness and rioting is concerned.

Scenes of drunkenness are still to be met with, but are not so frequently as before the Act came into operation.—I am, sir, your obedt. servt.,

ALEX. WEIR.

No. LV.—STRANRAER.

From JOHN HENDERSON, Esq., Superintendent of Police.

Stranraer, 4th May, 1857.

SIR,—In reply to your letter of 17th inst., I beg to inform you that there have been no prosecutions in this county under the new Public Houses Act; but I believe the operation of the Act, especially in country villages, has been beneficial, and since it passed there has been less drunkenness, and fewer breaches of the peace committed in the county.—I am, sir, your most obedt. servant,

JOHN HENDERSON.

From A. BROWN, Esq., of Hillhouse, Justice of Peace.

SIR,—I am sorry I am able to give you so little information as to the operation of Forbes McKenzie's Act. It strikes me, however, that the quantity of ardent spirits consumed in Stewarston is as much now, at all events, as before the passing of the Act. The only good, it has put down somewhat the dram-drinking on Sunday. What should be done in the way of curtailing it, it is difficult to say. In a free country like this, where the inhabitants are under so little restraint, and where they have been in the habit for so long a period using so large a quantity of ardent spirits, it will be very difficult to curtail it.

A. BROWN,
Justice of Peace.

From J. MACALLISTER, Esq., J. P. of Chapelton, Stranraer.

June 2, 1857.

SIR,—My opinion is that the Forbes McKenzie Act has not produced the benefit it might have done had it been less stringent in some of its provisions, which cause it to be unpopular, and, therefore, more frequently and easily evaded. I am afraid there is as much whisky drunk, in this district, and as many drunkards in it, as though the Act did not exist.

I conceive that the hour of supplying spirits in hotels and public-houses might, with advantage, be extended from 11 to half-past 11, or quarter to 12 o'clock, and that, on Sundays, such places might be opened from 1 to 2, and from 4 to 6 o'clock p.m.; but on the other hand I consider 9, or even 10 o'clock in the morning, quiet early enough to commence supplying spirits for the day, though I am aware that, in the neighbourhood of cattle markets, there is a wish for them at an earlier hour.

I would venture to suggest, that in any alterations of the Act, there should be a provision that master tradesmen, and contractors, employing journeymen and labourers, should not be permitted to obtain publicans' licenses, and, indeed, my opinion is that such persons ought not to be permitted to pay their men in public-houses at all. I speak from my own knowledge when I lately stated to you, that workmen are in a manner compelled to drink when their wages are either paid in their employers', or any other public-house.

I may now mention that from various information I have received, I am convinced that gallons of whisky may be obtained in Ayr, and other towns in this county on Sundays, in the *kitchens* of public-houses; and that there is also much more whisky consumed in private houses on that day than before the passing of the Act.

J. MACALLISTER, J. P.

MINISTERIAL, MISSIONARY, SABBATH SCHOOL, AND EMPLOYERS.

No. LVI.—EDINBURGH.

We insert the following in this place as embodying the feeling of the Edinburgh Clergy, of nearly all denominations, relative to the Public House Act:—

MEMORIAL presented to the Lord Provost and Magistrates of the City of Edinburgh, 27th April, 1857, signed by 64 Clergymen, expressing their highest approval of the New Public-House Act, and praying that its provisions be more rigidly carried out.

Unto the Lord Provost and Magistrates of the City of Edinburgh.

The Memorial of the undersigned Ministers of the Gospel in Edinburgh,

RESPECTFULLY SHEWETH,

THAT drunkenness is not only a sin in the sight of God, and eternally ruinous to all who are the victims of it, but undeniably the principal external cause of a vast amount of all the disease, poverty, irreligion, vice, and crime which are to be found in the midst of us.

That while your Memorialists have observed with the greatest satisfaction the benefits resulting from the New Public-House Act in diminishing the amount of drunkenness and crime, and in producing a degree of order and quiet, especially on the Lord's day, which did not formerly exist; they nevertheless cannot shut their eyes to the fact, that drunkenness, with its attendant and consequent evils, is still painfully prevalent in the midst of us, and this is owing, to at least a very great extent, to the numerous facilities for obtaining strong drink, which the existence of so many places licensed for the sale of intoxicating liquor affords.

That your Memorialists are decidedly of opinion that the number of places in the city, licensed as aforesaid, is excessive, and out of all proportion to the legitimate wants of the community; and in most cases injurious, and ought to be reduced in number to the lowest possible point; and not only so, but restricted in regard to the hours during which they may be open to the shortest period allowed by the aforesaid Act.

Your Memorialists would therefore respectfully, but earnestly, urge your Honours not only to refuse licenses to all new applicants, but to endeavour to reduce the number of public-houses to the very lowest limit possible; and not only so, but to restrict them in regard to the hours during which they may be open for the sale of intoxicating drinks to the shortest period allowed by the aforesaid New Public-House Act. And your Memorialists will ever pray.

(Signed by)

JAMES BEGG, D.D., Alrick Hill
JOHN BROWN, D.D., Arthur Lodge

WILLIAM CUNNINGHAM, D.D., 17 Salisbury Road
 FRANCIS GILLIES, 17 Dean Terrace
 W. M. HETHERINGTON, D.D., 47 Minto Street
 ALEXANDER TOP, Minister, 61 Minto Street
 THOMAS STEVENSON, Minister, 17 West Preston Street
 CHARLES J. BROWN, Minister, 39 George Square
 DAVID ARNOTT, D.D., 38 George Square
 ALEXANDER BLACK, D.D., 16 Claremont Crescent
 THOMAS J. CRAWFORD, D.D., 13 Great King Street
 WILLIAM ROBERTSON, 12 Drummond Place
 ROBERT GORDON, Minister, 14 Northumberland Street
 JOHN BONAR, 17 York Place
 WILLIAM GLOVER, D.D., 8 Forth Street
 A. MOODY STUART, 43 Queen Street
 ROBERT NISBET, D.D., 19 Lyndoch Place
 GEORGE SMITH, D.D., 4 Randolph Cliff
 H. WELLWOOD MONCRIEFF, Esq., 9 Alva Street
 THOMAS BROWN, 8 Comely Bank
 HENRY GREY, D.D., 5 East Claremont Street
 G. R. DAVIDSON, 17 Greenisle Place
 P. DAVIDSON, 11 Dean Street
 THOMAS FINDLAYSON, 6 Morny Place
 J. BIRSMYRE, D.D., 4 Comely Bank
 ALEXANDER WALLACE, 46 Gilmore Place
 R. FERGUSON, 39 Gilmore Place
 WILLIAM BRUCE, 12 Gilmore Place
 DAVID CROOM, 1 Upper Gilmore Place
 DAVID HENDERSON, F.E.S., 1 Bruntsfield Place
 R. W. MACGOWAN, Banner Villa, Morningdale
 THOMAS ADDIS, Morningdale
 WILLIAM REID, Merchiston Park
 JAMES H. WILSON, Fountain Bridge
 JAMES BUCHANAN, 51 Lauriston Place
 WILLIAM CHAMBERS, Minister, 102 Lauriston Place
 THOMAS MACLAUGHLAN, 104 Lauriston Place
 JOHN PAUL, Minister, St. Cuthberts, 18 George Square
 W. K. TWEEDIE, 15 George Square
 WILLIAM PEDDIE, D.D., 37 George Square
 JOHN FRENCH, D.D., 30 Buccleuch Place
 DANIEL MACFIE, 24 Bankhall Street
 ROBERT GEMMELL, Bankhall Street
 H. S. JOSEPH, 5 Drummond Street
 WILLIAM BALFOUR, 3 St. John's Hill
 WILLIAM J. COX, 32 Bankhall Street
 JAMES ROBERTSON, Grange Cottage, Newington
 THOMAS GUTHRIE, D.D., 1 Salisbury Road
 GEORGE JOHNSTON, D.D., 6 Minto Street
 THOMAS T. WILSON, 5 Luton Place
 R. DICK DUNCAN, 8 Bruntsfield Place
 D. T. K. DRUMMOND, Montpelier
 WILLIAM HANNA, D.D., 4 Castle Terrace
 MARWICK NICHOLSON, 3 Regent Terrace
 JOHN HUNTER, D.D., 15 Regent Terrace
 WILLIAM MUIR, D.D., 15 Saxe Colburgh Place
 JOHN BRUCE, D.D., St. Andrew's Free Church
 JAMES BANNERMAN, D.D., 7 Clarendon Crescent
 ROBERT S. CANDLISH, D.D., 4 South Charlotte Street
 ARCHIBALD BROWN, Adam Square
 WILLIAM NISBET, Minister, Free Canongate
 JAMES GARDNER, Argyle Square
 JAMES WRIGHT, Minister of Lauriston Church
 WILLIAM TASKER, Gilmore Place

The following expresses the sentiments of the Edinburgh City Missionaries, in reference to the Public Houses Act:—

MEMORIAL from Missionaries (29) presented at same time as the foregoing, and for same object.

To the Right Hon. the Lord Provost and Magistrates of the City of Edinburgh.

The Memorial of the undersigned Missionaries in Edinburgh.

HUMBLY SKEWETH,

That intemperance is one of the most formidable obstacles to every good work, and one of the most prolific sources of every evil which your Memorialists have to encounter in their daily efforts to save souls from death.

That while your Memorialists feel deeply grateful for the many benefits conferred on Society at large, and more particularly on the working-classes, by the new Public House Act, they feel constrained, at the same time, to express their conviction that the number of places licensed for the sale of intoxicating liquors is greatly in excess of the real wants of the community, and that, by this and other means, the provocations of intemperance are multiplied to a very injurious extent.

May it therefore please your honours to reduce to the lowest limit possible the number of public-houses in the City, and to restrict the hours during which they may be open to the shortest period allowed by the aforesaid Act.

(Signed by)

ALEX. MILLER, Superintendent of City Mission, 6 York Place
 GEORGE CLAY, 18 Meadow Place
 JOHN C. ORR, 33 Parkside Street
 WM. FORDYCE, 35 Howe Street
 WM. SEIVEWRIGHT, 26 Carnegie Street
 ROBERT MARTIN, 7 West Nicolson Street
 ALEX. CHISHOLM, 3 Davis Street
 JOHN D. H. PORTEOUS, 2 Galloways Entry, Canongate
 JAMES KERR, 3 Shrub Place
 CHAS. CONNER, 27 Parkside Street
 CUMBERLAND HILL, 1 Bedford Street
 NEIL MACINTYRE, Sciennes Hill
 WM. MITCHELL, Beaumont Place
 HENRY HETHERTON, 21 Salisbury Street
 WILLIAM CRAWFORD, 21 Carnegie Street
 JOHN FERRIE, 10 Brighton Street
 JAMES ANDERSON, 3 Portland Place
 ROBERT MACINLAY, 77 Cumberland Street
 JOHN BLUMESREICH, 2 Greyfriars Place
 THOS. BROUGH, Croft-on-Rich Cottage
 JAMES PEDDIE, 10 Danbar Street
 JAMES URQUHART, 10 Nicolson Street
 JOHN MARRON, Athol Lane
 JAMES GRAY, 28 Dean Street
 WILLIAM CURRIE, 10 Grange Place
 CHAS. MACLAUGHLAN, 3 Main Point
 ARCHD. SINCLAIR, 5 Archibald Place
 JAMES BENNET, 6 Saunders Street
 ALEX. FAIRGRIEVE, 6 Canongate

No. LVII.—From 95 Ministers in GLASGOW.

We, the undersigned, have much pleasure in testifying to the great good resulting from the Forbes Mackenzie Act in this city.

Since its enactment, drunkenness and crime have considerably diminished, as shown by the Reports of James Smart, Esq., Superintendent of Police; and through its enforcement, we now seldom observe a drunk or intoxicated person on the streets during the Sabbath.

Believing that this Act is calculated to effect much good wherever properly put into execution, we would seriously deprecate the least alteration in any of its provisions, otherwise than having its spirit extended, and more fully and rigorously carried out and enforced.

Anderson, William, LL.D.
 Aikman, J. Logan, F.R.S.E. Scot.
 Adam, James
 Alexander, Jacob
 Arnot, William
 Brown, David, D.D.
 Burgess, William, A.M.
 Blyth, George
 Bremner, Robert, A.M.
 Barr, Andrew A.
 Cochran, Matthew
 Cuthbert, Alexander, A.M.
 Cowan, William
 Culp, Thomas
 Crow, Robert
 Calderwood, Henry
 Cunningham, Alexander
 Duncan, Walter
 Doran, William
 Eadie, J., D.D., LL.D., Prof. of Theology
 Forbes, John, D.D., LL.D.
 Fyfe, A. Grant
 Finlay, James
 Ferguson, Fergus, B.A.
 Gillan, Robert, D.D.
 Gash, Robert
 Gordon, James
 Gibson, James, Professor of Theology and Church History, Free Church College
 Hill, Alex., D.D., Professor of Divinity
 Hay, John
 Henderson, W. D.
 Henderson, Thomas
 Jeffrey, George
 Jeffrey, Robert T., M.D.
 Johnston, John B.
 Johnston, Andrew R.
 Johnston, David
 Ker, John, A.M.
 Knox, James, M.A.
 Labret, Andrew
 Lorimer, John G., D.D.
 Macfarlane, John, LL.D.
 Morton, George
 Macgregor, Duncan, M.A.
 Murray, Matthew
 Moss, Thomas
 Muir, James

Mackenzie, John
 McGill, Hamilton M.
 Maclellan, John R.
 Mitchell, James
 Mitchell, David
 Maclean, Allan
 Milne, William
 Mason, James
 Macleod, Alexander
 Mathew, Peter
 McDermid, John
 McCosh, James
 McEwan, David, A.M.
 McDougall, Hugh
 Menzies, David, A.M.
 Middleton, G. Marshall
 McCulloch, A. K.
 Maclean, Charles Stuart
 Macdonald, Archibald
 Napier, Peter, D.D.
 Nevill, Robert
 Paterson, Nathaniel, D.D.
 Pollock, Robert
 Paul, Robert
 Paterson, H. S.
 Parker, A. B.
 Paterson, Alexander S., D.D.
 Paton, Robert
 Robertson, James, D.D.
 Russell, David
 Raleigh, Alexander
 Rattray, Alexander
 Roxburgh, John, D.D.
 Rendelman, David, D.D.
 Robson, John, D.D.
 Symington, William, D.D.
 Ritchie, George, M.A.
 Scott, George
 Rison, John
 Spiers, Alexander
 Stappan, George
 Scott, William
 Troup, Charles
 Thompson, John M.
 Williams, John
 Wier, Robert
 Wilson, Alexander
 Yule, Robert

No. LVIII.—ABERDEEN.

From the MINISTERS of Aberdeen.

Aberdeen, 5th June, 1857.

I HAVE much pleasure in giving my testimony in favour of the Forbes Mackenzie Act.

Since that Act came into operation, very little Sabbath drunkenness is seen in our streets, and the various Police reports in this city show a decrease both in committals and in the number of individuals charged with drunkenness.

Were the Act more efficiently carried out than it has been, I believe the results would be even more apparent.

I would sincerely deplore the success of any movement having for its object the repeal of this Act, or which contemplated material alterations on any of its provisions.

(Signed by)

D. M'TAGGART, D.D., Minister of Greyfriars' Parish.
 CHARLES SKENE, Minister of John Knox's Church.
 J. CALDER M'PHAIL, Minister, Free East Church.
 ALEXANDER SPENCE, Minister, Free St Clement's.
 JOHN STEPHEN, Minister, Free John Knox's.
 W.M. PRIMROSE, Minister, Melville Church.
 CHARLES ROSS, Minister, Free Bon Accord.
 HUGH M'KENZIE, Minister, Free Gaelic.
 ROBERT FORBES, Free Woodside Church.
 ALFRED EBERSHEIM, Ph. D., Old Aberdeen.
 WALTER M'GILLIVRAY, D.D., Free Gilcomston.
 THOMAS BROWN, Gallowgate Mission.
 JOHN R. RITCHIE, Charlotte-street U. P. Church.
 ANDREW DICKIE, St Paul-street U. P. Church.
 J. C. BROWN, Belmont-street U. P. Church.
 JOHN THOMSON, Blackfriars-street.
 JAMES H. WILSON, Albion-street Mission.
 ALEXANDER ANDERSON, George-street.
 FERDUS FERGUSON, St Paul-street.
 WILLIAM BALES, Longacre Chapel.
 R. JONES, Incumbent of St James' Episcopal Chapel.
 ALEXANDER LAING, Gilcomston Mission Chapel.
 HUGH HART, Zion Chapel.

Who adds, in addition to his signature—Long may this Act exist, and assiduously be enforced.

Aberdeen, June 22, 1857.

I HAVE much pleasure in giving my testimony in favour of the Forbes M'Kenzie Act.

Were the Act more efficiently carried out than it has been, I believe the results would be even more apparent.

I would sincerely deplore the success of any movement having for its object the repeal of this Act, or which contemplated material alterations on any of its provisions.

THOMAS DEWAR, Minister,
 South Parish.

I believe that Forbes M'Kenzie's Act has done good. I would sincerely deplore the success of any movement having for its object the repeal of this Act, or which contemplated material alterations on any of its provisions.

DAVID WALLACE, Minister,
 Frederick Street Congregational Chapel.

From Rev. DAVID ARTHUR, *Aberdeen.*

SIR,—I believe that the operation of the Forbes M'Kenzie Act has tended to promote the sobriety of the people, and being of opinion that, were it more efficiently carried out than it has been, the results would be still more favourable, I would sincerely deplore the success of any movement, having for its object either the repeal of the Act, or the material modification of any of its provisions.

DAVID ARTHUR,

Minister George Street Cong. Chapel.

Aberdeen, June 11, 1857.

From ALEX. D. DAVIDSON, D.D., *Minister, Free West Church.*

Aberdeen, 5th June, 1857.

DEAR SIR,—I scarcely feel myself warranted to sign the document you sent to me, because I cannot speak, *from personal observation*, of the results of the Forbes M'Kenzie Act. But, from all that I have heard and read upon the subject, I am firmly convinced that the Act has been most beneficial; and I would deeply deplore any material alteration of its provisions.—I am, yours faithfully,

ALEXANDER D. DAVIDSON.

From the Rev. Dr MURRAY, *Aberdeen.*

Aberdeen, 5th June, 1857.

I BELIEVE the Forbes M'Kenzie Act has operated very beneficially for the purposes for which it was enacted, and, especially, in diminishing Sabbath drunkenness and desecration; and I should deeply deplore the repeal of this salutary Act, and I trust that the Legislature will strenuously resist all the attempts which interested parties may make to obtain its repeal, or the introduction of any material alterations into its provisions.

JOHN MURRAY, D.D.,

Minister of Free North Church.

From Rev. JOHN STEPHEN, *Minister, Free John Knox Church.*

Rosemond Place, June 5, 1857.

DEAR SIR,—I have signed the testimony in favour of Forbes M'Kenzie's Act, on the ground of its general truth and correctness. I feel, however, that the Act has not had full justice done to it, save during the first year of its operation, when the town's officers looked very well into violations of it by night as by day. Gradually, however, the vigilance ceased, and, as was to be expected, the evils complained of began to reappear. They disappear occasionally even now. Were the Act faithfully executed, the results would be, quiet on our streets by night as by day; and this the publicans feel, and hence their application to members.

Permit me to add, that though testimonies and statistics are useful, nothing appears to carry such weight with men in power as personal application, and specially on the part of men that can vote them in or out.—I remain, dear sir, yours very truly,

JOHN STEPHEN,

No. LIX.—BOWDEN.

From Rev. JAMES ALLARDYCE.

Bowden Manse, 10th June, 1857.

I BELIEVE the Act, known by the name of 'Forbes M'Kenzie's Act,' to have been of great benefit to Scotland, and that its repeal would be very detrimental to morality. I sincerely trust, therefore, that the efforts which are being made, to obtain that repeal, will not be successful.

JAMES ALLARDYCE,

Minister of Bowden.

No. LX.—BUCKHAVEN.

From the SABBATH SCHOOL TEACHERS.

Buckhaven, 18th June, 1857.

WE, the undersigned Sabbath School Teachers, do very highly approve of the Forbes Mackenzie Act, and would deprecate any alterations unless it were for the further shortening of the Public House hours, and the curtailing of Licenses.

(Signed)

THOMAS IRELAND.
WILLIAM LAWRIE.
WILLIAM WALLACE.
ALEXANDER PATRICK.
ROBERT GREIG.
WILLIAM GREIG.

No. LXI.—CROSSHILL.

From Rev. JOHN M'LENNAN.

Crosshill, 8th June, 1857.

DEAR SIR,—You request me to give my testimony as to the working of the Forbes Mackenzie Act. Nothing will afford me greater pleasure, as I consider it the best enacted in these her Majesty's realms—bearing upon the morals of the people—for many a year. All that I wish for is, that it had fair play, and that her Majesty's officials—the police—would enforce it. It is not the fault of the Act that it does not do so much good as is desired. It is impossible to say how much more good it might do, if only it were more thoroughly enforced. When I came here about two years ago, all and sundry marched into the public houses. I have seen them do so often, without any shame or diffidence. But, since the Teetotal Society sprung up, the change is great. If any enter now, it is by stealth. Although the public houses are not afraid of the policeman any more than before, yet they fear our members. And what is the result? Drunkenness no longer disgraces our Sabbaths,—

'Still is the morning of that hallowed day;'

Yea, and the whole of the day. Not that all selling is stopped. Bottles are smuggled out, and those determined to debauch the Sabbath, and brutify themselves, are accommodated by the most unscrupulous and un-

principled of the publicans. But still, the amount of Sabbath drinking is materially suspended, through the stricter observance of the Forbes Mackenzie Act. Aye, and if it had not been so, the licensed victuallers in Crosshill would not have raised such a hue and cry against it.

My candid testimony, as a minister of God's word, is, that it has done material good in this village, and that it needs only be more faithfully followed up by the police to do vastly more.—I remain, dear sir, yours truly,

JOHN McLENNAN.

No. LXII.—CUPAR.

From Rev. JAMES COCHRANE.

DEAR SIR,—I have read the letter of Mr. Adamson, our Superintendent of Police, and beg to corroborate its statements in every particular. Sunday, and even private drinking, has diminished here to a great extent; and the result has been that during the night, and on Sabbaths, there is the most entire peace and quiet. I attribute this favourable change to the Forbes Mackenzie Act. If the public-houses were still further reduced in number, and some means devised for checking excessive drinking on market days, on the part of farm servants and others, the most beneficial consequences would follow.—I am, yours truly,

JAMES COCHRANE,
Minister.

Manse of Cupar, June 4, 1857.

No. LXIII.—DALKEITH.

From the MINISTERS &c. of Dalkeith.

WE, whose names are undersigned, have much pleasure in bearing testimony in favour of the beneficial working of the Forbes Mackenzie Act in this place, both as regards the orderly condition of the streets during the whole of the Lord's-day, and also after the shutting of the public-houses at night, especially on Saturdays.

It is our profound conviction that the Act has operated most beneficially in the way of diminishing temptations to intemperance, and its attendant evils; and we would consider its repeal as a serious social calamity.

Dalkeith, June 15th, 1857.

ROBT. SCOTT MONCRIEFF, J. P. for Midlothian.
ROBERT WRIGHT, Minister of East Parish.
ALEX. PATERSON, Inspector of Poor.
JOHN LUCAS, M.D., Parochial Medical Officer.
JOSEPH BROWN, D.D., Minister of the Gospel.
DUNCAN MACINTOSH, Minister of the Gospel.
JNO. MACFARLANE, D.D., Minister of Free Church.
JOHN MARSHALL, Governor of Poorhouse.
JOHN HAMILTON, Missionary.
JAMES RENNIE, Minister.
JOHN ANDERSON, Minister of West Parish.
W. BARRIE, Rector of the Grammar School, Dalkeith.
A. T. GOWAN, Minister of the Gospel.

No. LXIV.—DUNBLANE.

From Rev. JAMES BOE.

The Manse, Dunblane, 12th June, 1857.

HAVING been asked to state my opinion of the Forbes Mackenzie Act, I have no hesitation in expressing my hearty approval of it as a most beneficial measure which has been productive of much good, and contributed in no small degree, and in various ways, to the comfort and peace of numberless families. Outward morality has undoubtedly been promoted by it, and I should hope also pure and undefiled religion. Like other Acts it may have been abused; but in itself it is good and salutary, and I should be sorry, indeed, were the Act repealed, or were the stringency of its provisions in any material degree modified or relaxed.

JAMES BOE,
Minister of Dunblane.

From Rev. WILLIAM BLAIR, M.A., U.P. Church, Dunblane.

I HEREBY testify my high approval of the Act for the better regulation of the Public-Houses, commonly called the Forbes Mackenzie Act. I fully believe in the necessity of using Parliamentary interference to stem the deadly tide of drunkenness. I am myself a teetotaler, and shall endeavour, as far as I can, to use my influence to induce others to abstain. But while I would employ moral suasion for the public, I would, at the same time, have legal suasion for the publican. I rejoice in the past success of the temperance movement in this country; but from any experience I have had, I am satisfied that the drinking shops will continue to sell drink as long as they continue open, and, therefore, the way to stop the sale, is to stop the shop altogether. About a year ago, some Roman Catholic priests at Dingwall were poisoned with monkshood—an ugly root that grows in the garden. Immediately afterwards, some decent persons ordered the root to be plucked up and thrown over their garden walls. We should like well to have an extension of the Public-House Act, to have these shops plucked up and flung beyond the boundary wall of civilization. I am sure the clause relating to the Sabbath has done great good to many poor drinkers, besides the indirect good that it has done to those who drink none, in extirpating the roots of bitterness and strife and noise that formerly disgraced a Scottish Sabbath. I desire to give my vote for the perpetuity of the Forbes Mackenzie Act, till better things are ready.

WILLIAM BLAIR, M.A.,
United Presbyterian Minister.

From Rev. HENRY MALCOLM, Parsonage, Dunblane.

SIR,—I have had but very little personal experience in the working of what is called the Forbes Mackenzie Act; but I feel so satisfied with the representations made, both by persons more qualified to judge than myself, and by printed documents which I have read, that I trust nothing may be done by the legislature, in any way, to impair its usefulness.

Some inconveniences may be felt by persons to whom the Act is not intended to apply; but, I trust, they will not allow their personal feel-

ings or those little inconveniences to be a cause wherefore they should seek to weaken this most necessary and benevolent measure.—I am, sir, your obedt. servant,

HENRY MALCOLM.

Parsonage, Dunblane, June 10, 1857.

No. LXV.—DYSART.

From Rev. WILLIAM MUIR.

I AM of opinion that the Forbes Mackenzie Act has been productive of much good, and would regret the relaxing of its enactments.

WM. MUIR,
Minister of Dysart.

Dysart, 12th June, 1857.

From Rev. N. M. L. WALKER, Dysart.

Dysart, June 12, 1857.

I HAVE the greatest confidence in giving my opinion in regard to the operation of the Forbes Mackenzie Act in the town in which I live. It has been productive of the most excellent results.

Before it was put in force it was not at all an uncommon thing for people to be seen going about the streets in a state of intoxication on the Sabbath. Now we are entirely free from such discreditable spectacles.

There being a public-house immediately opposite my church, I had often occasion to notice the bad effects of allowing to the whisky seller a liberty permitted to no other tradesman in the town. On Sabbath evenings young men and young women who had been out walking together, found their way, not unfrequently, into this place—and it was most offensive to the feelings of all right thinking people among us, to see efforts made for the improvement of the young so shamelessly slighted by an agency so demoralizing.

I believe that a great deal of what is said about private drinking is mere hypocrisy and pretence. The good effects of the Act are open and palpable—the evil effects are very much imaginary. The religion, morality, and the comfort of this place, are largely indebted to the passing of the Forbes Mackenzie Bill.

N. M. L. WALKER,
Minister of Free Church.

No. LXVI.—KILBIRNIE.

From Rev. JOHN ORR.

I AM fully persuaded that 'Forbes Mackenzie's Act' has already been of great benefit to the people of Scotland. It has benefited the public and the publicans—the former, by restricting their time for drinking to proper hours during the ordinary days of the week, and preventing them from purchasing intoxicating liquors on the Lord's-day. No doubt parties, if disposed, may purchase and consume drink in their own houses on the Lord's-day; and, to some extent, this is certainly done.

But it is wise that Sabbath desecration, by the sale of intoxicating drink, and its consumption in public-houses is not now sanctioned by law—and, so far as my observation has extended, there has been less drinking, and more outward decency of behaviour amongst the working classes on the Lord's-day since the passing of this Act than previously. Were the law more rigidly enforced, it would do still greater good.

Publicans should be thankful for an Act that limits the time of their attendance on their business to reasonable hours, and secures for them and their families the entire day of holy rest. They may now, much better than formerly, attend to their own and their children's religious interests; and whilst, in some measure, prevented from doing evil, they are restrained, in the same measure, from doing themselves an injury. Hoping that the law may be carried still more stringently into effect, I remain,

JOHN ORR,
Minister of Kilbirnie.

From Rev. SAMUEL SPENCE, Kilbirnie.
Kilbirnie Free Church Manse,
June 10th, 1857.

SIR,—I have no hesitation in stating that, in my opinion, the Act known as Forbes Mackenzie's Act, has been most beneficial to the community, and that still greater benefits would result if its regulations were everywhere faithfully enforced.—I am, yours sincerely,

SAMUEL SPENCE.

From Rev. JAMES FERGUSON, Kilbirnie.

BEING requested, as a minister of the gospel, to bear testimony for or against the Public House Act, commonly called Forbes Mackenzie Act, I cheerfully give my testimony in favour of it, and the principle of it, in all its integrity, whilst I protest against either the relaxation or repeal of it. Indeed, I should esteem it an improvement were all places licensed to sell intoxicating liquors closed at 10 o'clock in the evening, and all persons or parties found drinking on the premises at illegal hours fined, as well as the sellers; that the hands of the latter might be strengthened in giving effect to the law, and that the community might be more effectually protected against the drunk and disorderly.

JAMES FERGUSON,
Kilbirnie, 12th June, 1857. Minister.

No. LXVII.—KILMARNOCK.

From the MINISTERS of Kilmarnock.

WE, the undersigned Ministers of the Gospel, resident in Kilmarnock, hereby record our opinion, founded upon observation or report, or both, that the New Public Houses Act, in as far as it has been carried out here, has been productive of good results to the community. We deprecate any interference with the stringency of the Act as it at present stands on the statute book of the country, and would greatly deplore its utter repeal.

David Landsborough, Minister.
Alex. Hamilton, Minister.
James Aitken, Minister.
John Graham, Minister.
Thomas Main, Minister.

Thomas Ramage, Minister.
John Symington, Minister.
John Campbell, Minister.
David T. Jamieson, Minister.
William Young, Minister.

No. LXVIII.—KILWINNING.

From REVS. WILLIAM PINKERTON and GEORGE STEVENSON.

I AM very glad to bear my testimony to the great good which the Act, commonly called 'the Forbes M'Kenzie Act,' has done in this place and elsewhere; and should be very sorry to hear of any attempt to modify or repeal that Act.

I have every reason to believe that in this place the Act is not enforced.

WILLIAM PINKERTON,
Minister of the Free Church, Kilwinning.

In the preceding declaration I fully and cordially concur.

GEORGE STEVENSON,
Original Secession Minister.

From Dr ROBERT CRAIG.

Kilwinning, 12th June, 1857.

In regard to the operation of the Act for the better regulation of public-houses, called Forbes M'Kenzie's Act, I have no hesitation in stating it as my opinion, that its effects have been, on the whole, beneficial to the community. I have never known any real hardship, or even inconvenience arise from it, while its effect in diminishing night and Sunday drinking is very evident, notwithstanding that it is evaded by numbers in the trade to a very great extent.

ROBERT CRAIG,
Surgeon.

No. LXIX.—KIRKCALDY.

From REV. M. J. BRYDEN.

The Manse of Kirkcaldy, 13th June, 1857.

SIR,—I have no hesitation whatever in stating it to be my deliberate and strong conviction that Forbes Mackenzie's Act, for the suppression of intemperance, has been a great boon to the country. To my knowledge, it has greatly contributed to the sobering of the people of this parish, and the better observance of the Sabbath-day, and I should regard any effort toward its abolition as a step in the wrong direction, and likely to lead to evils of which we neither know nor can tell the nature or the number.

M. J. BRYDEN,
Minister of Kirkcaldy.

From REV. JAMES BLACK, Kirkcaldy.

Dunnikier Manse, Kirkcaldy, June 15th, 1857.

DEAR SIR,—The restrictions imposed on the sale of intoxicating drinks by the legislative measure commonly known as 'Forbes Mackenzie's Act,' I consider to be *warrantable* and *necessary*. Society has its rights as well as individuals; but it has been proved that intoxicating drink is, in this country, the most prolific immediate

cause of crime, pauperism, insanity, and disease. Although at the expense of a certain abridgment of personal freedom, it is necessary, for the public safety, that an agent so deleterious should be put under restraint.

I am able to say that I have never known any case of real hardship arising from the enactment in question; but its beneficial results are so apparent, that I would consider it warrantable to try the effects of still further legislative interference and restriction.—I am, dear sir, yours truly,

JAMES BLACK.

From Rev. JOHN ALEXANDER, Kirkcaldy.

Free Church Manse, Kirkcaldy, 13th June, 1857.

I TESTIFY with pleasure to what I regard as beneficial effects of the operation of the new Public Houses Act (Scotland). Previously to its passing, I was often annoyed and distressed by meeting and seeing drunk men on the street on the Lord's-day. I sometimes took occasion to advert in the pulpit to what I had seen on my way to the house of God of the melancholy effects of drinking. A great improvement in this respect has now taken place. I do not now witness the painful and disgraceful scenes that too frequently came under my observation formerly.

JOHN ALEXANDER,
Minister.

From REV. CHARLES JAMES ONCHEN, Pathhead.

Pathhead Manse, Kirkcaldy, 12th June, 1857.

SIR,—I approve of the Act of Forbes M'Kenzie, and have no hesitation in stating that, so far as its working has come under my observation, it is attended with the best results.

CHARLES JAMES ONCHEN.

From REV. WILLIAM FLEMING, Kirkcaldy.

U. P. Manse, Kirkcaldy, June 15th, 1857.

I HAVE great pleasure in bearing testimony to the beneficial operation of Forbes Mackenzie's Act. It appears to me, that the very existence of such an enactment has served to direct public attention to the dangerous nature of the traffic in intoxicating drinks, and is gradually preparing the community for its total suppression; and it is all but universally acknowledged that the *actual* working of the Act has materially diminished drinking practices, with their attendant evils. This is patent to every impartial observer, especially on Sabbath; and, in view of such results, I would not only deprecate any relaxation in the provisions of the Act, but earnestly desire to see it more stringently enforced.

WILLIAM FLEMING,
Minister.

From REV. J. R. SIMPSON, Abbotshall, Kirkcaldy.

I ESTEEM it a privilege to be permitted to record my high opinion of the new Public House Act for Scotland; and from what I have known

of its working in certain quarters, have no hesitation in stating that, wherever its provisions have been faithfully executed, the greatest social blessings have accrued to the communities of the respective districts. If there be towns, as there doubtless are, where the Act is a practical failure, the cause is mainly owing to the inefficiency of the local police, who, from the statements of some of their number, are subjected to the strongest temptations to connive at the daily infraction of the law, and who, in many instances, alas! from the confessions of confirmed drunkards, are but too ready to wink at practices which it is their duty to bring to light.

I earnestly trust that the all but united voice of the moral and religious portion of the community—of non-abstainers as well as abstainers—may, through the blessing of God, be instrumental in defeating the attempts of interested parties, who, for the sake of gain, are using every means to persuade the Legislature to repeal a law fraught with so many blessings to the northern part of this island.

J. R. SIMPSON,
Minister of Abbotshall Free Church.

Abbotshall, Kirkcaldy, June 15, 1857.

From Rev. JAMES ROBBIE, *Kirkcaldy*.

Townend Place, Kirkcaldy, 15th June, 1857.

FROM what I have seen of the operation of Forbes Mackenzie's Act, and from what I have heard of it from others, I am decidedly of opinion that its effect in this locality has been most beneficial. Especially, I have reason to believe, it has tended to lessen the amount of Sabbath-drinking, and thus to promote at least external decorum in the observance of the Lord's-day. I should deprecate any alteration which should make it less stringent.

JAMES ROBBIE,
Independent Minister.

From JAMES BIRRELL, Esq., *Kirkcaldy*.

6th June, 1857.

DEAR SIR,—About eighteen months ago, I communicated to the chairman of the Temperance Society here my opinion of the beneficial results of the Mackenzie Act, and I can only now confirm that opinion, founded upon greater experience of its operation.

It is greatly to be deplored by every friend of humanity, that the remedy has done so little, comparatively, to cure the terrible evil of drunkenness; and the question must soon force itself again upon the legislature, whether the Act should not be extended to include all places of public entertainment. Many temperance houses—falsely so-called—are exempted from the surveillance of the police, because they ostensibly decline to sell intoxicating drinks, while they notoriously do so, by covert and illegal means, to the injury of the fair trader, and to the greater injury of those who frequent them.

I trust every opportunity will be given for a thorough inquiry into the working of this Act, by a commission to take evidence upon the spot. It would be my duty to declare, that every case which has come before me as a magistrate, was either from drink directly, or from a criminal act to acquire the means of obtaining it. It is a melancholy reflection,

that drinking leads to intemperance, and intemperance to crime; while there would be no limit to the prosperity of our beautiful country if temperance were the characteristic of our countrymen, and intemperance not their reproach.—I am, dear sir, yours faithfully,

JAMES BIRRELL.

From A. G. MALCOLM, Esq., *Flax-spinner, Kirkcaldy*.

I CONSIDER the Forbes Mackenzie Act has had a very beneficial influence on the drinking habits of the country, and in my opinion the stringency of the Act ought not to be relaxed as to the opening and shutting of Public Houses.

A. G. MALCOLM,
Flax-spinner.

Kirkcaldy, 15th June, 1857.

From J. & W. HENDRY, Esqs., *Kirkcaldy*.

In reference to the inquiries regarding the working of the Forbes Mackenzie Act, as employers, we may simply state our own opinion by confirming our last letter to you on this subject.

Instead of relaxing we would be inclined for greater stringency. In the case of a commission being appointed for inquiry on this subject, you ought to endeavour to get Scotchmen, and to sit in Edinburgh, if possible.

J. & W. HENDRY.

From ROBERT DOUGLAS, Esq.

Dannikier Foundry, Kirkcaldy, June 5th, 1857.

As an employer of labour, I have no difficulty in giving my experience as to the working of Forbes Mackenzie's Act, for it has had, to my knowledge, a decidedly beneficial effect. A considerable number of operatives are happily free from those habits which this enactment is designed to check; but upon those who are more or less addicted to intemperance, it has undoubtedly had an influence for good. There is less drinking after the pay than there used to be, and many a man comes to his work at six o'clock on Monday morning, when he would have walked into the public-house, had not its door been shut by the present law.

If any change is made in the Act, it ought to be, in my opinion, in the direction of increased stringency.

ROBERT DOUGLAS.

No. LXX.—LIMEKILNS.

From the INHABITANTS OF LIMEKILNS AND CHARLESTON.

Limekilns and Charleston, 4th June, 1857.

WE, whose names are hereunto subscribed, inhabitants of the villages of Limekilns and Charleston, have much pleasure in bearing testimony

to the benefits which have resulted, in this locality, from the Act of Parliament, commonly called the Forbes McKenzie Act, and particularly from the closing of Public Houses on the Lord's-day. Limekilns and Charleston are villages situated upon the Frith of Forth, are in the parish of Dunfermline, and distant about three miles from that town, which contains 14,000 inhabitants. In such a population, there are, as might be expected, not a few thoughtless and irreligious persons; and of these, numbers were in the habit of strolling down on the Lord's-day to Limekilns and Charleston, for the purpose of bathing, drinking, and amusing themselves; and their conduct was often such, and so many were seen returning to their homes, in various stages of intoxication, as to occasion great injury to public morals, and great annoyance and vexation to all who seek the welfare of the community. Since the passing of the for- said Act, these evils have been greatly abated, and a marked change for the better has been observable; fewer idlers frequent the villages on the Lord's-day, and a person in a state of intoxication is rarely witnessed. On these grounds we would earnestly plead for the honest enforcement of the Forbes McKenzie Act, and would sincerely deprecate, as a great public calamity, any interference with it on the part of the Legislature, or relaxation of its enactments.

WILLIAM JOHNSTON, D.D., Minister, Limekilns.
JOHN STEEDMAN, Charleston.
DAVID BLELOCH, Charleston Saw Mills.
ANDREW ROXBURGH, Labourer, Charleston.
CHAS. B. PITTLADO, Sundry, do.
JOHN ADDISON, do.
JAMES JOHNSTON, Medical Practitioner, Limekilns.
DAVID WILSON, Shipowner, Limekilns.
DAVID COLVILLE, Elder, Charleston.
GEORGE BLYTH, Teacher and Elder, Charleston.
JAMES YOUNG, Insurance Agent, Elder, Limekilns.
JOHN ROBERTSON, Elder and Wright, do.
JOHN REID, Shipowner and Elder, do.
THOMAS IRELAND, Teacher, do.
P. McLEISH, Clerk, Charleston.
GEORGE WHITE, Merchant, Limekilns.
JAMES BRYCE, Merchant and Elder, do.
JAMES GIFFORD, Shipmaster and Owner, do.
WILLIAM GIFFORD, Shipmaster and Owner, do.
JOHN PUTTLE, Shipmaster, do.
JAMES KING, Ship Carpenter, do.
CHARLES WILSON, Shipmaster and Owner, do.
ROBERT WILSON, Shipmaster and Owner, do.
JOHN WILSON, Gardener, do.
ROBERT WILSON, Gardener, do.
DAVID WILSON, Gardener, do.
JOHN MONRO, Shipmaster, do.
ANDREW MONRO, do.
JAMES PATTERSON, Charleston.
JAMES KNOX, do.
JOHN WESTWOOD, do.
HENRY ADDISON, do.
JOHN FERGUSON, do.
ROBERT MAY, do.
JOHN METHVEN, do.
ROBERT MOIR, do.
JAMES GRAY, do.
GEORGE DICK, do.
JOHN HUTCHISON, do.
ROBERT HUGH, do.
WILLIAM MAY, do.
WILLIAM WILSON, Jex, do.
DAVID HUTTON, do.
CHARLES BRUCE PITTLADO, Jex, do.

THOMAS THOMSON, Charleston.
ALEX. DAVIDSON, do.
ANDREW WHYTE, do.
JOHN MAY, do.
JOHN DEWAR, do.
JOHN HUTTON, do.
JOHN CLARK, do.
JAMES WALKER, Sec., do.
JAMES ADDISON, do.
ROBERT ADDISON, do.
DAVID WALLS, do.
WILLIAM HODGE, do.
DAVID STRUTH, do.
JAMES FORBES, do.
WILLIAM WILSON, Sec., do.
JAMES DICK, do.
DAVID HUTCHISON, do.
WILLIAM IZITT, do.
ROBERT WILSON, do.
RICHARD ROXBURGH, do.
WILLIAM FERGUSON, do.
JAS. HARDIE, Farmer, do.
EBEN. ROXBURGH, Limekilns.
WILLIAM WHYTE, do.
JOHN SMITH, do.
JOHN ADIE, do.

N o. LXXI.—MELROSE.

From the MINISTERS of Melrose.

We, the undersigned, have much pleasure in bearing testimony to the marked improvement resulting from Forbes Mackenzie's Public House Act, and to its salutary effects on this town and neighbourhood; and we hope the law will be maintained and continued in all its integrity.

WM. MURRAY, Minister of Melrose.
A. CAMPBELL, Minister of Free Church.
WM. CROMBIE, Minister of Congregational Church.

Melrose, 12th June, 1857.

From Major BAILLIE, Eldon Hall, Melrose.

I AM of opinion that the repeal of Forbes Mackenzie's Act would be a great evil to Scotland. I have reason to believe that, in localities in which its good effects are denied or disputed, inquiry would prove that it has not been heartily and energetically administered.

With regard to the allegation that it has increased drinking in private houses, I would observe, that, if determined drunkards evade the Act in this way, they cannot do so to any great extent without the knowledge and connivance of the licensed spirit sellers—the very men who make the outcry against the practice, but who will not use the remedy in their hands, because to do so would diminish their gains.

While the Act places obstacles in the way of even the habitual drunkard, it greatly diminishes the temptations formerly held out to other persons, especially to the young and thoughtless, by public-houses open on the Lord's-day, and at early and late hours on other days.

Eldon Hall, 8th June, 1857.

R. BAILLIE.

From THOMAS J. DUNN, Esq., *Melrose.*

15th June, 1857.

I CONTINUE to consider the working of the Public House Act to be highly beneficial in this district.

THOMAS JOHN DUNN,
Writer and Banker.

No. LXXII.—PENNICUIK.

From Rev. JOHN HOME, Minister, *Parish Church.*

The Manse, Pennicuik, 12th June, 1857.

As I understand that there is a strong feeling in certain circles in favour of the repeal of the Forbes Mackenzie Act, I beg to take this opportunity of giving my strongest testimony to the blessed effects resulting to Scotland from the working of that excellent measure.

No one in the least degree acquainted with the moral and social condition of the people of this country for the last twenty years requires to be told that, previously to the passing of the Forbes Mackenzie Act, our dramshops were, what they still are, although in a less degree, haunts of dissipation—scenes of indirect robbery—thoroughfares of ruin—and a prolific source of vice and crime. Our streets during all hours of the night were the resort of the drunkard, and even on Sabbath the services of the sanctuary were exchanged for the debaucheries of the 'back shop.' These are facts which no man can deny.

However, since the passing of the Forbes Mackenzie Act, things have undergone a change. Although there is still far too much dissipation, and far too much Sabbath-breaking in our land, yet the above measure has wrought wonderful effects, in improving the religious and moral condition of our people, by removing to a great extent temptation from their way. Our churches are better filled, and more regularly attended; and the Christian, in his preparation for the Sabbath, is not disturbed by a Saturday night's brawl—nor are his meditations on divine truth interrupted by the consequences of a Sunday evening's debauch.

JOHN HOME,
Minister of Pennicuik.

From Rev. THOMAS GIRDWOOD, Minister, *U.P. Church.*

Bridgend, Pennicuik, 11th June, 1857.

It is with great pleasure that I bear testimony in favour of the 'Act for the better Regulation of Public Houses in Scotland,' usually known by the name of the 'Forbes Mackenzie Act.' The beneficial effects of it are very apparent in the neighbourhood, especially on Sabbath. Previous to its adoption we were frequently annoyed during the night, and on Sabbath nights particularly, with drunken brawls and noisy revelry. Now we enjoy comparative peace and quietness. It is, however, my conviction that we have still too many houses where intoxicating drinks are sold; for just in proportion to their number are the temptations and facilities for our working men wasting their substance, impoverishing

their families, and ruining themselves, both soul and body, by the most debasing vice of drunkenness. If any alteration, therefore, is made in the provisions of the Act, my strong persuasion is that it ought to be in the way of further restriction.

THOMAS GIRDWOOD,
Minister.

From Rev. D. DUNCAN, Minister, *U. P. Church, Howgate, Pennicuik.*

Howgate, 6th June, 1857.

I VERY cordially bear testimony to the good effects which have resulted from the restrictions placed on the sale of intoxicating liquors by the Forbes M'Kenzie Act. I am fully convinced that it has greatly diminished the amount of intemperance, especially on the Sabbath. Its utility was strikingly attested here during the formation of the Peebles Railway. The quiet which then reigned in the village on Sabbath, the absence of everything which could disturb those who were assembling for public worship, was owing chiefly to the regulations which it embodied. I should greatly deprecate any relaxation of its provisions, and particularly any attempt to set aside or to modify those which relate to the Sabbath.

DAVID DUNCAN.

From Rev. HUGH A. STEWART, *Free Church, Pennicuik.*

Pennicuik Free Church Manse, June 10th, 1857.

I HAVE great pleasure in adding my humble testimony to that already given from all parts of the country, regarding the operation of the Forbes M'Kenzie Act, for I have not the slightest hesitation in expressing the opinion that it has conducted materially to the order, and comfort, and well-being of the community at large—on the week day, and especially on the Sabbath. Whilst, no doubt, there is still great room for improvement, there is certainly much less drunkenness than formerly; and I may add, that all with whom I have conversed on the subject, in this village and surrounding district, declare their concurrence in the views stated above.

HUGH A. STEWART.

From JOHN COWAN, Esq., *Valleyfield, Pennicuik.*

THE passing of the Act for the better regulation of public-houses was to me a cause of great thankfulness, and I have ever since rejoiced that, in the providence of God, our rulers were led to enact so beneficial a law.

In this neighbourhood, there has been a striking improvement since the passing of the Act. Our streets are quiet, the Sabbath is truly a day of rest and peace, and our feelings are rarely grieved by the disorders that often characterised the neighbourhood formerly. I believe that the Act is respected, and, as far as I know, it is approved by the spirit-dealers themselves. In the conduct of their business, there appears to me much greater decency.

Had the change referred to not been made by the legislature, I would have looked with horror on the progress of the traffic in our beloved country. The trade was being rapidly extended, the people were be-

coming more vitiated, and, in our parliamentary and civic elections, the keepers of public-houses were acquiring a power which made every lover of order tremble. I earnestly hope, that not only there may be no change in the Act to weaken its power, but that, so soon as the people give expression of a desire for further restrictions, we may see these enacted, as I feel confident they would be for great good to the community.

JOHN COWAN.

Valleyfield, Pennicuik, 9th June, 1857.

From THOMAS M'DOUGAL, Esq., Esk Mills, Pennicuik.

Esk Mills, 12th June, 1857.

I HAVE much pleasure in bearing testimony to the beneficial effects which have resulted from the Forbes M'Kenzie Act in this neighbourhood—particularly the peace and quiet which prevail on the Sabbath, as contrasted with the disgraceful scenes which were formerly of common occurrence.

Very great advantages have also, I believe, resulted from the diminution of the number of public houses in the district. I know that the most marked improvement has taken place within the last few years in the habits of the working people. I have not had occasion to discharge a single hand for drunkenness for a long period, which previously was of common occurrence.

THOS. M'DOUGAL.

NO. LXXIII.—STEWARTON.

From Rev. C. B. STEVEN, Parish Minister.

HAVING been requested to state my opinion of the working of Forbes Mackenzie's Act in Stewarton, and the necessity of retaining the same, and even rendering some of its clauses more stringent, and inflicting heavier penalties, as well as affording the local authorities greater facilities than those which now exist for enforcing its provisions, I have no hesitation, from a careful observation of its operation, in highly approving of it, as tending, in an eminent degree, to check the alarming prevalence of the sin of drunkenness, and to promote the sanctification of the Lord's-day, were magistrates only more careful and decided in enforcing the penalties when incurred, and employing a more active supervision by their officers in visiting public-houses on the Sabbath, and preventing the clandestine sale of intoxicating drink carried on by many to an alarming extent.

It would also tend to this result, were the authorities more careful in granting licenses to public-houses, and ascertaining that those who are allowed to sell are men of undoubted character and regular habits.

For my part, along with my kirk session, I have resolved, and publicly intimated, that I will now entirely refrain from recommending any one for this degrading and demoralizing employment; and, I trust, the time will soon come, when any one engaged in it will have the brand of universal reprobation inflicted upon him.

C. B. STEVEN.

5th June, 1857.

From J. C. M'LURE, Assistant Parish Minister, Stewarton.

IN answer to your queries, I have to state, that I consider that the Public Houses Act has wrought beneficially in every respect, that the only reason why it has not produced so much benefit as might have been expected, is the laxity of resident Justices and Police enforcing its regulations and punishing delinquents, and that what is required to render the Act more effective, is that Justices be compelled, under penalty, to punish every reported case.

J. C. M'LURE.

From Rev. SAMUEL KENNEDY, Free Church Manse, Stewarton.

IN reference to the working of Forbes M'Kenzie's Act in this place, I deeply regret that I cannot bear a very favourable testimony. So long as the wholesome dread of its penalties lasted, the aspect of our town (especially on the Lord's-day) was wonderfully improved. But when it became apparent that any resident authorities were indisposed to enforce its provisions, the publicans became bold, and the dram-drinkers as numerous and irreverent as ever. Let but the provisions of this much-needed Act be enforced, and even extended in the same direction, and soon will our country be freed from those aspersions which are, alas! too righteously cast at her.

SAM. KENNEDY.

From Rev. PETER CAIRNS, U. P. Church, Stewarton.

IN answer to your queries, I have to say, that, as to the first point, Has Forbes M'Kenzie's Act been productive of good in this place? I answer, so far as my information goes, it has, to some extent, been productive of good. It is said there is less drinking on week day evenings and there is less on the Sabbath, at least in public-houses.

Why has it not produced so much benefit as might have been expected?

Because its provisions have not been enforced as they ought to have been. After the Act became law, the people seem to have been afraid of subjecting themselves to its penalties, and so long as their fears prevailed there was much greater sobriety; but after it became evident that the Act was not to be enforced, they were less on their guard, and indulged more unreservedly in their old habits.

What is required to render the Act more effectual?

The strict enforcement of its provisions. Were those who sell and those who buy and use intoxicating drink, satisfied that the law would be enforced, there can be no doubt that it would tend greatly to promote the sobriety of the bulk of our population.

PETER CAIRNS.

From Rev. ROBERT SMITH, Independent Church, Stewarton.

THE diminution of drunkenness, and the improvement in Sabbath observance, that were very marked when, and for a short time after, the Forbes Mackenzie Act was put in force here, have all but disappeared. The sole cause of this is the apathy and inefficiency of the

local authorities. The Act, with a few more stringent provisions, duly enforced, would be an incalculable blessing to the community.

About three weeks ago petitions to both Houses of Parliament were presented, agreed upon at a public meeting of the inhabitants, headed by all the ministers, and signed by upwards of five hundred of the male inhabitants, for the integrity and greater stringency of the Act. The inhabitants have measures in contemplation that will secure a better observance of the provisions of the Act.

ROBERT SMITH.

APPENDIX.

THE following Testimonies have been received too late for insertion in their proper places:—

No. I.—From the MAGISTRATES of Aberdeen.

Aberdeen, 15th June, 1857.

WE have much pleasure in giving our testimony in favour of the Forbes Mackenzie Act.

Since that Act came into operation, very little Sabbath drunkenness as seen in our streets; and the various Police Reports in this city show a decrease both in committals and in the number of individuals charged with drunkenness.

Were the Act more efficiently carried out than it has been, we believe the results would be even more apparent.

We would sincerely deplore the success of any movement having for its object the Repeal of this Act, or which contemplated material alterations on any of its provisions.

WM. HENDERSON, Bailie.

LEWIS SMITH, Bailie.

*DAVID M'Hardy, J.P., Bailie.

HENRY C. OSWALD, Bailie.

* Bailie M'Hardy substitutes for the words 'VERY LITTLE Sabbath drunkenness,' &c., 'much less.'

No. II.—From A. W. CHALMERS, Governor, Aberdeen Prison.

I HAVE much pleasure in giving my testimony in favour of the Forbes Mackenzie Act.

Since that Act came into operation, less Sabbath drunkenness is seen in our streets, and the various Police reports in this city show a decrease both in committals and in the number of individuals charged with drunkenness.

I would sincerely deplore the success of any movement having for its object the Repeal of this Act, or which contemplated material alterations on any of its provisions.

A. W. CHALMERS,
Governor.

No. III.—From PROVOST HOGG, Culross.

Lowvalleyfield, Culross, 8th June, 1857.

MY DEAR SIR,—As a resident Justice of Peace for the County of Perth, and Provost of the Burgh of Culross, I have had full opportunity of observing the working and effects of the Forbes Mackenzie Act in this district of Perthshire, and the result of my observations is, that I have formed a very favourable opinion of the Act

—that it has been the means of much good in the suppression of drunkenness—and ought to be maintained in its integrity.—I am, my dear sir, yours very truly,

JAMES HOGG.

We entirely and cordially concur in the opinion above expressed by Provost Hogg.

W. C. STEPHEN, Bailie.
DAVID SHOTT, Bailie.

No. IV.—From FRANCIS HAMILTON, Esq., Procurator Fiscal, Hamilton.

Hamilton, 13th June, 1857.

SIR,—I received your letter of yesterday, requesting information as to the working of Forbes Mackenzie's Act here. Hamilton not being a royal burgh, and the Magistrates having, therefore, no jurisdiction under the Act, I can furnish you with no statistics derived from my office of Procurator Fiscal of the burgh court. I have, however, watched the effects of the Act, and have no hesitation in giving it as my opinion, that they have been most pernicious to society. The true title of the statute ought to be 'An Act for encouraging drinking intoxicating liquors in the families of the working classes, and for promoting the illicit sale of excisable liquors.' That such has been the result, added to the demoralizing influence of espionage, I think that no unprejudiced person, who has had an opportunity of judging, can doubt. Many well meaning clergymen have arrived at a different opinion. But the very nature of the office of these reverend gentlemen excludes them, in a great degree, from the knowledge which would enable them to judge correctly, if they could do so impartially, which few of them could do, for they have taken a side as a party, to which they will adhere. Could I arrive at the conclusion that the Act would promote temperance, it would have no more strenuous supporter than myself. But it is just another instance of the insufficiency and impolicy of all sumptuary acts or laws, demonstrating, if demonstration were required, that men cannot be made sober, moral, or religious, by Act of Parliament.—I am, &c.,

(Signed) FRANCIS HAMILTON.

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ARTICLE I.

“ THERE are (observes Dr Churchill)¹ few diseases of infants and children which are more formidable or more fatal than convulsions.” The great number of deaths from convulsions, especially in infancy, which appears in all our published Mortality Returns, so far bears out the justness of Dr Churchill’s remark. During the five years from 1838 to 1842 included, there occurred, according to the Registrar-General’s official returns, 127,276 deaths from convulsions in England and Wales.² Of these deaths, amounting to about 25,000 annually, almost all are among children below five years of age; and the greatest proportion of cases and deaths takes place among infants during the first year, or rather during the first months or weeks of life.³

¹ Diseases of Children, p. 97.

² Seventh Annual Report of the Registrar-General, p. 63.

10 The frequency of convulsions has, in my practice, appeared most considerable in the first month of life; from this period the disease becomes gradually rarer up to the fifth month, and then again more common up to the period when the incisor teeth make their appearance. After this age, the disease again becomes rare."—See observations of Dr Schœpf Mercet, formerly Professor of the Diseases of Children in the University of Pesth, in *Monthly Journal* for 1850, p. 566.

Without entering into the question of the nature of the different types or forms of convulsions observable in early life, I shall content myself, at present, with referring to the general opinion of pathologists, that by far the greatest proportion of infantile convulsive attacks are sympathetic or functional merely;—a predisposition to the disease being laid by an undue excitability, or super-polarity of the cerebro-spinal, or rather "true spinal" or reflex system of Dr Marshall Hall; and the immediate exciting cause of the affection being usually traceable to some morbid irritation of a distant excitant surface or part, as the stomach, bowels, teeth, etc. Hence, when the disease proves fatal under this form, no organic lesions are usually detected. "Dissections (says Dr Merc) have incontestably established, that in the great majority of cases of infantile convulsions terminating fatally, there is no cerebral or spinal inflammation, nor even evidence of active vascular congestion."¹

Consequently, in cases of infantile convulsions, particularly when of a sympathetic, reflex, or eccentric type, after removing all the traceable exciting sources of irritation, and diminishing any excess of vascular action in the nervous centres, physicians have generally proceeded to combat the disease, if it still persisted, with medicinal agents that tended to reduce the super-irritability of the excitomotor system, or otherwise restore it to its proper and healthy standard of action. To fulfil this indication, preparations of zinc, iron, etc., have been used in the more chronic cases; and in the more acute or sub-acute cases, antispasmodics of very different kinds, as opium, hyoscyamus, musk, etc., have been generally employed. In the following instance, after all the ordinary means of treatment failed, chloroform was used as an antispasmodic with the most marked and satisfactory effect.

CASE.—The Viscountess — was confined on the 7th October. The child, a boy, kept quite well till the 17th of the same month, when it was observed by its nurse to have, two or three times during the day, twitchings in the muscles of the face; but they were not so severe as to attract any very special attention. During the

¹ *Monthly Journal* for 1850, p. 566. See also Billiet et Barthez's excellent work (*Maladies des Enfants*), vol. ii. p. 281; North's *Practical Observations on Convulsions of Infants*, p. 45; Bouchut's *Manuel Pratique des Maladies des Nouveaux-Nés*, p. 387; etc. etc.

two following days, these convulsive twitchings were repeated with rather greater frequency; the hands were observed to be clenched during them, and the thumbs were turned inwards.

On Monday the 20th, the convulsions became far more violent in their character, were more prolonged in their duration, and were repeated with much greater frequency. They continued with little change, and no abatement in their intensity or frequency, for the next fourteen days. Sometimes they affected the right side of the body much more severely than the left. In the meantime, Dr Scott and I tried a great variety of means for their relief; but all in vain. The bowels were well acted upon with mercurials, magnesia, etc.; and every separate function attempted to be brought as near as possible to the standard of health. A new wet nurse was procured, lest the milk might perchance have been proving, as it sometimes does, the source of irritation. The child was placed in a larger and better-ventilated room. Ice and iced water were occasionally applied to the scalp. At one time, when the fits became unusually prolonged, and were not only accompanied, but followed for a time, by much congestion in the vessels of the scalp and face, and an elevated state of the anterior fontanelle, two leeches were applied. Liniments of different kinds were used along the spine. Musk, with alkalies, was given perseveringly for several days as an antispasmodic; and small doses of opium, turpentine enemata, etc., were exhibited with the same view. All these and other means, however, proved entirely futile. As I have already stated, it was on Monday the 20th October that the fits first assumed a severe character, and they continued without any amelioration for about fourteen days from that period, recurring sometimes as frequently as ten or twelve times in an hour. At last the child, who had hitherto maintained wonderfully his strength and power of suction, began to show symptoms of debility and sinking; and during the fifteenth and sixteenth days of the attack, the fits became still more violent, and more distressing in their character. They were now accompanied with moans and screams that were very painful to listen to; symptoms of laryngismus and dyspnoea supervened towards the termination of each fit; and in the intervals the respiration, as well as the pulse, continued much quickened.

During these two last days of the disease, the exhaustion became so great, the dyspnoea in the intervals so distressing, and the fits so

very violent and constant (seventeen were counted in one hour), that Dr Scott and I gave up all hopes of the possible survival of the infant. We had exhausted all the usual means of relief. Ultimately, but much more with the view of abating the screaming, laryngismus, and other distressing symptoms under which the little patient was suffering, than with any great hope of permanent relief and cure, I placed the child, on the forenoon of the 5th November, for about an hour under the influence of the inhalation of chloroform. During this hour there was no recurrence of the fits; but in a short time after the withdrawal of the action of the anæsthetic, the convulsions recommenced with their old violence and frequency. The benefit, however, was sufficient to encourage a longer repetition of the remedy; and from four to eight o'clock in the afternoon of the same day, my assistant, Mr Drummond, placed and kept the child again under the influence of chloroform, a few inhalations from time to time, of a very small quantity of the drug sprinkled upon a handkerchief, and held before the face of the infant, being sufficient for this purpose. It was specially applied at any threatening of the recurrence of a fit, and during the four hours in question all convulsions were in this way repressed. When the child was allowed to waken up at eight o'clock, it took the breast greedily, and continued well for upwards of an hour, when the convulsions again began to recur. At last, about twelve o'clock P.M., it was again placed under the inhalation of chloroform, and kept more or less perfectly under its action for upwards of twenty-four continuous hours, with the exception of being allowed to awaken eight or ten times during that period for the purpose of suction and nourishment. During most of this period it was carefully watched by Mr Drummond, and at last the nurse was entrusted with the duty of adding the few drops of chloroform to the handkerchief, and exhibiting them at any time the child was offering to awaken or become restless.

After this long continuation of the chloroform, the child, on being allowed to waken up, as usual drank greedily at the nipple, and immediately fell back into a quiet and apparently natural sleep. The chloroform and all other formal medication was in consequence discontinued; and from this time there was subsequently no recurrence whatever of the convulsions. In about ten days the infant was removed with the family to the country. I have, within the last

two days (December 18, 1851), seen the child as it was passing through Edinburgh. It was strong, plump, and well grown for a child of ten weeks, and was, in fact, revelling in the best of health.

In exhibiting the chloroform to this infant, ten ounces of the drug were expended; but of course a very large proportion of this quantity was lost by evaporation, in consequence of the mode in which it was employed.

I have known the inhalation of chloroform similarly useful in other cases in arresting infantile convulsions; but I am not acquainted with any instance in which the patient was so young as in the above instance. In the adult also, especially in cases of puerperal convulsions, I have now repeatedly seen the inhalation of chloroform as signal and satisfactory in its antispasmodic power over the convulsive fits, as it was in the little patient whose case I have described. Tetanus and epilepsy have been temporarily arrested and controlled by it. And perhaps it will yet be found one of our most certain and beneficial therapeutic means in the functional forms of those different convulsive or spasmodic diseases that are produced either by an undue excitability of the true spinal system, or by distant morbid irritations acting through this—the excitomotory system. Such reflex convulsive or spasmodic affections are, as is well known, particularly common in infancy and childhood. I have seen its use arrest laryngismus, colic, hiccup, etc.; and cases have been detailed to me of its occasional successful use in asthma, spasmodic urethral stricture, etc. But there is one common and too fatal spasmodic disease, almost confined to the period of childhood, in which I have seen anæsthetic inhalations successful in arresting and controlling the paroxysms, and where probably a more extended and persevering use in the employment of them would be found to be attended with beneficial effects. I allude to hooping-cough. I have known chloroform inhalations greatly abate the irritability of the cough attendant upon phthisis, etc. But with others, I have scrupled to use chloroform inhalations in hooping-cough, under the fear that they might possibly increase the great predisposition which exists in this affection to pneumonic inflammation, or aggravate that inflammation if it were already present. This *a priori* reason, however, against the use of chloroform inhalations as an antispasmodic in hooping-cough, has been of late set

aside by the observations and experience of different German physicians. In a paper, containing some remarks relative to the medical uses of chloroform, published in the "Monthly Journal" for December 1847, in addition to its employment as antispasmodic, anodyne, etc., I suggested the possibility of the drug acting as a contra-stimulant in some inflammatory diseases, and particularly in those of a painful kind. Latterly, we have had records published of its employment in upwards of 200 cases of pneumonia in German practice. Out of 193 cases of pneumonia treated with chloroform inhalations by Wachern, Baumgärtner, Helbing, and Schmidt, 9 patients died, or the mortality amounted to 4½ per cent. Dr Varrentrapp has given chloroform in 23 cases of pneumonia in the Frankfort Hospital. One of these 23 patients died.¹ The detailed results in the other 22 cases seem to have been sufficiently satisfactory.² At all events, the effects of the chloroform inhalations upon the cough, expectoration, etc., and upon the general course of the

¹ It is proper to add, that during the time that these 23 cases of pneumonia were admitted into the Frankfort Hospital, and treated in that institution with chloroform inhalations, three other cases of the same disease presented themselves, where the patients, at the time of application, were already in a hopeless state. Chloroform was not tried with them.

² Out of these 23 cases of pneumonia reported by Varrentrapp, in addition to chloroform, the first was treated by resection and antimony, a second case was bled, and two others that were complicated with pleurisy, had calomel exhibited and blisters applied; the remainder were treated with chloroform alone, about sixty drops being placed upon a piece of cotton, the vapour inhaled for ten or fifteen minutes, and the dose repeated every two, three, or four hours. It was not given so rapidly or strongly as to produce unconsciousness. The patients were all adults; the mean period of the disease at their entrance into the hospital was the fourth day; and the chloroform treatment was usually commenced on the following morning. The effects of the chloroform inhalations seemed generally to be,—1. The induction of perspiration, sometimes after the first inhalation, in no case later than the third or fourth. 2. Gradual diminution and ultimate disappearance of pain in the thorax or side. 3. Relief of the feeling of thoracic tightness. 4. Daily decrease of the frequency of respiration from thirty-seven per minute (the average on admission) down to the natural standard. 5. In all cases, without an exception, the cough was lessened by the inhalation, the intervals between the coughs shortening, the cough itself being less violent, and the expectoration looser; the sputa gradually losing their red tinge, and diminishing in quantity. 6. The pulse fell rapidly in frequency (down to eighty on an average on the fifth day of treatment), and the fever diminished gradually, in one case suddenly. 7. Good and comfortable sleep ensued

disease, would appear to show that we need have no fears of deleterious effects from it, as far as regarded the chance or existence of pulmonary inflammation; whatever advantages we may derive from it in relation to its prevention of that inflammatory state by allaying the cough, keeping the lungs in a relative state of quietude, and abating or restraining the succession of characteristic spasmodic attacks. I speak, of course, of the more severe cases of pertussis; for the milder forms of it require care merely rather than actual treatment.

on an average on the third or fourth day after the commencement of the chloroform inhalations.—See *Henk's Zeitschrift für Rationelle Medicin*, and the *London Medical Times* for October 18, 1851.

ARTICLE II.

OCCASIONAL LATENCY OF THE SYMPTOMS IN ADVANCED
CARCINOMA UTERI.

IN the earlier stages of cancer of the uterus, the disease is, as a general rule, accompanied by few, or indeed no, well-marked dynamic symptoms. Patients themselves, and sometimes also the members of the profession, seem to expect that the advent and presence of this fatal malady should be very constantly accompanied with local pain and suffering. The reverse, however, of all this seems to be the general rule. In fact, it rarely happens that a patient affected with uterine cancer applies at all for medical advice till the disease has advanced beyond the stage of deposit, and has already made more or less progress in the stage of ulceration. Even then the local symptoms which excite the patient's attention are usually not the expected pathognomonic pain, but occasional attacks of hemorrhage, attended with leucorrhœal discharge. Or, if the pain is present, it often as yet only amounts to a sensation of discomfort and uneasiness, and not to a feeling of actual suffering. Nay, sometimes any feeling of pain in the uterus or uterine region itself never supervenes at all, or not till the very last period of the affection. In the course of practice, I have happened to see a number of cases to which this remark applies. Instances also occasionally occur where the patient suffers more or less severely from pain; but that symptom is in the form of a sympathetic or reflex pain, situated, not in the uterus, but in the limbs, loins, or some other distant part. Several years ago, I had occasion to examine a case in which the cervix uteri was entirely eaten away by extensive cancerous ulceration; but without any marked local pain. The patient, however, had complained so much of pain in the mamma, that local anodyne and other applications had been applied to that part of the body. Dr Davidson told me the particulars of a case,

in which the patient complained to her medical attendant of nothing during life, except a series of severe urinary symptoms, for which she had ineffectually undergone a variety of treatment. On opening her body after death, the coats of the bladder were found deeply implicated in a mass of ulcerated uterine carcinoma. The following case, which I saw within the last few weeks with Dr Cowan, in a patient who came from a distance in the country, is one of the most striking illustrations which I have met with of the occasional latency of the local symptoms of cancer of the uterus, even in a very advanced and ulcerated stage, and of the transference, as it were, of the principal suffering and symptoms to another organ:—

CASE.—A lady, æt. 43, married at a very early age, and the mother of six children, had enjoyed the most robust health until twelve months ago. About that period, she first observed a white discharge from the vagina, which she believed to be common leucorrhœa. There likewise occurred repeated discharges of blood; sometimes in large coagulated masses and shreds. At the same time, the catamenia recurred with regularity, and without pain. About three months since, she first complained of such prostration as prevented her taking her usual amount of exercise. Difficulty and pain also in passing water, and latterly incontinence of urine supervened. During all this period, she experienced no feeling of uneasiness referable to the uterus itself; nor were the leucorrhœa or menorrhagia of a nature or extent calculated to excite in the mind of the patient any feelings of alarm. In fact, the principal, and, according to her own account, her almost sole symptoms were the debility already mentioned, and the painful dysuria, which had, however, been relieved by alkalies.

On making a vaginal examination, I found the cervix uteri, with the upper and anterior part of the vagina, the seat of extensive carcinomatous induration and ulceration. The disease in its ulcerative process had in fact proceeded so far at one point that it had implicated and *already perforated* the neck of the bladder,—thus leading first to the dysuria, and subsequently to the incontinence of urine, of which the patient so much complained.

In a note from Dr Cowan, dated December 20th, he states:—
“At present our patient's appetite is good; bowels regular. She

sleeps well, and the general appearance is improved, rather than otherwise, since you saw her. All she complains of is, general debility, incontinence of urine, with a thin white non-acrid discharge, and occasionally (but not constantly) heat in the region of the uterus, unaccompanied with pain. All other symptoms of extensive uterine disease are absent."

ARTICLE III.

TURNING AS A SUBSTITUTE FOR CRANIOTOMY IN LABOUR
DELAYED BY OBSTRUCTION AT THE BRIM OF THE PELVIS.

FORMERLY, medical practitioners seem to have thought little, and medical writers said little, regarding the very repulsive and revolting character of the operation of craniotomy, when performed, as it frequently was, when the child was still living. Apparently some obstetric practitioners and writers of the present day continue to look upon the practice of craniotomy as one that should not unfrequently be adopted, and one which it is quite justifiable to adopt. Obstetric reports, and collections of cases, have been published within the last few years, describing craniotomy as performed forty or fifty times, or oftener, by the hand of the same practitioner. But perhaps, ere long, it will become a question in professional ethics,—Whether a professional man is, under the name of a so-called operation, justified in deliberately destroying the life of a living human being? For one, I have a strong conviction that, in the kind of case in which the operation is most frequently performed,—namely, where there is obstruction from some disproportion, not very great in degree,¹ between the maternal pelvic brim and the fetal head, the

¹ During Dr Collins' charge of the Dublin Lying-in Hospital, craniotomy was used in 124 cases; in 79 instances on account of tediousness or difficulty in the labour. In one only of these cases was the conjugate diameter of the pelvis as small as 2½ inches. "This," he says, "was by much the most defective pelvis I ever met with in the hospital." "The only means," he observes, "of effecting delivery where the disproportion between the head of the child and the pelvis is so great as to prevent reaching the ear with the finger, is by reducing the size of the head, and using the crotchet."

In most cases requiring craniotomy, the contraction at the brim is in the conjugate diameter, from the projection forwards of the promontory of the sacrum,—the very kind of deformity in which turning is most likely to be the means of saving the life of the infant.

operation is not one which is either morally or professionally justifiable, if the child be still living. Not many years ago, the medical practitioner had this one plea to urge in favour of the adoption of the operation—that *perhaps* the child was already dead; inasmuch as there then existed no certain means of knowing that it was still alive. Auscultation, however, now furnishes us with certain means of settling this question in practice, and has consequently removed this argument in favour of the adoption of the operation. Or perhaps the result would be more correctly given by stating, that in cases of lingering and difficult labour, from some disproportion between the size of the fetal head and maternal pelvic brim, auscultation can now determine the instances in which the child is dead, and in which, therefore, it is justifiable and right to have recourse to delivery by craniotomy; while it shows us also, on the other hand, the strong impropriety and illegitimacy of adopting the same operation in other analogous instances, where the sounds of the fetal heart indubitably prove, to the ear of the medical attendant, that the infant continues alive and well.

Assuredly no man would consider himself justified, on any plea whatever, in perforating, and breaking down with a pointed iron instrument, the skull of a living child an hour after birth, and subsequently scooping out its brain. But is the crime less, when perpetrated an hour before birth? Modern physiology has fully shown, that there is no such distinction between the mental and physiological life of an infant, an hour before labour is terminated, and an hour after it, as to make any adequate distinction between the enormity of the act, as perpetrated at the one or at the other of these two periods. And, as if to add to the horrors of craniotomy, when done upon a living infant, some authors (and among them even the very latest) tell us, that whatever doubts may have existed as to the child being alive or not at the date of operating, the results of the operation itself will decide this point; for if it be alive at the time of the deadly perforation of its scalp, skull, and brain, this fearful fact will be revealed to the practitioner by warm and fluid streams of blood pouring along his fingers and hand, before any masses of broken brain escape; or the reverse.

Unfortunately, no operation in morbid labours is more easy than craniotomy. "Of all instrumental operations in obstetric surgery," says Dr Ramsbotham, "the perforation of the skull, and extraction

of the mutilated fetus, is the easiest which could be undertaken, for delivery in any case of impacted head; and much do I fear that to the facility with which this operation can be accomplished, have been sacrificed the lives of many children."¹ The operations which midwifery possesses as substitutes for craniotomy are, however, not very difficult in performance. And no conscientious practitioner would surely hold the mere difficulty of an operation, as the criterion by which he should decide upon the act of child-murder or not.

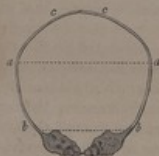
In women who, in previous labours, have had the children removed from them by the operation of craniotomy, nature has herself occasionally pointed out to us, in other labours in the same patients, various means and resources by which that operation could be avoided. Midwifery, as an art, has appropriated some of these hints, and happily applied them in practice. Ever and anon, women, who had been previously the subjects of difficult and dangerous labours, have, when parturition came on *accidentally*, at the seventh or eighth month, born living children easily and safely. Accoucheurs have, in similar cases, taken advantage of this suggestion, and have had recourse to the *artificial* induction of premature labour. In other instances, in which previous labours had been found difficult or impossible without craniotomy, in consequence of the form of the maternal pelvis, a successful termination has occasionally occurred, when the child happened, in subsequent labours, to present with the feet or pelvic extremity, instead of the head. In such instances, the presentation of the feet or pelvis, or of a hand (requiring the presentation to be *ultimately* made footling), has sometimes, when first discovered at the commencement of labour, been regarded as a source of undoubtedly increased danger and difficulty; when it has at last, in reality proved a source of increased safety to the mother, and led, indirectly, to the preservation of the life of the infant.

The records of cases of difficult labour left us by Mauriceau, Smellie, Hull, etc., show, that in particular forms of difficult labour and deformed pelvis, the passage of the child by the feet or pelvic extremity affords some special facility of transit, which is wanting when the head or cephalic extremity forms the presenting part.

I believe that this apparent paradox is explicable by a reference to the anatomical structure or form of the fetal head itself. At

¹ Obstetric Medicine and Surgery, p. 290.

birth, the whole body of the child has, in its configuration, been justly compared to that of a cone—the arch, or biparietal diameter of the skull, forming the base of the cone—the feet forming its apex; and there being a gradual tapering and diminution of size from the former to the latter points. But the fetal head itself, when taken alone, presents also, though more imperfectly, the configuration of a cone;—the base of the skull being considerably narrower than the arch, or, in other words, when (as represented in the accompanying woodcut) we make a vertical transverse section of the fetal skull, we find its bimaxillary diameter, *b b*, is considerably less than its biparietal diameter, *a a*,—the cranium increasing gradually



in breadth and size from below upwards. The difference between these two diameters in the child at birth generally amounts to from half an inch to three quarters.

Further, it must be held in view, that at its base, or bimaxillary diameter, the fetal cranium is so strong, and its bones so strongly united, as to render it quite incompressible. On the other hand, in its arch, or biparietal diameter, the cranium at birth is generally so thin and elastic in its bony parietes, and its sutures are so imperfectly united, as to admit of the head being in its upper parts laterally compressed, or even depressed and indented, at some point, without necessarily destroying the life of the child.

In consequence of the above conformation, it happens, that when the child, in a somewhat contracted pelvis, passes as a footling presentation, the cone-shaped head of the child first enters the contracted brim by its narrower or bimaxillary diameter; and the hold which we have of the protruded body of the child, after its extremities and trunk are born, gives us, when necessary, the power of employing so much extractive force and traction at the engaged fetal head, as

to compress the elastic sides of the broader, or biparietal portion of the cone, between the opposite sides or parts of the contracted pelvic brim, to such a degree as to allow of the transit of the entire volume of the head. In natural labour, the mechanism consists in passing a conical-shaped body (viz., the child) through an aperture (the maternal pelvis) somewhat larger than the base of the cone itself (the arch of the fetal skull); and in this case, when once the base of the cone or head does pass, a single pain is generally sufficient to expel the remainder of the infant—an arrangement by which dangerous compression of the cord is avoided by nature. But when the brim of the pelvis is somewhat less than the natural standard, or the head somewhat above that standard, either from size or malpresentation, the conditions are so far altered, that we have now a conical-shaped body (the child) to be passed through an aperture (the brim of the maternal pelvis) somewhat smaller than the body that is to pass. And a little reflection is sufficient to show, that under such circumstances, the passing body would be more easily dragged through the contracted aperture, by bringing the narrow apex of the cone first, than it could be pushed through that aperture by allowing the base, or broad end of the cone, to be presented to it; more particularly, if that broad end is, as we have supposed, somewhat larger than the aperture which it is to pass through.

Since writing upon this subject at considerable length a few years back (see "Provincial Medical and Surgical Journal" for 1847-48), I have repeatedly had occasion to turn the child in difficult cases, where the head was not far entered into the brim, and where the long forceps failed, or were contra-indicated; and in which the alternative of craniotomy seemed the only other measure that could be adopted. A number of my professional brethren have reported to me the success with which they have also followed this practice. In the way of illustration, I adduce the three following cases which have occurred in my own practice and in that of my friends Dr Weir and Dr Peddie, within the last few weeks. I have the pleasure of detailing the cases recently met with by Dr Weir and Dr Peddie in their own words.

CASE I.—On the evening of January 11th, I was asked to see a case of lingering labour, under the charge of Mr Keeling and Dr Cooper. The patient, æt. 26, and pregnant for the first time, had

been in labour for about forty-eight hours. The first stage of labour had been terminated about thirteen hours before I saw her; and the head had remained at the brim of the pelvis, without advancing in any degree further down, for upwards of ten hours. On examining, I found the vagina fully relaxed, but its mucous membrane was becoming heated and oedematous, in consequence, in all probability, of the lengthened obstruction of the brim above. The infant's head was elongated down into the cavity of the pelvis; but the broad part of the head had not passed the brim. The promontory of the sacrum was so easily reached by the finger, as at once to give the idea, that it projected forwards to an extent greater than natural. The direction of the sagittal suture showed that the head lay more transversely than in the usual normal presentation. The face of the infant was directed to the right sacro-iliac synchondrosis, or rather to the right ilium. The patient was put fully under the influence of chloroform, and the long forceps were easily applied. The blades of the instrument were, as we found after the birth of the child, applied, as usual, obliquely over the head, and did not offer to slip in any degree under the traction that was applied. But no amount of traction that I thought it justifiable to employ could move the head downwards; and Mr Drummond failed also in making any impression upon the advancement of the cranium when I gave him the instrument to use. I altered, in several ways, the direction of the traction, and the position of the patient, but still without any success, and at last withdrew the forceps. Conceiving that possibly there might be some obstruction to the advancement and passage of the child, from some malposition of the arm about the neck, or from some malformation, I introduced the hand by the side of the child's head, for the purpose of ascertaining these circumstances, but found nothing that appeared to me capable of explaining the delay, and the impossibility of advancing the head with the forceps, except it were some oblique position of the head, relatively to the neck or trunk of the infant. A few years ago, I would in such a case have perhaps deemed the operation of craniotomy the only remaining resource. But the stethoscope showed that the child was still alive and well. And, under these circumstances, I resolved to attempt to extract it by the operation of turning. The patient was deeply anaesthetised, in order to relax the uterus as much as possible; and, at a time when all uterine contraction seemed absent,

I passed up my hand and brought down one of the lower extremities of the child. When doing so, a large loop of the umbilical cord fell down into the vagina. I now found an obstruction to the complete version of the infant, which I had met with previously in other cases of turning, when the head was the original presenting part. For, though one foot was down at the orifice of the vagina, the version of the fetus upon its own axis had not been complete, and the head was still at, or near, the brim. Consequently, while Mr Drummond held and retained the extruded foot, I passed up my right hand to the head to push it upwards, so as to complete the version—a part of the operation which, in this as in other cases, is always much aided by the manipulation of the left hand upon the abdomen externally. Subsequently the trunk and arms were easily extracted, and the traction requisite to make the head pass the brim, was much less than I had seen in several similar cases. The child, after birth, had the heart still pulsating, and was readily revived by repeatedly plunging its body alternately from a warm into a cold bath. Yesterday (21st January 1852) I saw both the infant (which was, perhaps, rather above the usual size) and the mother quite well.

CASE II.—On the evening of the 2d December 1851, I was requested (Dr Weir writes me) by my pupil, Dr Bone, to give an opinion upon a case of protracted labour. The patient had been eighteen hours in labour of her fifth child. She had been, in previous labours, the subject of tedious and difficult labour, except in one confinement, when the child was born below the usual size. Her face was flushed, eyes suffused, skin hot, pulse quick, and restlessness great. The os uteri was completely dilated, and the liquor amnii discharged. The head was still at the brim of the pelvis, and although the pains had been for many hours quick, strong, and expulsive, a very small portion of it penetrated the pelvic cavity, and so much as did recede above the brim upon the cessation of the uterine contractions. Under these circumstances, I determined to deliver her immediately; and as it appeared a favourable case for turning, decided upon doing so in preference to using the long forceps. The chloroform was administered till deep snoring was produced, and the hand introduced in the usual manner. So completely were the uterine efforts suspended, that I grasped both the feet before the uterus contracted in the slightest degree upon my hand. No

difficulty was experienced in extracting the child till the head reached the brim, when considerable force was required to draw it through, but not so much as to prevent its being born alive. The mother did well, and in a few days was attending to her household duties. The child presented, after birth, a deep depression of the cranium, on the anterior part of the left parietal bone, immediately above the ear—the result, no doubt, of compression against the promontory of the sacrum. But this has not affected the health of the child, which now (20th January 1852) is otherwise thriving and well.

CASE III.—On the 30th November 1851, I was called (writes Dr Peddie) to Mrs —, aged 30, in her sixth confinement.

At her first confinement, November 10, 1843, in consequence of contraction at the brim of the pelvis, principally on account of an exostosis projecting from the promontory of the sacrum, and to some extent also from an under average size of the pelvis, she was delivered by embryulso. This extreme measure was not resorted to until forcible natural pains had existed for many hours, without effecting an entrance for the head at the brim of the pelvis; until the long forceps had been applied, first by myself, and then by Dr Simpson, without obtaining any advance of the head; and until the foetal circulation had been ascertained to have ceased. After the perforation was employed, no small difficulty was experienced in dragging the child through the pelvis.

At her second confinement, 26th September 1844, after allowing four hours to elapse from the time when the os uteri was fully dilated without the smallest descent of the head, I succeeded, with the long forceps and powerful traction, in delivering the child safely. This fortunate termination was the more satisfactory, that the induction of premature labour had been considered and decided against some months previously.

At her third confinement, 20th April 1846, the labour went on naturally, and the child was expelled without artificial assistance. The explanation of this fortunate event appeared to be, that the child was a female one, and considerably under the average size, the head, more particularly, being small.

At her fourth confinement, 28th October 1847, the labour resembled Mrs —'s first, the first stage being short, while the second had existed for many hours before I saw her. The pains

were extremely forcible, conveying the impression of danger from rupture of the uterus. After trying two different pairs of long forceps, I sent for Dr Simpson, who furnished me with a third pair—which, though easily applied and powerful, did not enable me to bring forward the head in the least degree. Dr Simpson then proposed turning in preference to perforation—the more especially as the child was ascertained to be still alive; and this he accomplished readily, the patient being very deeply under chloroform, and delivered her after the employment of very powerful traction. The child was at first as if still-born, but was brought about after the continued use of the usual means.

At her fifth confinement, 11th December 1848, the presentation was a footling one—as if nature was indicating the right mode of procedure; and, accordingly, when the first stage was completed, I seized hold of the other foot, brought it down, and delivered the child safely, but not without the employment of very considerable traction in bringing the head through the pelvis.

At her sixth and last confinement, 30th November 1851, I saw Mrs — at eleven A.M. Pains had begun about twelve o'clock on the previous night, and had gone on regularly, but not severely, until within two hours from the time of my visit. I found the os completely dilated, the vagina filled with tensely distended membranes, and the head above the brim. On passing the hand to make a proper examination, I recognised the old exostosis, but decidedly larger, fully the size of a small walnut, projecting from the sacrum immediately within the right sacro-iliac symphysis. I found also that the head was lying with the occiput to the sacrum, pointing somewhat to its left iliac symphysis, and the forehead to the right side of the symphysis pubis. I was also satisfied that the head was of large size, while the pelvis generally was small.

Considering previous experience in the case of this patient, and the remarkable success of turning in her fourth labour, when she could not have been delivered otherwise than by the life-sacrificing perforator; and considering that in the present labour the peculiar position of the head would render efforts by the long forceps—however well employed—useless, I resolved at once to turn. This I accomplished, and brought down the body very satisfactorily, while the patient was placed deeply under chloroform by Dr Harper of Leith, who kindly assisted me. As was to be expected, much exer-

tion and pulling were necessary to drag the head through the pelvis, although the most favourable respective diameters were chosen. A towel slipped round the anterior part of the neck and chest, and crossed over the shoulders behind, gave steady purchase, and enabled me more readily to complete the delivery. The child was a large boy, and at first apparently still-born; but in about twenty minutes, after unceasing attention, by giving alternate plunges in hot and cold baths, as practised in the first and second labours, and by the use of artificial respiration, he was completely restored. He ultimately did well, and Mrs — made an excellent recovery. The child weighed 9 lbs. 5 ozs.

In conclusion, let me briefly recapitulate some of the principal advantages which, as it appears to me, the operation of turning has over the operation of craniotomy, in cases such as we have been considering in the present communication,—viz., where the pelvis is somewhat too small, or the fetal head somewhat too large, to allow the infant to pass by the unaided efforts of nature, or even with the assistance of the long forceps, if that instrument is had recourse to.

I. It substitutes the delivery of the infant by the hand of the accoucheur, for its delivery by formidable steel instruments. And certainly the avoidance of instruments is, as a general principle, desirable when it is possible.

II. The transit of the cone-shaped head of the child through a somewhat narrow brim, is facilitated by the narrow end of the cone (or bimaistoid diameter of the head) being made to enter and engage first in the contracted brim; and the hold which we obtain of the extruded body of the child, enables us to employ so much extractive force at the engaged fetal head, as to make the elastic sides of the upper and broader portion of the cone (or biparietal diameter of the cranium) to become compressed, and if necessary indented, between the sides of the contracted brim.

III. When the child is brought down footling, we have far more power, than when the spherical arch of the cranium presents, of manually adapting and adjusting, when necessary, the shape of the head to the shape of the contracted brim; the rounded form of the cranium not affording us any sufficient hold and purchase for this purpose in cranial presentations.

IV. The *lateral* and very *temporary* compression of the fetal head by the contracted sides of the pelvis, such as we can produce and effect on artificial turning and contraction, is less dangerous to the life of the child than its *oblique* or longitudinal compression with the long forceps, or by the *long* impaction of the head itself in the contracted brim.

V. In cases where the narrowness is greater, and such as to produce a depression or indentation in the elastic and flexible cranium of the child, still this transient depression, or indentation, is not necessarily destructive to life, as the perforation of the head in craniotomy is. Children often survive and recover, when born with the head much distorted and even indented. See, for example, the child in Case II.; and other similar instances recorded by Smellie, Denman, Velpeau, Duges, Jacquemier, Radford, etc. etc.

VI. On these accounts, the operation of turning affords a fair chance of life to the child; while craniotomy affords none. And even when the turning and extraction require some considerable time for their performance, the resulting temporary asphyxia of the child is not necessarily so deep and fatal, but that the infant may be revived by appropriate measures applied after birth. I can, for one, state that in these cases, and in instances of common footling and turning cases, I have repeatedly been astonished at the viability of the infant after traction had been applied to it, both so strong in degree and so long in duration as to leave apparently little hope of its survival; and I have heard other practitioners make the same remark as the result of their experience.

VII. The operation of turning, under the circumstances we speak of, will, I believe, be found also to be more safe to the life of the mother than the operation of craniotomy. In every instance the operation of craniotomy is necessarily fatal to the infant; but in a very large proportion also, this operation is fatal to the mother. The statistical results collected by Dr Churchill and others show that craniotomy is fatal to the mother in about 1 in every 5 cases in which it is performed; while turning does not generally prove fatal in above 1 in every 15 or 16 patients, even including complicated cases.¹ Besides, it affords this great source of safety to the

¹ Out of 303 craniotomy operations, 60 of the mothers died, or 1 in 5. (Churchill's Midwifery, p. 314.) Out of 192 cases of turning, 12 mothers died, or 1 in 16. (Ibid. p. 250.) "Between," says Dr Ramsbotham, "the years 1823 and

mother, that, *ceteris paribus*, delivery by turning can be, and is, as a general rule, adopted far earlier in the labour than delivery by craniotomy; and in proportion as it is practised earlier, so far also will it be practised with greater safety and greater success,—the maternal mortality attendant upon parturition, whether natural or operative, increasing always in a ratio progressive with the increased duration of the labour.

Among the operative deliveries which occurred in the Dublin Hospital when Dr Collins was master of the institution, the duration of the labours at the time of operating is stated in 125 cases. Among these 125 instrumental and operative deliveries only 1 in every seventeen of the mothers was lost, when the delivery was accomplished within twenty-four hours from the commencement of labour; 1 in every 7 of the mothers died when the delivery was delayed till from twenty-four to forty-eight hours; and nearly 1 in every two mothers perished when the delivery was delayed till the labour had gone on above forty-eight hours. Obstetricians have often argued, that if, in cases of obstructed labour, the delivery is delayed for a sufficient length of time, the child will be ultimately destroyed by the uterine action and compression, and that thus craniotomy will be at last performed upon the dead infant,—the child being killed by an act of omission, and not of commission. But even such very protracted delay is not always fatal to the infant, some continuing to survive when the labour is prolonged for sixty,

1834, I delivered more than 120 women under transverse presentations, independently of a few cases to which I was summoned, where spontaneous evolution occurred. Many of these cases presented a formidable appearance; for in one, the membranes had been ruptured a whole week; in another, 69 hours; in a third, 58 hours; in another, 55; in another, 53; and in many, more than 48; and, as a general principle, we presume, that the longer the liquor amnii has been evacuated, the more likely is the uterus to have embraced the fetal body firmly, and the more difficulty will there be in overcoming the resistance. In none of these cases did I exhibit large doses of opium, and in those few where bleeding was practised, that operation was had recourse to, not for the purpose of relaxing the rigidity of the uterine fibres, but to relieve the inflammation which the soft structures were suffering, and to remove tumefaction. In not one of these instances was any injury inflicted on the uterine structure by the hand; nor did any permanent evil arise that could be attributed to the operation. In four cases only was the uterus so powerfully contracted as to refuse admittance to the hand, and compel me to adopt the alternative of eviscerating or decapitating the fetus.—*Obstetric Medicine and Surgery*, p. 362.

or seventy, or more hours.¹ And it is always to be remembered, that the delay itself, if dangerous to the life of the child, is also, as the above and other evidence shows, almost equally dangerous to the life of the mother. In such cases of long obstruction and delay, even after the head is perforated by craniotomy, much traction is often required to drag the shoulders through the contracted brim, and that at a time when the structures at the brim are so damaged by previous pressure as to be little able to bear compression with safety. And I do think that we have most ample grounds for believing, that the long compression of the soft parts, such as occurs in very protracted labour, is more truly dangerous to the structures than a short compression of them, greater in amount, such as occurs in the operation of turning when early performed. (See, on this point, *Provincial Medical and Surgical Journal* for 1848, p. 534.)

In not a few cases, in which the operation of turning is resorted to in consequence of the complication which we have been considering, the practitioner must be prepared to meet with such resistance to the passage of the head through the brim as will require some adjustment and considerable physical exertion on his part in order to overcome it. But if the head be so adjusted in the brim, that the shape of the one is, as much as possible, adapted to the shape of the other; if the chin be kept depressed towards the sternum; and if the traction applied be made in the proper axis of the brim itself, no small amount of extractive force may be used without compromising the safety of the mother or infant. The degree of traction which the structures of the infant's neck will, in this way, undergo, is much greater than one would *a priori* suppose. And, as a very general rule, the elastic lateral walls of the cranium of the child will become compressed or indented, before any dangerous injury is inflicted upon the structures of the neck. But on this subject I most willingly substitute, for any remarks of my own, two or three sentences from the work of an author,—always practical and always cautious,—Dr Denman, who, in speaking of the occasional difficulty of extracting the head in common pelvic and turn-

¹ Out of 27 cases reported by Dr Collins, in which labour was prolonged to sixty hours and upwards, in 16 the child was born dead; and in 11 it was still alive at birth. Of the 27 mothers, 1 in 4 died.

ing cases when the brim is somewhat contracted, gives, among others, the following directions:—

"The force with which we endeavour to bring down the head of the child must then be gradually increased, till we are convinced that a greater degree is inconsistent with the safety of the child, or induces the hazard of separating the body from the head. Should the head descend in ever so small a degree, we must not act precipitately, and increase the force in order to finish the delivery suddenly; but we must proceed with circumspection, or we shall add to the danger which the child is already in, and run the risk of doing injury to the mother; though, when the head begins to advance, there is seldom much remaining difficulty, the cause usually existing at one particular part of the pelvis. It has been said, that children have sometimes been born alive, when the strongest efforts, and these continued for many hours, have been made to extract the head detained in this position. But I have not been so fortunate as to meet with any such instances, a short space of time having generally been sufficient to frustrate my hopes, and convince me that the child was dead. Though, when the head has been detained a considerable time, a few cases have terminated more favourably than I could have expected, and I have been agreeably surprised with the discovery of some faint signs of life, which, by the assiduous and careful use of the common means, have been improved, and the life of the child at length perfectly recovered.

* * * When we have in vain exerted all the force which we think reasonable and proper, and which, in some cases, must be more than any circumstance would be thought to require, it will be expedient to rest, for the purpose of gaining all the advantage to be gained by the compression of the head. On this account the mother will actually suffer no more inconvenience than would have been purchased if the head had originally presented, and been locked in the pelvis. After waiting some time, we must renew our attempts to extract, and thus proceed, alternately resting and acting with efficacy and resolution, and if the hold we may have of the body or extremities of the child does not suit, a silk handkerchief or other band may be passed round its neck, and this will be found a very handy and convenient instrument. It must (Dr Denman adds) be a very great disproportion between the head of the child and the pelvis, which is able to withstand this method of proceeding, if we

persevere in it with prudence and steadiness; because the integuments of the head will burst, or the bones be bent inwards in an extraordinary degree, or even broken. * * * (If it fail) it then only remains that we should lessen the head of the child; and the operation may be as easily performed in this as in the natural presentation of the head. When (he continues) the perforation is made, and the brain evacuated, the head may be readily extracted either by pulling by the body of the child, or by inserting a crotchet in the opening made by the operator as in other cases. But it will be scarcely believed how seldom this operation is necessary under these circumstances, if we have not been in a hurry, but have acted with prudence. Nor (concludes Dr Denman) have I ever known any ill consequences follow the compression which the soft parts undergo between the head of the child and the sides of the pelvis, if proper attention were afterwards paid to the state of the bladder and rectum."¹

¹ Introduction to the Practice of Midwifery. P. 495, etc.

ARTICLE IV.

MORBID DEFICIENCY AND MORBID EXCESS IN THE INVOLUTION OF THE UTERUS AFTER DELIVERY.

THE enormous increase which occurs in the parietes of the uterus during the nine short months of pregnancy has long attracted the attention of professional observers. It is a kind of physiological hypertrophy unequalled, either in regard to its magnitude or its rapidity, in any other organ in the adult human body. For, during the forty weeks of utero-gestation, the uterus enlarges from nearly 3 inches in length and $1\frac{1}{4}$ of an inch in breadth, to 12 or 15 inches in length and 9 or 10 inches in breadth. It increases from about 2 ounces in weight to 25 or 30 ounces. The cavity of the uterus before impregnation is less than one cubic inch, while at the full term of pregnancy it is extended to above 400 cubic inches; and the surface of the organ increases from about 5 or 6 square inches to nearly 350 square inches. Before impregnation, the uterine cavity would not hold above a drachm or two of fluid; at the ninth month of utero-gestation, its contents usually weigh from 120 to 150 ounces.

The rapidity, however, with which the uterus diminishes in size after delivery, is perhaps still more marvellous than the rapidity with which it increases in size after impregnation. The celerity of its involution in the puerperal state is in fact more striking and remarkable than the celerity of its evolution during the pregnant state. If the process of absorption of organs in the adult is ever studied successfully anywhere, it will probably be by making observations on the reduction or involution of the uterus in women or in the lower animals subsequent to parturition.¹ Whilst the human uterus takes

¹ In the Swedish Hygieia of last year, my friend, Professor M. Retzius, of Stockholm, published some interesting observations on the process by which nature effects the reduction of the puerperal uterus. He found, in a series of

forty weeks to attain the dimensions pertaining to the fully-developed state of pregnancy, it requires only, on the contrary, from four to eight weeks to decrease from the extreme size of the organ peculiar to pregnancy, down to the small size peculiar to the same organ in its unimpregnated condition.

But in the vital mechanism of the involution or reduction of the uterus after delivery, various pathological derangements are liable from time to time to occur. This, like every other process in the animal economy, is apt, for example, to fail, either in the way of defect or of excess. Some years ago, I endeavoured to point out to my professional brethren, that occasionally, as one of the derangements in this mechanism of involution, the uterus is morbidly slow in regaining its original dimensions—its involution becomes impeded or arrested—and the organ is in consequence liable to be found weeks or even months after parturition still so large and unreduced as at first to be readily mistaken for a tumour of the uterus or ovary. I described this peculiar condition of the puerperal uterus, under the name of "Morbid Permanence of the State of Puerperal Hypertrophy,"¹ and illustrated it with the following example:—

CASE I.—During the summer of 1842, I attended, along with Dr Abercrombie, a lady, who, after a premature confinement in the country, had suffered from a smart attack of puerperal fever. After so far recovering for a few weeks, she was sent from a considerable distance into town, to be treated for what appeared to be a large tumour, stretching upwards from the pelvis into the right iliac region. The tumour had not been observed before delivery, and was somewhat painful to the touch. It seemed at first sight extremely doubtful whether the mass consisted of an inflamed uterine fibrous tumour or enlarged ovary, or of one of those chronic purulent collections which are apt to form towards one or other iliac region in connection with puerperal fever or inflammation. The uterine sound, when introduced into the os uteri, passed easily and directly upwards

anatomical and histological observations on the subject, that the process of absorption of the walls of the puerperal uterus was preceded, as absorption of other deposits is, by fatty transformation of its component fibres; and that the blood during puerperal convalescence shows under the microscope a corresponding superabundance of globules or granules of fat.

¹ Monthly Journal of Medical Science, for 1842, p. 1011.

for several inches to the superior end of the tumour, and its apex could be felt there by the hand placed externally. This at once showed the supposed diseased mass to consist of the enlarged uterus. Further examination proved that there was nothing strictly abnormal about the uterus, except its great size. In fact, it was a case where the organ had apparently remained nearly undiminished after delivery, probably from the puerperal attack arresting the usual progress of its absorption and diminution. It decreased rapidly and fully under leeches and other local antiphlogistic treatment.—*Monthly Journal*, iii., p. 1011.

In alluding to the pathological state of the uterus, of which the preceding case is a well-marked example, Dr Lever has adopted the same designation which I originally applied to the affection.¹ More lately (1851), Dr Snow Beck described to the London Medical Society a case of this malady, under the simple term of "A New Disease of the Uterus."² On examining microscopically the structure of the hypertrophied uterus in this instance, no inflammatory or heterologous deposits could be detected; but the tissue of the organ was, it is stated, similar in its histological characters to the tissue of the uterus at the ninth month of pregnancy, except only that its component muscular fibres were smaller in size, or like those of a uterus at the middle period of utero-gestation.

Retarded involution or reduction of the uterus after delivery is not unfrequent in its less marked degrees; especially when inflammatory or febrile action supervenes and interferes with the phenomena of the puerperal state. It is often, for example, observable both during life and after death, in women who are the subjects of puerperal fever, pelvic cellulitis, and phlegmasia dolens. Chronic hypertrophy of the uterus in any excessive degree, from morbidly retarded or arrested involution, is more rarely met with. I have sometimes, however, seen it ten or twelve weeks subsequent to delivery, in the form of an apparent tumour, twice or more the bulk of the normal uterus. In lesser, though still sufficiently remarkable degrees, it often persists for many long months, or even years, after parturition; particularly when combined, as I have repeatedly found it,

¹ Guy's Hospital Reports, vol. ii. (1844), p. 17.

² *Lancet* for 19th April 1851, p. 447.

with antifixion or retroflexion of the fundus uteri, or with the state of prolapsus.

The day after (July 18) the preceding remarks were written, I saw with Dr Retzius the following instance of this combination of retarded involution with retroversion of the uterus, in a lady, who came for advice from the north of England.

CASE II.—The patient, aged 28, and married for three years, was delivered of her first child two years ago. She was so well as to be allowed to leave her bed at the end of a fortnight. The lochia however, were very abundant, and continued for eight weeks. She nursed her child for seven months, and during this period of lactation the menses recurred, as they have done since, regularly, profusely, and each month somewhat prematurely. She complains of pain of the back, weakness, etc. In making a vaginal examination, the body of the uterus, which is retroverted, feels large and heavy, like a uterus at the third month of pregnancy. Its cavity is, as appears by examination with the sound, nearly an inch greater than the natural length. The cervix is large, and fills entirely the extremity of the largest-sized speculum. Its surface is red and congested, but presents no appearance whatever of abrasion or ulceration. The os is most unusually patent, and admits the tip of the finger for about half an inch. The lining membrane of the cervical cavity feels, with the os, hypertrophied, and thrown into prominent folds, and some of the nabothian glands are much enlarged. The hypertrophied body and fundus of the uterus seem quite free from fibrous tumour, or any other heterologous disease.

Sometimes hypertrophy of the uterus, from reduction or arrested sub-involution of the uterus, follows upon abortion or premature labour. I have at present the following instance under my care:—

CASE III.—The patient, æt. 35, and the mother of six living children, had a premature labour on the 11th December 1851, under the charge of my friend, Dr Dickson, of Bathgate. The labour came on about the fifth or sixth month of pregnancy, and was in itself simple and easy. The convalescence, however, proved slow

and imperfect; and she was indeed in a great measure confined to bed for three or four months afterwards. The lochial discharge stopped on the second or third day. Menstruation has recurred regularly, but with some degree of menorrhagia. There is slight leucorrhœa. The uterus feels heavy and hypertrophied when examined per vaginam, but without any organic disease in its walls. The cervix is also much enlarged, particularly the anterior lip, which is considerably thicker than the posterior. Immediately around the os there is a line or two of granular ulceration. The uterine cavity measures between three inches and three inches and a half.

The preceding instances and remarks refer to deficient, impeded, or arrested involution. But a morbid *excess* of involution or reduction in the uterus after delivery (*super-involution*) is still more rare than a morbid *defect* in it (*sub-involution*); and I am not aware that hitherto any obstetric pathologist has described the former as a diseased state of the uterus. The following remarkable instance of such super-involution, as ascertained both during life and by dissection after death, has lately fallen under my notice:—

CASE IV.—The subject of this rare pathological affection began to menstruate at the age of thirteen; and the catamenia recurred regularly every four weeks till she became pregnant when eighteen years old. Utero-gestation went on without any unusual phenomena to the full term; and her parturition was natural but tedious, a male child being born after a labour of seventeen hours. Nothing unusual occurred during her puerperal convalescence and lactation. But subsequently to delivery she never menstruated. She was, however, subject to frequent attacks of diarrhœa, which she herself believed to be generally most severe at recurring monthly intervals; and the dejections were then sometimes tinged with blood.

Two years after her accouchement, she became a patient in the female ward of the Royal Infirmary, complaining of the state of amenorrhœa, with attendant broken health. She suffered from pain in the back and hypogastrium, with a sensation of weight and pressure in the pelvic region; dysuria; a furred tongue; and a weak compressible pulse, generally beating from 80 to 90 in the minute. She was thin, feeble, and anæmic in appearance. The mammae were shrunk and flat. For some time before admission she had

suffered much from occasional headaches and giddiness; frequent nausea and vomiting; palpitation and occasional rigors.

On making a vaginal examination, I found the uterus small and mobile. The cervix uteri was much atrophied, and the vaginal portion of it scarcely made any projection into the canal of the vagina. The os uteri was so much contracted as to admit a surgeon's probe with difficulty. It was dilated by a slender bougie being left in it for two or three days; and, when the uterine sound was subsequently used, the uterine cavity was found to be only one and a-half inches in length, or about an inch less than normal.

A variety of means were employed with the view of benefiting the general health of the patient, and of exciting action in the uterine system, but with little or no effect.

Diarrhœa repeatedly occurred during the three or four weeks she remained under my care, requiring the free use of opiates for its restraint; and as the uterine symptoms did not at the time seem to admit of special attention and treatment, the patient was transferred to one of the general wards of the hospital, where she was placed under the care of my colleague, Dr Bennett.

During the following month, the diarrhœa recurred from time to time very severely. At last, anasarca in the lower extremities and albuminuria supervened; ascites followed; and shortly afterwards her face and arms became oedematous. About a month after these symptoms appeared, delirium at last came on, the feces passed involuntarily, and ultimately she died in a state of prolonged coma.

On post-mortem inspection, some crude tubercles were found in both lungs,—especially in the left. The liver was enlarged, and showed some fatty transformation. The kidneys presented also some steatoid degeneration; and in the right there was, in addition, a small tubercular abscess. The large intestines were very much thickened in their parietes, and contracted in their calibre; while their mucous membrane was ulcerated in various parts. Along the lower end of the ileum several large ulcerations were seen running circumferentially around the interior of the bowel. One or two ulcerations were also found in the stomach. The uterus was very small, and atrophied in its length and breadth; its size being diminished about a third below the natural standard in all its measurements; and its parietes were correspondingly thin and reduced. The whole length of the uterine cavity from the os to the fundus



was not more than one inch and a-half, while the normal uterus usually measures in this direction two inches and a-half. When a section was made of the posterior wall of the organ, the thickness of its parietes at their deepest or most developed point was not above three lines, instead of the normal measurement of five or six lines. The tissue of the uterus appeared dense and fibrous, and the section of it presented the orifices of numerous small vessels. The ovaries seemed also much atrophied, and smaller than natural. Their tissue was dense and fibrous, and presented no appearance of Graafian vesicles. There was no inflammatory deposit on the peritoneal surface of the uterus or its appendages; but some thick pus, or tubercular matter, existed in the distended cavity of the right Fallopian tube.

The woodcut on the opposite page presents the uterus and upper part of the vagina, the broad ligaments, and ovaries—of the exact size which they presented, and their degree of atrophy may be easily judged of by comparing the sketch with the same parts when of a normal size. The sketch represents the posterior surface of the uterus and broad ligaments, with the uterine cavity exposed, in order to show the diminished thickness of the parietes of the viscus. The whole parts represented in the wood-cut weighed only one ounce, four drachms, twenty-five grains, in apothecaries' weight.

In females, subsequently to the cessation of the menses, the uterus, along with the ovaries, undergoes a slow but marked reduction in size. The uterus in this way, in some extreme instance, recurs, subsequently to menstruation, nearly to the small dimensions appertaining to it previously to puberty; it becomes atrophied and shrunk in all its measurements and dimensions; the vaginal portion of the cervix can be specially felt flattened and reduced in size; and occasionally the canal of the cervix, especially at its upper part, is found so contracted as not to admit of the passage of a probe. This form of senile atrophy of the uterus is doubtlessly connected with the natural suspension of the functions of the reproductive organs; and in this respect is so far similar to the results which we sometimes see in other viscera, as the testes, when the functions of these viscera are arrested in the course of nature, or when they happen to be prematurely suspended by chronic inflammation, or other forms of disorganising disease.

The principal peculiarities in the instance of the marasmus, or atrophy of the uterus, which I have detailed, are two-fold:—1. The occurrence of the affection in a very young female, as a consequence of pregnancy and parturition; and 2. The excessive degree of that atrophy or super-involution,—the uterus being, as we have seen, reduced fully a third in size below its natural dimensions.

During the last few years, I have seen a number of cases of permanent amenorrhœa connected with an atrophied, or rather undeveloped, condition of the uterus. In these cases, the cavity of the uterus generally measures from one and a-half to two inches in length, as ascertained by the use of the uterine sound; the shrunk cervix usually projects but slightly into the cavity of the vagina; and the opening of the os is small and contracted. In these cases, the uterus has apparently not taken on its usual degree of evolution and growth at the period of puberty. The organ, by a kind of malformation from defective development (as teratologists would describe it), retains after the date of puberty the type and size which normally pertain to it in the state of girlhood. But the particular case of under-sized uterus which I have described in the preceding paragraph is quite different from these; for in it the uterus, after being fully developed at puberty, and after performing normally the several functions of menstruation, pregnancy, and parturition, returned, as it were, suddenly to the type peculiar to the organ antecedently to the commencement of menstrual life; or, perhaps, we may more correctly say, it assumed, at the early age of nineteen, by an excess of the natural involution or absorption pertaining to the puerperal state, a degree of anatomical atrophy of its structures, and physiological arrestment of its functions, such as does not occur normally till the age of forty-five or fifty; and even then, at that advanced period of life, the degree of physical reduction in the size of the organ only rarely becomes so very great as was observed in the case which I have detailed above.

The case itself affords no precise data for determining whether the atrophy of the ovaries and uterus stood to each other in any respect in the relation of cause and effect; or whether they were both simultaneous results of one common agency.

Instances from time to time occur, in which, as in the preceding case, permanent amenorrhœa follows parturition. It will not, of

course, be found that all such instances depend upon excess in that process of natural absorption or involution which follows upon delivery. But the case in question shows that this super-involution of the uterus may be expected to be met with in some instances in connection with this type of amenorrhœa.

At present I see professionally, from time to time, a case in which amenorrhœa has followed parturition, and in which the uterus is also reduced below its natural size. The following are the principal points in its history:—

CASE V.—The patient, now aged 30, has been married ten years. She has born three children. From the time of her third labour (which occurred four years ago), no menstruation has recurred. The catamenia thus ceased at the age of twenty-six. After this third labour she made a good recovery, and left her bed on the eighth day. She nursed the child for fourteen months. I first saw her about two years subsequently to the birth of her last child. She then supposed herself to be again near her confinement; but the case was only a marked example of spurious pregnancy. The uterus, instead of being enlarged, felt looser and smaller than natural; and the vaginal portion of the cervix was specially reduced below the natural standard in length and breadth. The cavity of the organ was somewhat diminished below the usual length, and did not allow the stem of the sound to pass up to quite two inches and a half. In this patient the mammae are flat and atrophied; and she is thin, weak, pale, and impaired in health and strength.

Sometimes super-involution of the uterus follows abortion, or premature labour. During the present month, I have had placed under my care an instance of this complication, in a patient from Canada.

CASE VI.—A mother of eight living children, now aged 35, had, on the 29th July 1851, a dead premature child, about the sixth or seventh month, under the charge of Dr Campbell. Nothing occurred to impede her convalescence. Before, however, her confinement, her health was not so good as usual, and she was disappointed to find it remained so after delivery. She has only once seen the catamenia during the past twelve months—viz., in Septem-

ber. There is slight leucorrhœa. She is anæmic and chlorotic, with palpitation, etc. The mamma, which she states were previously very full and large, are now shrunk and flaccid. The uterus is of nearly its natural length, but the vaginal portion of the cervix is very short and atrophied, with the lips somewhat everted. The superior portion of the cervix, above the reflexion of the vagina, can be felt small, firm, and cylindrical; and the body and fundus of the uterus, when grasped between the left hand placed above the pubes, and the two first fingers of the right hand introduced per vaginam, appears under examination unusually mobile and slender, and altogether reduced below the usual standard of size.

ARTICLE VI.

NOTES ON THE THERAPEUTIC ACTION OF FURFURINE,
NICKEL, Etc.

For many centuries past, the principal and most important additions which have been made to the *Materia Medica* have been in the form of substances or principles derived from the vegetable kingdom. But new, and perhaps still more potent, remedies will in all probability be yet derived from other sources. Chemistry is daily multiplying upon us the already almost innumerable class of organic compounds. Some of these compounds will no doubt yet be found to possess powerful and important therapeutic properties. Chloroform is an instance to which I may venture to refer in illustration of this remark. Again, among the most potent therapeutic instruments in our present pharmacopœias are to be reckoned the vegetable alkaloids. Modern chemistry has, as is well known, found out the means of forming artificially several alkaloid substances analogous to those existing naturally in the vegetable kingdom. Upon some of these I have made experiments, but particularly upon furfurine,—an alkaloid that produces, in experiments with poisonous doses upon the lower animals, many of the symptoms of quinine; and the salts of which I have found to act as a tonic, if not as an antiperiodic, when exhibited to the human subject.

Our modern pharmacopœias contain preparations from the oxides or salts of various metals, as antimony, arsenic, bismuth, copper, iron, lead, mercury, silver, and zinc, besides metalloids and metallic earths. Some of these possess the most decided and valuable therapeutic action upon the human economy. But all, or almost all, of these metals were already used medicinally by the ancient Greek and Roman physicians; and though in later times the list of known metals has been greatly increased by the researches of chemists, the therapeutic action, if any, of these metals has not been made a mat-

ter of research by medical men. It seems, however, *à priori*, highly probable that some of the new, like some of the old, metals, will turn out to have decided, and it may be important therapeutic properties. At all events, few fields seem so likely to yield new therapeutic results—if such results are to be obtained at all—as experiments and observations upon the preparations and salts of those metals that have hitherto not been tested medicinally.

Last year, impressed with these views, I began making various therapeutic experiments upon myself and others with different metals, as cadmium, iridium, tellurium, etc. I have had little leisure to prosecute the inquiry. But I have obtained some results which seem to me not without interest or importance. One of the new metals which I have used most frequently is nickel. As with the others, I have used it generally in the form of a salt (a sulphate), believing that, as in the case of the metals already known, the use of one of its salts would give a sufficient view of the generic medical action of the metal.

Sulphate of nickel has appeared to me to act as a gentle metallic tonic. I have generally used it in doses of half a grain or a grain, repeated thrice daily; and have given it in the form either of simple solution or of pill. In large doses it is liable, like sulphate of zinc or copper, to produce sickness and nausea, particularly if taken upon an empty stomach. I have generally requested it to be taken half an hour or an hour after meals. It has appeared to me, as the result of pretty numerous experiments and observations, that the therapeutic actions of the salts of nickel and manganese correspond in a considerable degree with the therapeutic actions of the salts of iron upon the economy; and that these three metals might, under many conditions, be almost used as therapeutic substitutes for each other. But they also specifically differ from each other in some respects. For example, in one most interesting case the sulphate of nickel arrested a severe form of periodic headache, which had previously defied iron in many different forms, and all other kinds of treatment that had been employed. The patient came from Italy last autumn, in order to place herself under my professional care; and for some months I was as unsuccessful as my predecessors had been in affording her any relief. But let me give the history of the affection, and the ultimate result, in the lady's own words. She drew up the following note of her case several weeks ago:—

"My headaches (she writes) came on soon after my second confinement in August 1847, and continued to return every tenth day without intermission, up to the 1st of February 1852. During the first four years I was in Italy, and was attended by medical men of all countries—English, French, German, and Italian. I also tried hydropathy and homoeopathy, the latter for six months, but all without the slightest effect. The pain came on in a small spot on the right temple, and lasted from twenty-four to thirty-six hours. After the first eight hours severe sickness followed, which continued up to the sixteenth hour. During the attacks I had violent cold shivering fits, succeeded by a burning fever. At times I was quite delirious from the violence of the pain. I have taken large doses of steel, iron, and quinine, besides many other sorts of medicines. The quinine I took at first only two days before the attack was expected. I then took six grains every day for a year and a half, but it never put off the headache a moment beyond its day and hour, nor would anything that I could do bring it on before the time. When I first came to Scotland to be under the advice of Dr Simpson in August 1851, he gave me thirty grains of quinine a-day for three days before the headache was to come on; but it returned to its hour, and as severe as ever. This was tried also with the next fit, with no better success. Dr Simpson then tried successively fufurine, beerine, and arsenic, but the headaches still continued up to the 1st of February 1852, on which day I had a most severe attack. On the 4th of February, he gave me the solution of sulphate of nickel to take; since which time, to my astonishment, my usual headaches have altogether disappeared."

To the preceding account I have merely to add, that, if we may judge from the result up to the present time, the cure of this patient from the use of nickel appears entire and complete. And perhaps it is but proper to remark, that this result seems fairly attributable to the action of the nickel alone, inasmuch as there was no relief under the use of any of the means or medicines previously employed for years; while convalescence distinctly began from the date of the employment of the metal in question.

Further, it is perhaps not unimportant to observe, that while the disease had lasted four years without abatement, its subsidence in February could not be the result of change of climate, as the lady had already resided about five months in Edinburgh or its neighbourhood,

without any noticeable amelioration in the recurrence and intensity of the headaches; and at last they disappeared under the nickel, at a period of the year—viz. the commencement of spring—at which, in our climate, headaches and other periodic diseases are known to be specially liable to become increased and aggravated.

In no kind of case is the beneficial action of iron more remarkable than in the treatment of chlorosis and amenorrhœa. I have seen nickel in a similar way apparently serviceable under the same circumstances. In the latter end of last year, I gave it in a case of amenorrhœa of ten years' duration. The amenorrhœa supervened at the age of twenty-two. At the same time a galvanic intra-uterine bougie was introduced, and left for some time in the cavity of the uterus. In the course of three or four weeks menstruation took place, and has recurred regularly from that period. In such a case, however, it is difficult to say how far the result was attributable to the local means used, and what share the nickel had in the restoration of the patient's health.

ARTICLE VII.

ON THE POSITION OF THE PATIENT FOR PARACENTESIS IN OVARIAN DROPSY, AND ON THE PLACE OF PUNCTURE.

WHEN paracentesis is resorted to for the relief of ovarian dropsy, the method in which the operation is performed among us, is generally, if not invariably, the following:—The patient is seated more or less upright upon the edge of the bed, or upon a chair,—a broad bandage is placed around the lower part of the trunk, and the two ends of it, crossed behind, are each entrusted to an assistant, with the view of pulling and tightening it as an abdominal compress, in proportion as the fluid is evacuated,—and a small opening is cut in the anterior part of the bandage, as an aperture by which a trocar of sufficient size is introduced through the abdominal parietes into the ovarian cyst.

The bandage or compress encircling the trunk, is generally alleged to be used with two objects—*first*, To aid by abdominal pressure in the evacuation of the ovarian fluid; and *secondly*, To secure the patient against the chances of faintness and syncope upon the sudden withdrawal of such a large quantity of fluid from a person seated in the upright position. Different kinds of compressing bandages, as linen, flannel, caoutchouc cloth, etc., etc., have been recommended to be employed; and the ends of them are sometimes slit or perforated, with the view both of making the compression exerted by them more complete, and of allowing the bandage to be run and applied more easily and accurately in proportion as the abdomen diminishes in size, during the evacuation of the contained fluid through the trocar. I have seen the operation of paracentesis in ovarian dropsy performed often, and by many different hands; but I have rarely seen the bandage run correctly, even when in the first instance it was most carefully applied, and afterwards as carefully pulled by the two assistants in charge of the

two ends of it. As the fluid is gradually evacuated, the bandage, in fact, is ever liable to lose its proper adaptation to the diminishing shape of the abdomen; or it becomes oblique in its position, and pressing upon the canula of the trocar, threatens to displace it; or, as sometimes happens, it rolls up, and strongly compresses one circle or portion of the abdomen, leaving the other parts of the abdominal tumour comparatively uncompressed and unsupported. Besides, any one who has acted as an assistant in a case of tedious tapping, knows that the mere pulling at the end of the bandage is a task sufficiently irksome and fatiguing.

Latterly, when performing the operation of tapping in ovarian dropsy, I have placed the patient in the horizontal position, and dispensed entirely with the use of the compressing bandage during the operation, with, I think, no small advantage and relief to the patient, to myself, and to my assistants. If the patient be placed in the supine position, there need be no dread of the tendency to fainting and syncope, for the prevention of which the bandage is specially recommended; and at the same time, the contents of the dropsical cyst or cysts, are, it appears to me, even more easily, and certainly more completely evacuated, than when the operation is performed with the patient placed in the upright position.

In tapping an ovarian cyst in the horizontal position, the patient requires to lie as near the front of her bed or couch as possible, with the face of course turned towards it, and indeed, with the distended ovarian sac projecting if possible over the edge of the bed. If it is previously and accurately known that it is the right or left ovary which is affected, and that there is a prospect of the tumour being very completely evacuated of its contents by the operation, the patient should lie upon the right side if it be the right ovary, and upon the left side if it be the left ovary that is diseased. The trocar is then introduced into the distended cyst at the usual part in the abdominal parietes, and with the usual precautions. Towards the termination of the operation, the most complete evacuation of the cyst may be secured when necessary by turning the patient somewhat upon her breast, so as to make the puncture as dependant as possible,—and, when necessary, by compressing the abdominal parietes with the hands—the latter, a proceeding which requires to be followed in most cases of paracentesis in the upright position. One great danger attendant upon tapping an ovarian cyst, consists

in the liability of air to go backwards into the emptied cavity towards the latter part of the operation, when the stream through the trocar becomes imperfect, or actually intermits in consequence of the irregularity of the abdominal compression. I believe that this accident, and its consequences (inflammation of the walls of the cyst from decomposition of its remaining contents), will be found to be much less liable to occur when the patient is tapped in the horizontal position, and the parietes of the abdomen are allowed to compress the cyst merely by their own elasticity, and by the external pressure of the atmosphere, than when the operation is performed with the patient sitting upright, and with the compression in a special degree entrusted to the proper adaptation and action of a bandage, the mechanism of which is not easily regulated. Let me further add that the preparations for the operation are far less formidable to the patient when the tapping is performed in the horizontal position and without bandages; and, besides, the necessity of assistants to manage the bandage is dispensed with. The compression itself of the bandage amounts to a feeling of distress and suffering with some patients; and I have been strongly assured by those who have been tapped at different times in both ways, that the absence of the bandage, combined with the horizontal position, were great advantages to them, as far as their feelings and comfort were concerned. It is almost unnecessary to add, that the edge of the bed requires to be protected by several plies of sheeting or towels; and, if deemed necessary, a bandage may be placed round the abdomen, when the patient lies back in bed subsequent to the operation, particularly if the abdominal parietes are greatly relaxed, and the remaining mass of ovarian tumour feels very loose and mobile in the cavity of the abdomen. Sometimes, however, I have dispensed even with this secondary bandage.

In performing paracentesis for the evacuation of an ovarian cyst, the trocar is usually introduced in one of two situations, viz.,—either centrally, in the course of the *linea alba*; or laterally, in the course of the *linea semilunaris*. It perhaps is of little moment which of these two places is adopted, provided only the trocar is introduced in a situation in which the fluctuation is very distinct, and the parietes of the cyst thin and equal, and in which, therefore, the instrument easily reaches the cavity of the cyst.

In selecting the place of the puncture, it must be held in remembrance, that various causes may render the introduction of the trocar at particular sites difficult and dangerous; and that the presence of one or other of these causes should induce us to select another situation. For example:—*First*, The chance of wounding the urinary bladder must be avoided. The evacuation of the organ immediately before the operation, is our best security against this. *Secondly*, The uterus is sometimes elevated and drawn upwards in front of an ovarian tumour, and has been fatally wounded by the trocar in the operation of paracentesis. This ascent and displacement of the uterus, can be ascertained before the operation; and all chance of injuring it would be avoided, if, as I have already stated, a point in the cyst sufficiently fluctuating and thin in its parietes, be selected as the site of the puncture. *Thirdly*, Ovarian cysts have been occasionally found so turned upon their axes, that the elongated Fallopian tube has stretched across the front of the diseased ovary, and interfered with the introduction of the trocar; and a dense fibrous state of the cyst at particular parts has led to the same mischance—the cyst thus becoming merely displaced and not perforated by the pressure of the point of the instrument. A case of obstruction to tapping from this cause is detailed by Dr Bright in the Guy's Hospital Reports. The puncture, in consequence, must not be made over a point which feels unequal and condensed in its structure. *Fourthly*, In the later stages of ovarian dropsy, the tumour often compresses so much the contents and parietes of the abdomen, that the circulation of the blood through the abdominal portion of the vena cava is much interfered with. I have twice, in dissections of ovarian dropsy, seen the cavity of the vena cava obstructed from this cause. In consequence, a *vicarious* venous circulation is set up in many cases through the superficial veins of the abdominal parietes; which hence become greatly enlarged. These veins are often seen of the size of goose-quills or larger, and running immediately beneath the skin. In paracentesis, the wounding of one of these large veins with the trocar must be carefully avoided. *Lastly*, The epigastric artery has been opened by the instrument in ovarian paracentesis. It is on this account that some authors have advised us to select the *linea alba* in preference to the *linea semilunaris*, as the site of puncture. Mr South relates a case, however, in which this artery was fatally

wounded when the tapping was made in the first of these sites—the *linea alba*. Common care, and a little examination beforehand for the seat of a pulsating artery in the thin and distended abdominal parietes, should enable us to avoid this source of danger. And if we avoid this difficulty, and at the same time select as our proper site for the operation, the part where the fluctuation is most distinct, and the parietes of the sac most thin and equable, it matters not whether that be in the course of the *linea alba* or of the *linea semilunaris*. The latter is perhaps the best, because the most dependant site, if we have our patient lying, during the operation, in the horizontal position.

It has been suggested by Callisen, Macarn, Delpech, Recamier, Arnott, and others, that dropsical ovaries should be tapped through the roof of the vagina in preference to the abdominal walls. If the so-called ovarian cyst is unilocular, its contents may certainly be evacuated by this means, as well as by tapping through the parietes of the abdomen; and I have more than once evacuated the contents of a dropsy of the Fallopian tube, by introducing the small trocar, which forms the usual exploring needle, in this position. In one of these cases the elongated sac formed by the distended Fallopian tube inflamed after its evacuation, and, in consequence, seemed to become entirely obliterated. The patient, a lady from New York, had previously been almost incapacitated from taking exercise, and had been in bad health for several years. Since her return home, she has been pregnant, and borne a dead child. But it is excessively rare that a true ovarian dropsy, so distended as to require tapping, is unilocular. In forty-nine cases out of fifty, or perhaps in a larger proportion, the enlarged ovarian dropsy requiring the operation of paracentesis, consists of the multilocular form of degeneration of the organ. And in this compound or multilocular cystic dropsy of the ovary, paracentesis by the vagina can very seldom readily or safely evacuate the contents of the diseased mass. For, in the operation of paracentesis in the common multilocular form of ovarian dropsy, we evacuate merely the contents of the *largest* cell or cells in the mass; and we reach this largest cell or cells easily through the abdomen, but cannot usually reach them readily, through the vagina. This important circumstance depends upon a simple pathological law, which has not been adverted to, as far as I know, in any of the numerous

essays or observations which have been published on ovarian disease. Cystic tumours of the ovary, like other morbid tumours and collections, increase always most readily and rapidly towards that direction in which there exists the least physical resistance to their growth; and, on the other hand, most slowly and imperfectly towards that side or sides on which they meet with most opposition to their mechanical development and increase of size. Ovarian tumours do not usually grow readily, or largely, towards their inferior or pelvic sides, because the resistance of the floor of the abdomen and pelvic parietes offers in that direction sufficient impediment to their development. But they increase and develop readily in an upward direction towards the abdomen, because in that direction they meet with comparatively little resistance or opposition to their growth. And while the cells in the pelvic portion of the remaining multilocular tumour, are (as far as I have examined them in a considerable number of preparations and dissections) usually very small in size, however great in number,—we have on the contrary, in consequence of the above pathological law, the largest cyst or cysts in the mass generally, if not always, placed, *first*, at the upper or abdominal extremity of the tumour,—and, *secondly*, on the anterior part of the abdominal tumour, rather than on its lateral or posterior parts; the cyst or cysts in front growing more readily, because they are less resisted in their growth by the abdominal parietes in front, than the cyst or cysts placed towards the sides or back of the tumour, inasmuch as these latter are repressed by the denser fabric of the lateral and posterior walls of the abdominal cavity of the patient. It is, I repeat, in consequence of this pathological arrangement, that, fortunately, by the operation of abdominal paracentesis, we are usually able to evacuate the largest cyst or cysts in the mass; and in consonance also with the same law, the contents of such more prominent cyst or cysts are usually far more fluid, and hence more easily capable of being evacuated through the trocar, than are the contents of the more condensed and undeveloped cysts of the tumour. In fact, the larger and more anterior cyst or cysts have often their contents sufficiently fluid for evacuation by paracentesis, at the very time that the more undeveloped and more compressed cysts still contain a thick gelatiniform matter quite incapable of being evacuated through any trocar.

It is almost unnecessary to add, that the horizontal position of

the patient answers as well for paracentesis in ascites as for paracentesis in ovarian dropsy. It sometimes happens that the two are combined in a greater or less degree. A few days ago I saw, with Mr Goodsir, a case of this combination, viz., a very large multilocular ovarian tumour floating in, and surrounded by, a quantity of ascitic fluid. On placing the patient in a horizontal position, the ovarian cyst was first evacuated of its contents, which were of a very dark brown colour, and mixed with old-effused blood. After the ovarian cyst was completely emptied, a second puncture of the abdominal parietes was necessary, while the patient was still lying in the horizontal position, to remove the collection of ascitic fluid.

ARTICLE VIII.

ASCENT OF THE UNIMPREGNATED UTERUS (*Elevatio Uteri*).

No subject in uterine pathology is better known to the practitioner than the displacement of the uterus downwards, or the so-called *Prolapsus Uteri*. But the occurrence of the ascent, or displacement of the uterus upwards, has been left comparatively unnoticed. In the preceding observations on paracentesis, I have alluded to its elevation and position upwards in front of an enlarged ovarian tumour, as occasionally rendering it liable to be injured by the trocar of the surgeon. Voison has published a case in which the elevated uterus was fatally wounded from this cause, in the operation of tapping an ovarian dropsy.¹ I have seen several instances of multilocular dropsy of the ovary, in which the uterus was drawn up and elevated more or less in front of the ovarian tumour, but only very rarely so as to be beyond the reach of the finger. The same upward displacement, or *Elevatio Uteri*, occasionally happens in connection with the presence of fibrous uterine tumours. In cases of fibrous tumours, I have known this displacement so great that the os and cervix uteri could not be readily or at all reached by a vaginal examination with the first finger or fingers of the right hand, till the mass of the tumour was pressed downward, and, at the same time, somewhat rotated forwards upon its transverse axis by the left hand placed externally upon the abdomen. Within the last two weeks, I have met with an instance of this elevation of the uterus to a higher degree than I remember to have previously observed. The displacement in this instance has occurred in connection with the presence of several large fibrous tumours in the uterine parietes.

CASE I.—The patient, aged 40, had been married twenty years,

¹ Recueil Periodique de Médecine, vol. vii. p. 362.

had born one child about a year after marriage, but had never been again pregnant. The abdominal cavity is now distended by a mass of dense firm fibrous uterine tumours, which stretch upwards to nearly the scrobiculus cordis, and are altogether as large as the uterus in the eighth month of pregnancy. The mass consists of one great tumour stretching upwards above the umbilicus, and superadded to this are several comparatively smaller masses above and laterally, forming tuberosities and projections upon the sides of the larger central tumour. One of these smaller tumours, situated towards the left side, of a flattish form, and about two and a half inches broad, is pediculated and mobile, like a peritoneal polypus. On examination per vaginam, a rounded elongated portion of the largest tumour is felt pressing low down into the pelvis, and filling up the space in front of the rectum. The vagina, from the lowest point of the tumour upward, is narrowed and flattened between the tumour and the pubis; but the finger, when passed along this contracted canal, cannot reach the os or cervix uteri. In fact, a sound passed into this canal, runs a considerable distance upward from the vulva before it touches the upper extremity of the vagina, and consequently before it reaches the cervical portion of the elevated uterus; and the end of the sound arrested at the junction of the vagina and uterus, can be felt through the abdominal parietes as high as two and a half inches above the upper edge of the symphysis pubis. The body of the uterus can be felt as a flattened projecting mass above this part.

This patient, who has come for medical advice from Australia, was there considered to be labouring under ovarian dropsy; and it was supposed to be a case admitting of removal by operation. But that it is a fibrous tumour, and not a multilocular dropsy of the ovary, is certain from its slow growth, from the density of the tissue of the tumour, from the arrangement alluded to of superadded external tumours, and from one of these superadded tumours having become pediculated like an external polypus,—a morbid arrangement which we never see in ovarian disease. Besides, there is this common, and, as I believe, pathognomonic sign present, that in various parts of the larger tumour, and particularly on its right side, a loud souffle is heard synchronous with the pulse, when the stethoscope is used,—a phenomenon very common in fibrous tumours imbedded

in the substance of the parietes of the uterus, but which I have never met with in any instance of dropsical disease of the ovary. The affirmative evidence of the enlargement being a fibrous uterine tumour which can be usually derived from the simultaneous movement and union of the mass of the tumour, with the body and cervix uteri (under a combined abdominal and vaginal examination), is here of course wanting; in consequence of it being impossible to reach the elevated uterus. Nor, for the same reason, can we take advantage of those other means of diagnosis between fibrous tumours of the uterus and cystic degeneration of the ovary, which depend upon the respective measurements of the length of the cavity of the uterus in these two diseases, as ascertained by the employment of the uterine sound.

At present I have under my care, from Berwickshire, a case of very large fibrous tumour of the uterus, in which the os uteri is elevated above the pubis; though not to the great height mentioned in the preceding instance.

CASE II.—The patient, æt. 38, has been married seventeen years, but has had no family. Menstruation has been regular; and only lately somewhat menorrhagic. Her general health is good. About ten years ago she first noticed an abdominal enlargement, which has gradually and slowly increased. The tumour is now of as great size as the uterus at the ninth month of pregnancy. It touches the lower edge of the ribs upon the right side. Its external form, however, is somewhat irregular, particularly from a large projection upon it towards the right iliac region. The tumour is not so firm in consistence as fibrous tumours generally are; and towards its centre, and near the umbilicus, it feels comparatively so soft as to give a deceitful idea of fluctuation, like that sometimes imparted by subcutaneous adipose tumours. Three months ago a trocar was passed in this situation, without drawing off any fluid whatever. There is a deep musical souffle, synchronous with the pulse, to be heard on the sides of the tumour, particularly on the left side. On making a vaginal examination, the os uteri cannot be reached, but a decreasing, conical-shaped cavity may be felt, passing up in front of the tumour, and somewhat towards the left side. When the patient is placed upon her face, and the finger deeply passed along and behind the symphysis pubis, the os uteri can with considerable

difficulty be touched, lying above the upper edge of the pubis. The uterine bougie, when introduced into the os, passes readily for several inches, showing the uterus to be elongated and hypertrophied upon the side of the tumour. In this instance, there is no projection downwards of the tumour, as in the preceding case, into the pelvic excavation. The pelvic cavity is, in fact, quite free, and the roof of the vagina is altogether higher than usual.

It does not seem difficult to understand the mechanism by which the uterus becomes morbidly elevated in such cases of ovarian and uterine disease, as I have alluded to in the preceding remarks. If an ovarian or fibrous tumour, attached organically to the back wall of the uterus, grow downward upon the roof of the vagina, or, in other words, into the reflection of peritoneum between the rectum and uterus, and develop itself steadily in this its lower segment, the extension of the tumour in this downward direction, upon the resisting roof of the vagina, forces the tumour to lift the uterus (which is attached to the anterior surface or body of the tumour), higher and higher with it during the longitudinal development of the mass to which it is united. The tumour, in its downward longitudinal development, necessarily carries upward more and more the uterus affixed to its anterior part; in the same way as the uterus in its own enlargement during pregnancy carries and elevates upwards the Fallopian tubes and ovaries attached to its two sides. Or the enlarging uterine or ovarian tumour may, as in the second case detailed above, obtain a similar elevating influence upon the uterus, by resting its lower and growing segment upon the pubis or sides of the brim of the pelvis, instead of upon the roof of the vagina; thus ultimately displacing the uterus upwards by somewhat the same kind of mechanism, as the os and cervix uteri are often, in common pregnancy, raised upwards and backwards above their usual level for some time after the uterus expands into the cavity of the abdomen, and rests, during its enlargement, upon the anterior circle of the pelvis.

Morbid ascent or elevation of the uterus sometimes occurs in connection with other morbid states besides the two mentioned,—ovarian dropsy and fibrous uterine tumours. Occasionally, indeed, the cervix uteri, and, consequently, the whole organ, is found placed at an unusual height from the vaginal orifice as a

natural conformation; and in advanced life, when the uterus becomes atrophied, it sometimes is situated higher than natural, with the vagina drawn upwards in a funnel shape. I have seen it displaced upwards from diseased action in connection with, and as a result of, pelvic cellulitis or pelvic abscesses; as well as from the effects of simple pelvic peritoneal inflammation and adhesions (*Perimetritis*).

ARTICLE IX.

ALBUMINURIA IN PUERPERAL AND INFANTILE CONVULSIONS
AND IN PUERPERAL AMAUROSIS, ETC.

ABOVE fifty years ago, Hamilton¹ and Demanet² first stated the important fact, that puerperal convulsions were liable to be preceded by symptoms of anasarca in the pregnant mother. The truth of this remark has been subsequently confirmed in incidental observations made by Duges, Burns, Montgomery, Ingleby, Johns, and others. The special pathological nature, however, of the œdema or anasarca preceding and predisposing to puerperal eclampsia remained uninvestigated, nor was any direct morbid relation attempted to be traced between the dropsy and convulsions. Previously to my first course of lectures on midwifery in the University of Edinburgh in 1840-41, I had, in more than one case, ascertained the œdema or anasarca seen in patients affected with puerperal convulsions, to be one of the numerous and important forms of dropsical disease which Dr Bright had shown to be connected with the existence of albumen in the urine. Up to 1843 I had detected, in repeated instances, this connection of puerperal convulsions with albuminuria, but hitherto I had found it only by examination of the urine during life. In the spring of 1843 I saw a fatal case of puerperal convulsions, in which, in addition to the detection of albuminuria dur-

¹ Duncan's *Annals of Medicine for 1809*, vol. v. p. 313. "Where œdematous swellings of the lower extremities take place to a considerable extent in the latter months of pregnancy in women of an unimpaired constitution, copious blood-letting alone prevents the occurrence of convulsions either before or during labour." See also his *Practical Observations*, p. 354. "The fits are preceded most frequently by lancinating pain of the head, sometimes by crampish pain of the stomach, and sometimes by œdematous swelling of the face and upper parts of the person."

² *Recueil Periodique de la Société de Médecine*, tom. ix. (1801-2) p. 110. He regards "l'anasarque comme une de leurs causes essentielles."

ing life, I had an opportunity of observing the usual Granular Disease of the kidney on post-mortem inspection.

CASE I.—A woman, pregnant for the third time, and whose health had latterly been impaired, was seized with severe puerperal convulsions, in consequence, as her friends supposed, of strong mental excitement. I saw her, along with her medical attendant, about twelve hours after the convulsions began. She was at that time quite comatose in the intervals between the fits. In despite of venesection and various other measures of treatment, which were tried with the hope of relieving and rousing the patient, the convulsions continued, the coma deepened, the extremities became cold, the circulation began to fail, and the patient was evidently hopelessly moribund. The child's heart, however, still continued to beat, as was ascertained from time to time by the stethoscope; and the principal indication left was the preservation, if possible, of its life. The os uteri had, from the imperfect labour which had supervened from the attack of the convulsions, opened to about the diameter of a shilling, but its structures were rigid. In order to extract the child, I followed the plan of turning recommended by Dr Hamilton, and with far more facility than I anticipated *a priori*,—viz., I tilted and pushed upwards and aside the presenting head with two fingers of the right hand introduced per vaginam, while, at the same time, by manipulating upon the child with the left hand through the abdominal and uterine parietes, a lower limb was at last brought near the opening of the os uteri, and seized. The relaxed state of the uterus and parts, resulting from the deep coma of the patient, no doubt greatly facilitated this version. On attempting to drag the body of the child through the os uteri, by pulling at the extended limb, I found the rigid structures of the undilated cervix to resist altogether the passage of the trunk. Under these circumstances, I made two slight incisions into the cervix, one on each side; and on the re-application of extractive force, the breech now passed the yielding os uteri, and the birth of the child was readily effected. The child was born alive, and it survived and thrived well. The placenta escaped without any hemorrhage. The mother died in the course of two or three hours after the birth of the child. A post-mortem examination of her body was made by Professor Bennett. The lateral incisions into the lips of the undilated os, and

the laceration or fissuring accompanying these incisions, were found not to extend beyond the duplicature of tissue forming the vaginal portion or projection of the cervix uteri; and had not been followed by any hemorrhage. There was no blood, fluid or coagulated, in the cavity of the uterus or vagina, or around the incisions. The kidneys presented a well-marked specimen of Granular Degeneration, probably of some standing.

In allusion to the preceding instance, I stated in the "Monthly Journal" for 1843, that this case "offered me the first opportunity of confirming, by inspection after death, an opinion that I had been led to adopt from the examination of the symptoms during life, and had publicly taught for the two last sessions,—viz., that patients attacked with puerperal convulsions had almost invariably albuminous urine, and some accompanying, or rather preceding, dropsical complication, and hence probably granular renal disease."¹

My friend Dr Lever, of London, who happened also to be directing his attention at the same time to the connection of puerperal convulsions with albuminuria, published in the last Number of "Guy's Hospital Reports" for 1843, several cases of puerperal eclampsia, in five of which he had found the urine to be albuminous; and to these cases he appended some excellent remarks on the probable relations between these two morbid states. Of late years the same subject has been investigated, and the connection between albuminuria and puerperal eclampsia more or less elaborately traced and discussed by various continental authors, particularly by Cahen and Bouchut, Rayer, Devilliers and Regnaud, Depaul, Caseaux, etc.

Since the above date (1843) I have seen a variety of cases of puerperal convulsions in consultation and hospital practice, and have always (with very rare exceptions indeed) detected the existence of albuminuria in the urine of the mother. In one or two instances I have found the kidneys presenting traces of recent acute inflammation; as pus, etc. See examples of "Puerperal Convulsions connected with Inflammation of the Kidney," in Monthly Journal for 1847, p. 212. Sometimes, as in the case detailed above, convulsions, or symptoms threatening them, recur in successive labours in the same mothers in connection with established granular dis-

¹ Monthly Journal of Medical Science for 1843, p. 1015.

ease. Usually, however, the state of albuminuria which leads to puerperal convulsions is a transitory morbid condition, from which the patient recovers within the course of a few days after delivery; and the affection does not depend upon, or result in, any actual change of structure in the kidney. And it may be that the premonitory oedema, headaches, etc., and the actual convulsions themselves, do not stand in the relation of effect to albuminuria or renal disease as a cause, but that all of these circumstances—the dropsy, the convulsions, and the albuminuria—are simultaneous or successive effects of some one common central cause, viz., a pathological state of the blood, to the occurrence of which pregnancy in some way peculiarly predisposes, probably from various acts of secretion, nutrition, and depuration being vastly increased and altered by the conditions of utero-gestation. Occasionally, however, the state of albuminuria, when once induced, will continue for several weeks after delivery. Some time ago I attended, with Dr Fairbairn, a case that was peculiar in this respect; as well as from the lateness of the occurrence of fatal convulsions.

CASE II.—The lady had been confined in the country without any symptoms of eclampsia. She came to Edinburgh about seven weeks after her accouchement. When Dr Fairbairn and I then saw her together, her particular leuco-phlegmatic colour, some lesions of the senses, her occasional fits of stupor and want of memory, and the other undefined symptoms of which she was complaining, led me to suggest the propriety of testing the urine, in order to ascertain if it contained albumen. It was found highly albuminous. In the course of eight or ten days subsequently, our patient was suddenly seized with convulsions, followed by coma, under a repetition of which she soon expired. No case has, as far as I know, been put on record, in which eclampsia supervened so very late after delivery.

In the instance just now referred to, the albuminuria was, there was reason to believe, present before the termination of the patient's pregnancy; but did not lead to any attack of convulsions during, or immediately after, labour. And I have now seen a number of such instances, in which the urine was albuminous during the last days or weeks of pregnancy, without convulsions, or any other special morbid phenomena, supervening in connection with labour.

In several of these instances, temporary, and in one or two more permanent, amaurosis supervened at the time of delivery; accompanied in most, but not in all, with intense headache.¹ During the course of the present year, I saw one such case of puerperal amaurosis in connection with albuminuria, in a patient at the sixth month of pregnancy; and the albuminuria in this, as in some other cases, tended to bring on premature labour.

CASE III.—It was the patient's second pregnancy. Her face had looked swelled for a day or two previously. During the night she complained of intense headache. In the morning she complained of such a degree of blindness, that she could not distinctly see objects and persons. The urine was highly albuminous. She was freely bled. True labour pains supervened early in the forenoon. She was placed under the influence of chloroform for some hours, and delivered of a premature child, which was alive, but did not survive. The amaurosis in a great measure disappeared after the bleeding, and the patient's recovery after delivery was speedy and perfect,—the albuminuria passing off within a week subsequent to her confinement.

Lately I have visited, with Mr Sidey, an interesting case of more permanent amaurosis connected with the puerperal state and chronic albuminuria:—

CASE IV.—The patient, now aged 36, is the mother of six children. In 1847, two days after the birth of her fifth child, she became totally blind in the course of a single night, the amaurosis being found complete when daylight came in. The blindness, how-

¹ Drs Bright and Barlow observed amaurosis in four instances of albuminuria, but these cases were not connected with pregnancy. M. Landouzy states, that he has seen thirteen cases of weakness of vision commence, cease, and re-appear with albuminuria, and without any appreciable change in the eye or its appendages. And he considers some degree of amaurosis as a common complication with albuminuria.—(*See Archives Générales de Médecine for Nov. 1849, p. 379.*) Hamilton and other authors incidentally mention amaurosis as a symptom connected with cases of convulsions. Dr Ingleby has published a case in which a patient was affected with common puerperal convulsions in her first pregnancy; and in a subsequent accouchement was attacked with complete amaurosis, which continued during the whole period of her labour. Vision was gradually restored.—(*See his Facts and Cases in Obstetric Medicine, p. 53.*)

ever, gradually and entirely passed off in a few days. During the second week following the birth of her last child in July 1850, she again became suddenly and completely blind, with some accompanying symptoms of stupor, and a very slow pulse. The amaurosis has not, however, altogether disappeared on this occasion, as after the former attack. The patient's vision is still (September 1851) so imperfect that she cannot read; her memory is extremely defective; she often forgets the proper word to use in the middle of a sentence; the iris now contracts, but for some time was dilated and immobile. The last child died of convulsions about a week after birth. Mr Sidey discovered the urine to be highly albuminous upon her first attack of amaurosis, and has found this state continuing in repeated examinations of it from that time to the present.

Four years ago, I met with the following instance of the complication in question:—

CASE V.—A patient who was to be under my care at her confinement, sent for me several weeks before her expected time, to tell me that her vision had become so imperfect, that she found she could not distinctly see the trees placed before her window. There was no other special symptom present; but this degree of amaurosis led me to examine the urine, which I found to be highly albuminous. During the few succeeding weeks, the amaurosis increased, and in addition, symptoms of hemiplegia slowly and gradually came on. Convulsions did not supervene, as I feared they would, during the labour, which was somewhat premature. The child survived. After delivery, the mother recovered greatly, but not entirely, from the nervous lesions, and is still suffering under a slight degree of hemiplegia.

Other lesions of the nervous system may present themselves under the same circumstances. Some of these lesions I have already noticed elsewhere. (See observations "On Lesions of the Nervous System, etc., in the Puerperal State, connected with Albuminuria," in *Monthly Journal* for 1847, p. 288.) In fact, writers upon midwifery have long stated to us as premonitory symptoms of puerperal convulsions various lesions of the nervous system,—as headache, giddiness, derangements of sight and hearing, etc.,—and have told us, that when more or fewer of these symptoms make their appearance, an attack of convulsions is to be

feared in connection with labour, but does not always supervene. These so-called *premonitory* symptoms of convulsions, however, are only in fact so many symptoms of acute albuminuria. They are indicative of the future probability of puerperal eclampsia, inasmuch as they are indicative of the actual presence of albuminuria. And, consequently, whenever they do present themselves, their existence should lead us to examine accurately into the state of the urine,—assured that, if they are found to be connected with albuminuria, we may be certain of the liability of our patient to the supervention of convulsions,—a liability that, no doubt, may be often lessened or averted by proper antiphlogistic treatment before labour, and by using such means as excite and act freely upon the intestinal, renal, and cutaneous secretions.

A few weeks ago I saw an instance in which convulsions in a child after birth were connected with the presence of albuminuria in its urine,—or connected (as it should be perhaps more correctly stated) with that condition of blood-poisoning or uremia, which is the result of albuminuria,—whether that condition consists in a morbid accumulation of urea; or is produced, as Frerichs supposes, by the presence of carbonate of ammonia in the blood; or is, as is more probable, the effect of some other morbid agent in the circulating system, capable (like strychnia) of increasing the centric irritability or polarity of the spinal system to such an excessive degree that, under this super-excitability, comparatively slight eccentric causes of irritation in the stomach, intestines, uterus, bladder, etc. etc., readily induce convulsive attacks of a general form, like those of puerperal eclampsia.

CASE VI.—A lady, pregnant for the first time, was suddenly, when near the full period of utero-gestation, attacked, when rising in the morning, with severe headache, faintness, and threatening of convulsions. My friend Dr Weir, under whose professional charge she was, saw her immediately, and bled her largely at the arm, etc. On making a second visit about three hours subsequently, she took, when he was present, a most severe fit of convulsions, which left her in a state of deep coma. Two hours afterwards I saw the patient with him. She was still comatose, and remained so for some hours subsequently. The child's heart, when examined

by Dr Weir and myself, with the stethoscope, and while the mother was still comatose, had only 88 beats in the minute; but in the evening it had risen to its usual rate of 130. Next afternoon labour supervened; the patient was put under the influence of chloroform for some hours; and a living child was born without any recurrence of the puerperal convulsions. The mother made a slow but perfect recovery. On the third day after birth, the child began to suffer under a succession of convulsive attacks, which gradually increased in severity during the next twenty-four hours, when it was placed for a considerable time under the influence of chloroform inhalation, and the fits ceased. After the convulsive attacks supervened in the child, Dr Weir and I had two opportunities of examining its urine; and on both occasions we found the renal secretion of the infant, like that of the mother, highly albuminous. Some time subsequently the infant died of inflammation of the cellular tissue of the loins and pelvis. We were not permitted an inspection of the body.

I am not aware that any one has hitherto observed albuminuria co-existing with infantile convulsions; but future observation may perhaps show it to be a common pathological condition in some forms of that disease; and probably in the Trismus Nascentium. In such cases, indeed, the urine has hitherto seldom or never been examined, in consequence of the trouble and difficulty connected with obtaining specimens of it in the affections of infancy. Albuminuria may yet be found to play also an important part in other diseases of infancy. The induration of the cellular tissue, or skin-bound disease (Sclérome—"L'Endurcissement ou l'Œdème du Tissu Cellulaire" of French authors) is an extremely rare affection in Edinburgh. I have only seen two cases of it; and, as was stated in the "Monthly Journal of Medical Science" for 1843, page 699, in both of these instances the urine was conglutuable. Hence, at that time, I ventured to suggest, that the skin-bound disease itself, or at least some forms of sclerema, may be a variety or effect of Bright's disease in early infancy; the effusion into the cellular tissue which constitutes the marked feature of the affection, being so far analogous to the anasarca occurring with albuminous nephritis. For the solution of this point, affirmatively or negatively, we can only look to some of those continental pathologists who have ample opportunities of studying the disease in question.

ARTICLE X.

ON INFLAMMATORY AND NON-INFLAMMATORY RUPTURES OF OVARIAN DROPSICAL CYSTS.

THE common multilocular dropsy of the ovary may terminate fatally in various ways when left altogether uninterfered with by art.

In some cases, when the tumour at last reaches those enormous dimensions which it sometimes acquires, the mere strong compression laterally backwards, and forwards, of the diseased mass upon the various abdominal viscera, vessels, and walls, and upwards upon the diaphragm and thoracic organs, proves sufficient in itself to lead gradually on to a fatal termination, preceded by marasmus, exhaustion, dyspnoea, etc. In such instances, there is a slow but increasing physical clog set to the machinery of various organs that are necessary to the continuance of life,—more particularly to the processes of nutrition and assimilation; but latterly, even respiration and circulation come to be more and more interfered with; till at last the impaired and obstructed mechanism of the body is fatally arrested. Very often, however, before such a termination occurs, œdema, particularly of the lower extremities, and ascites, come to be superadded, hastening the fatal result by their presence; and almost always it is also hurried onward by the supervention, during the last stages of the disease, of a greater or less amount of irritative fever.

But patients suffering under dropsy of the ovary do not always die from the mere mechanical increase of the tumour, and its mere mechanical pressure and irritation. Much more frequently *inflammatory action* attacks the walls or dissepiments of the diseased mass during the latter stages of its growth, and expedites the progress of the malady towards a fatal termination. Occasionally the inflammatory action recurs from time to time in the same cyst or in different cysts, accompanied with fever and local pains, generally of a slight and obscure kind. Under repetitions of such attacks, the cysts rapidly increase in size, inflammatory effusions being poured

into their cavities or deposited upon their lining membranes; and sometimes the intervening septa and walls of the tumour become diseased and broken down under them. Its external or peritoneal surface is frequently also the seat of inflammatory effusions, and of consequent local adhesions between it and the neighbouring viscera and surfaces. One or more cysts, left with purulent effusions in their cavities, or with the structure of their walls disintegrated, often enough remain as permanent sources of local and constantly recurrent inflammatory action in the tumour. Hectic fever generally comes to be set up in the system as a consequence; and under the repeated recurrence of such local and constitutional irritation, the powers of life gradually give way.

Again, occasionally, when inflammatory action, whether acute or sub-acute in its course, is present in an ovarian multilocular tumour, it proves fearfully more rapid in its course, and leads to speedy death by a different mode. For when the tumour, in one or more of its cysts, is the seat of acute inflammation, such cyst or cysts sometimes become so over-distended by inflammatory effusions, as ultimately to rupture, and allow of the escape of their contents into the peritoneum. In these cases, the walls of the over-dilated cysts are occasionally rendered friable and lacerable in their structure by the inflammatory action of which they are the seat, and in consequence of this morbid softening of tissues, the rupture in question the more readily occurs. In one or two cases, I have seen the walls of the inflamed and ruptured cyst present ulcerations upon its interior, the perforation of the cyst in such instances being begun by ulceration of the lining membrane and tissues of the cyst, and perfected by mechanical laceration of its exterior or peritoneal coat.

During the last two months I have met with two cases of rapid death from the rupture of inflamed multilocular tumours of the ovary, and the consequent effusion of their morbid contents into the cavity of the abdomen. The first of these cases occurred in a patient under my care in the ward set aside for female diseases in the Royal Infirmary. She had been previously under the care of Dr Brown of Carronshore.

CASE I.—Mary W—, æt. 34, married, was admitted October 6, 1852. She had borne three children, the youngest of them now

four years old. In May last she first observed a small rounded tumour in the lower part of the abdomen. The tumour was then of firm consistence, painful on pressure, and slightly moveable. At the date of admission, the abdominal tumour was nearly as large as the uterus at the full term of utero-gestation, and unequal and bosselated on its surface. It was tense and painful under pressure, and a distinct fluctuation could be traced in it. The os uteri was situated very high in the pelvis (*elevatio uteri*), and the vagina was much narrowed and stretched at its upper extremity.

During the week subsequent to her admission, the patient was merely confined to bed for the sake of rest, and placed under some simple antiphlogistic treatment. On the morning of October 13th, (seven days after she entered the hospital), she was suddenly attacked with severe pain in the right hypochondriac region, preceded by a feeling as if something had burst in the abdomen. This pain increased in intensity during the forenoon, with great and general tenderness of the abdomen on pressure. In the after part of the day, nausea and vomiting supervened, and the pulse rose in frequency and sunk in strength.

On the following day, at the time of visit, she expressed herself, however, much easier; the abdomen was tense, and increased in size, but scarcely now painful on pressure. The face, however, was very pinched and anxious, the surface cold, and the pulse so small, that it could not be counted, and she was altogether so collapsed that there seemed little hope of her surviving the attack. That night, however, and during the subsequent day, she rallied considerably. The pulse became stronger and reduced in frequency, and she improved gradually for the next fifty or sixty hours. Five days, however, after this first rupture and attack of peritonitis, another and more fatal one supervened. For, early in the morning of the 18th, when attempting to raise herself in bed, she was suddenly seized with great renewed pain in the epigastrium, followed by vomiting of greenish-coloured fluid, extreme coldness of the surface, and other symptoms of sinking and collapse. The pulse became imperceptible; and she died within twelve hours.

On a post-mortem examination, the abdomen was found to contain two or three quarts of turbid serum, thick layers of unorganised and recently secreted coagulable lymph covered the peritoneal surface of the ovarian tumour and the more exposed parts of the

abdominal viscera. At some parts, this layer of lymph was fully an inch in thickness, but quite soft and easily broken down. The left ovary was small and slightly indurated. The enormous ovarian tumour which was present, was attached to the site of the right ovary by a pedicle measuring about two fingers, in breadth and thickness.

On removing the tumour out of the abdomen, a quantity of dirty fetid purulent fluid made its escape from an opening at the upper and back part of its right side. The aperture was of such size as to admit the forefinger. Its edges were ragged and ulcerated; and it exactly corresponded in position to the seat of pain, when the symptoms of sinking first appeared. On cutting into the cyst with which the opening communicated, it was found to contain upwards of a pint of fluid such as has been described. The wall of the cyst, for about an inch round the point of rupture, was much thinned and softened, and presented a black colour.

The remaining portion of the lining membrane of the cyst was covered with patches of recent lymph, and red spots, having the granulated appearance of the intestinal canal in acute dysentery. At the lower and anterior part of the left side of the ovarian tumour, there existed another largish cyst, presenting similar characters when cut into. Several of the smaller cysts of the tumour showed strong signs of recent acute inflammatory action; and pus oozed out in various parts when the large multilocular mass was bisected. The intervening septa were at some parts found to vary from half an inch to an inch in thickness, and presented on division a fibro-cystic structure. No other opening could be found in the external or peritoneal coat of the tumour, except the one already noticed.

The following analogous case of fatal inflammatory laceration of an ovarian dropsical tumour, has occurred still more lately in my private practice. In this, as in the preceding instance, the tumour was unusually rapid in its general growth.

CASE II.—The patient, aged 43, was married in 1836, and had been for two years a widow. She was the mother of three children. Up till the middle of last year she enjoyed uninterrupted good health. At that time she began to complain of pain in the right side; and at the commencement of the present year, the presence of

an abdominal swelling was detected by her medical attendants at Boulogne, where she was residing. In May last she came to Edinburgh, and a large ovarian tumour was then easily diagnosed. It continued to increase and soften with extreme rapidity; and in despite of antiphlogistic measures, iodine, etc., the abdominal swelling and distension were so very great by the first week of September, that tapping became necessary. Twelve imperial pints of a clear glairy fluid were withdrawn, but the bulk of the tumour seemed not much reduced in size by this evacuation; and it was evident that an enormous mass of cysts remained untouched, while a single and comparatively small one only had been opened. She speedily recovered from this paracentesis. By the 16th October the re-accumulation of fluid was already so great, that tapping was again had recourse to. The fluid now evacuated was of a dark colour, and was evidently commixed with pus and inflammatory secretions from the lining membrane of the perforated cyst. During the few following weeks she complained occasionally of more or less pain and tenderness in the tumour, but was able to take some out-door exercise. On November the 17th, she walked to my house, a distance of about half-a-mile, to ask if I would allow her again to begin the use of some iodine which she had formerly taken. She became sick and vomited on her return home, and subsequently complained of some abdominal pain. Next day vomiting again recurred, and the pain became far more severe and diffused over the whole abdomen. By evening the pulse was very rapid, and almost imperceptible at the wrist, the extremities cold, and the vomiting almost incessant. The symptoms of sinking increased during the night, and she died on the following day about two o'clock, retaining her consciousness to the last, and expressing herself, for some hours previously, as free from all pain.

On making a *post mortem* examination, a very large multilocular tumour of the right ovary was found adhering, in different parts, to the abdominal parietes. A quantity of yellow glairy fluid, mixed with coagulable lymph, was effused into the cavity of the peritoneum. Upon the right side of the tumour, immediately below the liver, two small apertures, in two different but neighbouring cysts, were observed; and from these, fluid similar to that in the abdomen welled out upon pressure. At that part of the tumour the cysts were exceedingly numerous, and their walls, at various

points, so transparent and attenuated, that under slight pressure they burst, and had their contents evacuated.

Most of the larger cysts in the tumour, and several of the smaller, showed signs of high preceding inflammatory action in their parietes. Many of them contained pus in their cavities, and their injected lining membrane was coated freely, in various parts, with particles and layers of yellowish coagulable lymph. There were perforations in the walls of most of the larger cysts, allowing of free communication between their cavities and the cysts adjoining them.

In few or none of our accounts of the pathology of ovarian tumours, are those morbid appearances described which are produced by inflammation in ovarian multilocular cysts. But when the lining membrane of a compound ovarian cyst is the seat of inflammatory action, it generally presents, as in the preceding instances, morbid appearances similar to those that we see upon inflamed normal serous surfaces, such as the pleura and pericardium. When the effusion from the inflamed membrane is limited to serum merely, this alone is scarcely traceable; because it becomes at once commixed with, and lost among, the normal serous or gelatinous contents of the cyst. But pus is very often a result of inflammation of an ovarian cyst, more particularly if the inflammation has been sub-acute rather than acute in its type. The purulent matter is usually not seen on tapping or dissection, till the very lowest part of the cyst is emptied, for it is generally observed to have gravitated downwards to the more dependent parts of it. Flakes and masses of loose coagulable lymph are also often present in the contents of the inflamed cyst; or the lymph is attached to the lining surface of it, in the form of granulated spots, or larger patches and layers, or as an organised false membrane covering the interior of the cyst. When the coagulable lymph effused on the interior of an ovarian cyst becomes organised,¹ and the walls of the cyst again happen to be the seat of renewed inflammation, blood is frequently poured out to a greater or less extent into the cavity of the cyst, as in hemorrhagic pleurisy; and this termination is perhaps more frequently the result of inflammation of the ovarian cyst, than

¹ In the Anatomical Museum of the University there are some specimens of ovarian cysts beautifully injected by Professor Goodsir, and the lymph on their interior is seen to be highly vascular.

the result of inflammation of any natural serous membrane. Occasionally the organised lymph deposited by inflammation upon the interior of an ovarian cyst, becomes highly injected under sub-acute or chronic inflammation; and I have seen it give an appearance of roughness to the interior of the cyst, as if it had been lined by mucous membrane, beset with numerous elongated injected villi. In a few instances the interior of an inflamed ovarian cyst becomes ulcerated, the ulcerated spots being sometimes round, in other cases irregular. The perforation of the walls of continuous cysts seem sometimes to be the result of ulceration; but more frequently, perhaps, they are ruptures produced by mechanical or inflammatory distension. And now and again portions of the walls of a cyst, or of several cysts, are found dead and gangrenous, either as the result of destructive inflammatory action in their tissues, or from the circulation through them being mechanically arrested by the compression and obliteration of the vessels which supplied them with blood.

In both the cases which I have above described, the effusion of the contents of the lacerated ovarian cyst into the cavity of the peritoneum, was followed by rapid and fatal peritonitis. But many cases are on record, and I have myself seen several, in which the rupture of ovarian cysts into the cavity of the abdomen, led to no such pathological result. And it becomes not only an interesting, but an important practical question to consider,—“*Under what circumstances is the rupture of an ovarian cyst followed by inflammatory action in the peritoneum; and under what circumstances does this dangerous consequence not supervene?*”

I believe the proper answer to this question consists in a reference to the condition and contents of the cyst at the time of its laceration. If the walls of the cyst, previous to laceration, have been the seat of inflammatory action, and its contents consist of inflammatory secretions, or perhaps of some other forms of morbid irritating matter, the escape of such morbid fluids into the cavity of the peritoneum, will be found, I imagine, to give rise invariably to inflammatory action in the peritoneum itself; and hence, to be always accompanied with danger to the life of the patient. But if, on the other hand, the cyst does not lacerate under inflammatory distension, but has either given way in consequence merely of the gradual thinning and attenuation of its own over-distended walls—or has ruptured

under external mechanical injury, as falls, etc.—(and the fluid which escapes through laceration into the cavity of the peritoneum, is of the mild unirritating character which *naturally* belongs to ovarian cysts in an uninfamed condition), then inflammation of the peritoneum has little or no tendency to supervene. The bland fluid which, under these last conditions, becomes discharged into the cavity of the peritoneum, is not a morbid irritant to that serous membrane, such as a fluid commixed with inflammatory secretions is. Nay, the lacerations of multilocular *uninfamed* ovarian cysts, instead of leading to imminent danger and probably speedy death, have frequently, though accidentally, led to the actual preservation, or at least to the prolongation, of the life of the patient. The explanation of this result perhaps merits one or two remarks.

The interior of an ovarian cyst has no power whatever of absorption; and consequently no diuretics, or de-obstruents of any kind, have any therapeutic influence on the reduction of an ovarian tumour by removal of its fluid contents by the tissues of the tumour itself. But if the bland uninfamed contents of an ovarian cyst become evacuated by accidental rupture into the cavity of the peritoneum, they may be, and often are, readily absorbed from that position; the peritoneum being normally provided with abundant absorbing powers, and these powers being generally capable of being excited, when required, by the action of diuretics, etc. Consequently, when an escape of innocuous unirritating fluid takes place from the sac of an ovarian cyst into the sac of the peritoneum, it may be, and often is, rapidly absorbed and removed from the peritoneal cavity. Cases occasionally occur where nature in this way from time to time spontaneously taps, if we may so speak, an ovarian dropsy into the cavity of the peritoneum; thus ever and anon relieving the patient of the recurrent accumulations of fluid. But another and still happier result has sometimes followed the mechanical laceration of an ovarian cyst into the peritoneal cavity. In fact, in repeated instances it has been observed that in this way, a cure, which may be termed a permanent, though a palliative one, has taken place. For, when the laceration in the walls of the ovarian cyst has been originally large,—or though originally small, has remained *permanently* open,—so as to allow of the continuous escape of the fluid secreted by the ovarian sac into the cavity of the peritoneum itself, the peritoneum under

these circumstances, has sometimes acted as a permanent absorbing surface, removing constantly the fluid eliminated by the lining membrane of the ovarian cyst as a permanent secreting surface. In these fortunate, but rare cases, another result appears sometimes to follow, namely, the ovarian tumour, if it has happened to contain one large and preponderating cyst, becomes collapsed, the fluids which have originally escaped from its own cavity surrounding and compressing its walls externally; and the interior of the cyst, thus kept with its walls in apposition, at last secretes little or no fluid; and possibly perhaps its sides may ultimately adhere together in some very rare cases.

I am acquainted with the history of two cases in which the first tapping of an ovarian dropsy has never been followed by any re-accumulation, the operation in both having now been performed several years ago. And I believe that the secret of this very unusual termination in the two cases in question, is ascribable to the circumstance, that the perforation formed in the walls of the ovarian cyst by the trocar, has remained permanently open like a fistula, allowing of the continuous drain of the ovarian fluid into the cavity of the peritoneum.

Perhaps art will yet be able to imitate both successfully and with certainty in an appropriate set of ovarian cases, this fortunate accidental termination.

Occasionally, after a patient has been often submitted to the operation of paracentesis, an accidental rupture of the ovarian cyst has produced a comparatively permanent cure, as in the following instance:—

CASE III.—A patient, now aged 56, the mother of five children, and naturally of a very robust and strong constitution, had up to the end of last year been tapped for ovarian dropsy 44 times by myself and others. Latterly, the paracentesis was required every few weeks, and an enormous amount of fluid was always evacuated. I have repeatedly seen above four gallons of fluid drawn off at a single tapping. Last winter, this patient slipped in walking upon a frozen path, and so violently struck the abdomen and ovarian tumour against the ground in her fall as to rupture the cyst. Since that time, however, no new tapping has been required. The abdominal swelling, though still large, is considerably less than it was at the

time of the fall, and does not increase in size. For a time the fluid of the cyst evidently escaped freely into the cavity of the peritoneum, and was as regularly absorbed from it. Latterly there has been apparently much less, or indeed no, perceptible amount of fluid in the cavity of the peritoneum. For several months the patient's skin was in an almost constant state of diaphoresis—a result which, to her, appeared the more strange, as for years previously she had never been able to excite any perceptible degree of perspiration. This tendency to spontaneous diaphoresis has latterly decreased. The urinary secretion was often previously affected and greatly diminished as the ovarian tumour enlarged. Since the fall and rupture of the cyst, the kidneys have continued to act very freely and uninterruptedly, the urine secreted being now always clear and limpid.

In the course of the preceding remarks, I have referred to the rupture of ovarian cysts into the cavity of the peritoneum only. But they rupture occasionally also into the intestinal genital or urinary canals, or upon the external surface of the abdomen. When ovarian cysts rupture, not into the peritoneum, but into these mucous canals, or on the external cutaneous surface, it is a matter of little moment, in relation to the life and safety of the mother, whether the cysts before bursting have been inflamed or not inflamed; and whether their contents be of an acrid and irritating, or of a bland and un-irritating character. For there is no danger to the mother from the mere nature of the contents of the cysts when these contents have once escaped into a free mucous canal, or upon the free cutaneous surface of the body. And whatever may be the character of the escaped or escaping fluid, we may equally hope for a temporary or more permanent amelioration of the disease. If the opening is slight and valvular, the fluid accumulating in the cyst may only escape intermittently or imperfectly. If the opening is larger and more permanent, the contents of the cyst are sometimes kept constantly draining off from the morbid cavity of the ovarian tumour; and this cavity has in consequence in some cases diminished and collapsed to a degree amounting to a kind of perfect cure.

I have seen two or three instances in which ovarian cysts have ruptured externally, or into the adjoining mucous canals. The

case which I have had an opportunity of watching the longest is the following:—

CASE IV.—This patient felt a moveable tumour in the abdomen of the size of the fist, about the age of sixteen or seventeen. I first saw her about eight years afterwards, when the abdomen was greatly distended with a dropsical ovary, larger than the uterus at the full period of pregnancy. She was complaining greatly of the symptoms of over-distension. I removed the fluid by tapping in 1840. Fifteen months afterwards the same operation was repeated, in consequence of the re-accumulation of the fluid. But no paracentesis has been required since that time; and at the present date (November 1852) she enjoys good health. A few months after the second tapping, the patient had a tedious attack of typhus fever, accompanied and followed by peritoneal inflammation. She was confined for many long weeks to bed. Sometime after her recovery, and when the tumour was again increased to a great size, there suddenly supervened, one night on going to bed, much soreness in the tumour; and this was followed ere morning by an abundant and large escape of thickish clouded fluid from the genital canals. The tumour subsided much in size under this discharge, which only, however, lasted for a few days. Again, after this discharge ceased, the tumour increased to an exceeding size; and, on the patient one day twisting herself round on the sofa, she felt, as she herself described it, “something tear” in the right side. In the course of that day a clear limpid fluid again began to pour profusely from the vagina, and the tumour immediately softened and decreased in size. This discharge has since that time continued, and has now gone on for several years. The discharge is always greatest when the patient is lying or walking, but its total daily amount is at present not great. The ovarian tumour is, she herself believes, now much less in size than after its last rupture, though it is still larger in volume than the adult head. It moves readily under pressure. The patient's menstrual life is regular and normal in all respects; she now enjoys, as I have already stated, the most excellent health; daily performs active house duties; and has latterly become so stout as to weigh upwards of fourteen stones.

The seat of the opening between the ovarian cyst and the genital

tubes in the preceding case, it is of course impossible to ascertain. But judging from the dissections which have been made in analogous cases of ovarian cysts emptying themselves by the genital canals, the seat of communication is, in all likelihood, between the ovarian cyst and the Fallopian tube. Lately Richard has shown, that ovarian cysts do not so unfrequently as was formerly supposed communicate with the Fallopian tube; and that the cavity of the tube in consequence often becomes distended with the fluid of the adjoining cyst. But though thus distended, the tube is not in many cases sufficiently open at its uterine extremity to allow of the escape through the uterus of the contained fluid. Several cases, however, have now been observed by Morgagni, Boivin, Robertson, and others, in which, after death, ovarian cysts have been found to have such a free communication along the canal of the Fallopian tube, and this tube again with the cavity of the uterus, as that the contents of the cyst escaped freely outward along the course of the genital canals.

The desultory observations offered in the preceding remarks may, perhaps, be all briefly recapitulated in the form of the following conclusions:—

1. The cysts forming an ovarian dropsy, occasionally rupture, *first*, from inflammatory effusion into and distension of their cavities; or, *secondly* (the contents of the cysts being only the common bland secretion of such cysts, and unmixed with any inflammatory matter), they may rupture from mere over-dilatation and gradual attenuation of their coats, or under sudden mechanical pressure and injury.

2. When a cyst ruptures from the effects of inflammation, or contains within it at the time of rupture inflammatory secretions and materials, the escaping fluid, if effused into the cavity of the peritoneum, is always liable to be followed by dangerous, and generally fatal, peritonitis.

3. If, however, a cyst bursts into the peritoneum under mechanical injury, or in consequence of simple laceration from over-distension of its cavity, and the fluid effused into the sac of the peritoneum is

consequently not commixed with inflammatory secretion, there is little or no great tendency to peritonitis.

4. Sometimes, indeed, when thus a non-inflamed ovarian cyst ruptures into the cavity of the peritoneum, the life of the patient is preserved, or at least prolonged, by this accident.

5. When an ovarian cyst ruptures into a mucous canal, or upon the cutaneous surface, the safety or danger attendant on the laceration is not regulated by the inflamed or non-inflamed character of the effused fluid.

6. In cases in which the fluid of an ovarian cyst obtains an outlet by a mucous canal, or by the skin, a temporary or more permanent reduction of the tumour and comparative cure of it may be the consequence.

Lastly, let me add that, as in many cases and points the surgery of art is an imitation of the surgery of nature, possibly the artificial repetition and establishment of the above modes of relief, if they could be imitated safely and certainly, may yet be found capable of temporarily arresting, if not curing, ovarian dropsies in some appropriate cases; and more particularly in instances in which the great bulk of the tumour is formed by one original large preponderating cyst, or by several cysts broken up and conjoined into one common cavity or cell.

ARTICLE XI.

ON VESICO-UTERINE, VESICO-INTESTINAL, AND UTERO-INTESTINAL FISTULÆ, AS RESULTS OF PELVIC ABSCESS.

CELLULAR tissue exists abundantly within the pelvis, along the lining of the walls of the pelvic cavity, within the layers of the broad ligament, and between the intestinal, genital, and urinary canals, at all those points in which they come into organic coherence. Inflammation of this tissue, or Pelvic Cellulitis, is a common affection, particularly as a consequence of parturition, etc. Pelvic cellulitis, after giving rise to great swelling and induration, by the effusion of serum, coagulable lymph, etc., into the inflamed portion of the cellular tissue, very often terminates sooner or later in resolution; the disease not unfrequently assuming a subacute or chronic type. In other instances, however, the inflammatory action runs on toward suppuration, and forms a so-called Pelvic Abscess. When this termination occurs, the collected purulent matter is found to obtain egress by different outlets. The abscess sometimes bursts into the intestinal canal, or into the genital canal, or into the urinary bladder. Occasionally it discharges externally upon the cutaneous surface; and in a few rare instances it opens into the cavity of the peritoneum. Sometimes the collected pus is found to make its escape simultaneously, or rather consecutively, by two different exits. Thus, we may have the cavity of the same abscess opening into two different pelvic mucous canals. Where such double perforations, originating in the escape of matter from a pelvic abscess, become chronic in their character, they lead to the formation of several species of deep pelvic fistulæ, which have not, as far as I am aware, been hitherto described by obstetric pathologists.

Very few instances of the existence of fistulæ of any kind between the bladder and uterus have hitherto been put upon record. Indeed, the number of *vesico-uterine fistulæ* hitherto recorded, seems to be limited to three instances, reported severally by Mad. Lachapelle, Professor Stoltz, and M. Jobert; and in all of these three cases, the perforation which existed between the bladder and cavity of the neck of the uterus, was the result of injury during parturition.

In the following case this rare form of lesion was produced as a consequence of pelvic cellulitis; or, to speak more definitely, it was produced by a purulent collection formed in the cellular tissue lying between the bladder and the neck of the uterus, and ultimately rupturing—on one side into the bladder, and on the other side into the cavity of the uterus, or rather the cavity of the cervix uteri.

CASE I.—The patient, aged 22, and the mother of two children, was admitted into the female ward of the Royal Infirmary in June last. Her youngest child was then eleven months old; and she had made a perfect recovery after her confinement with it. About six months, however, subsequently to her delivery, she was seized with local pelvic pain, dysuria, and the usual symptoms of pelvic cellular inflammation. Three or four weeks after the commencement of this attack she had shiverings and perspirations, and other symptoms of hectic fever. These symptoms were shortly followed by evidence of the escape of purulent matter; and subsequently complete incontinence of urine came on. After this the urine continued to be discharged per vaginam up to the date of her admission into the hospital, four months after the commencement of the inflammatory symptoms. The urine contained a considerable quantity of pus. On examination, the urethra was found perfectly patent, although the urinary secretion was not discharged through it. There was still a considerable mass of fixed inflammatory deposit, in front of the cervix uteri, or in the cellular tissue between it and the posterior wall of the bladder. The cervix uteri itself was considerably hypertrophied, particularly its anterior lip. That the urine passed from the bladder through the os and cervix uteri, was ascertained by the simple experiment of filling up the os uteri for a day, with a small sponge tent. During the time the cavity of the os

uteri was stopped up with this plug, the urinary discharge was evacuated through the urethra; but immediately again began, and continued to pass through the artificial vesico-uterine opening as soon as the sponge plug was withdrawn. After withdrawing the plug, the cervical cavity, which had been dilated by its presence, was examined by the finger, and two apertures were found passing into it, or rather leading from it,—one, the normal aperture leading upwards into the cavity of the uterus, as ascertained by the uterine sound,—the other, tending obliquely forwards towards the cavity of the bladder. This latter artificial opening was freely cauterised by solid nitrate of silver. Subsequently, local and general measures were employed (as external counter-irritation, iodine, etc.), to promote the absorption of the inflammatory deposit. In the course of a few weeks the swelling from the deposit between the bladder and cervix uteri diminished, the incontinence of urine became gradually lessened, and was ultimately totally arrested; the cure being, as I believe, the result of the natural contraction of parts following upon the absorption of the original inflammatory deposit. Subsequently this poor patient was attacked with symptoms of acute pulmonary phthisis, and died a short time ago at a distance in the country, but without any return whatever of the incontinence of urine.

I have seen other cases of pelvic cellulitis which had run on to suppuration, leave other forms of fistulous perforation, perhaps still more strange and singular in their anatomical relations.

Two years ago, I had under my care, a case in which there was produced as the result of this disease, a *utero-intestinal fistula*.

CASE II.—A lady, a few days after her first confinement, was attacked with symptoms of fever, and local pelvic inflammation. These terminated in a very tedious pelvic abscess. About a year subsequent to her accouchement, she was brought to Edinburgh, and placed for some time under my care. She still had considerable thickening and pain on pressure in the left side of the pelvis, which had been the seat of the pelvic cellulitis. The cervix uteri, and indeed the whole uterus, was elevated upwards, and drawn much laterally to the same side. On examining simultaneously, with the fingers of

the right hand on the roof of the vagina, and with those of the left hand placed externally over the left iliac region, much thickening and agglutination of the uterus and intestines could be readily ascertained in the left pelvic and iliac regions. Discharges of slight accumulations of pus recurred from time to time through the os uteri; and, occasionally, after these discharges, small quantities of feculent matter were found in the vagina,—showing a communication to exist between the intestinal canal, at some part (perhaps the sigmoid flexure), and the cavity of the uterus. When the canal of the cervix uteri was gently examined by a slender probe or sound, a fistulous communication could be traced, passing up from the cavity of the cervix laterally towards the left iliac region; but this sinus could not be followed for any great length.

In this case there was a constant tendency to the recurrence of inflammatory attacks in the original seat of the pelvic inflammation, some of which were extremely severe. The patient subsequently removed to the south of England, where she died under, I believe, one of these renewed inflammatory attacks. My friend, Professor Lawrie of Glasgow, saw this case repeatedly.

Some time since, I was consulted by a patient, in whom there existed a still more rare and curious form of fistula, the result of a pelvic abscess under which she had suffered. Professor Macfarlane of Glasgow, and Dr Miller of London, also saw the case. Its peculiarity consisted in this,—that, as a result of pelvic abscess, a fistula was formed between the bladder and rectum—a *recto-vesical fistula*—and yet the intermediate uterine and vaginal canals were not implicated in it. The principal particulars regarding the case are as follow:—

CASE III.—The patient, when about 23 years of age, and unmarried, was attacked with fever and severe local inflammatory pain in the pelvis and left groin. After these symptoms had continued for some weeks, she was at length relieved by the discharge of a large quantity of purulent matter from the rectum. About twelve months after the occurrence of this pelvic abscess, she was considered so well as to be allowed to be married. But from that time she suffered from repeated attacks of pelvic irritation and inflammation,

with leucorrhœa, irregular menstruation, etc. She never became pregnant. Several years subsequent to marriage, during one of these recurrent pelvic attacks, the bladder became greatly irritated; and, after this painful dysuria had lasted for some time, purulent matter was discharged along with the urine. Subsequently to this period, and on to the time of her death (four years afterwards), small portions of feculent matter and flatus passed from time to time by the urethra, along with the urine,—showing a communication to exist between the intestinal and urinary canals. As high up the rectum as could be reached with the finger, a fistulous opening was traceable in the anterior and lateral part of the bowel, and a probe could be passed forwards to some extent through it. There was much thickening and agglutination of the pelvic tissues at that part. No treatment was of any avail in relieving the patient from her distressing symptoms. She died ultimately of a short illness, from (as reported to me by Dr Miller) some affection of the brain.

In the preceding and in other cases of pelvic abscess, the different openings through which the matter becomes discharged do not, as I have already remarked, always occur simultaneously, but generally consecutively. After the purulent matter has escaped, apparently with sufficient freedom, by one opening, it will occasionally, in consequence either of its temporary obstruction and retention in the sac of the abscess, or in consequence of the walls of the abscess themselves ulcerating, again open at a subsequent period into another canal. The following case, which I had occasion to see often under the kind and able care of Dr Johnson of Stirling, will serve to illustrate this remark:—

CASE IV.—A patient in the country was seized with acute symptoms of pelvic cellulitis; and a large inflammatory tumour speedily formed in the cellular tissue of the left broad ligament, and in the left iliac fossa. In despite of the active antiphlogistic treatment that was adopted, the disease ran on towards suppuration, and dangerous symptoms of irritative fever and exhaustion supervened, with great local tenderness in the affected part. An exploring needle, introduced by the spine of the ilium into the inflammatory swelling, lying in the iliac fossa, showed the presence of a deep col-

lection of pus. I evacuated it twice by a trocar, with great relief to the patient. Pus continued to be freely discharged for a considerable time through this artificial opening on the edge of the left iliac fossa. After this discharge had gone on for some weeks, the opening from time to time offering to become nearly closed, a new and distressing symptom supervened. For, along with a discharge of matter through the artificial opening, there passed from time to time some flatus, and occasionally a slight appearance of feculent matter,—showing that the abscess had ulcerated into the bowel, probably the sigmoid flexure of the colon.

In this instance, the spontaneous opening of the abscess into the intestinal canal did not, as I have said, occur till weeks subsequent to the discharge of the matter through the external opening. After this occurrence, the external fistula was attempted to be shut up by various means, but for some time without avail. At last, by altering the position of the external orifice, by a new incision, the whole external aperture was happily obliterated, and the patient has made a perfect recovery.

In the preceding cases, the fistulous communications resulting from the pelvic abscess, were probably valvular in their form, inasmuch as, probably the fluids and air escaped through the track of the fistula only occasionally, and not constantly. Perhaps, in some, the transit of these matters was only effected, when the canal of the fistula was preternaturally distended by an accumulation within and behind it of the morbid matters that passed; the walls of the canal at other times being so much in contact as not to allow of the passage of any foreign body.

In the case of vesico-intestinal fistula which I have mentioned—(SEE CASE III.) feculent matter and flatus, appeared to pass from the bowel into the bladder; but the patient was never aware of the urine passing from the bladder backward into the bowel. It is quite possible, however, that it may occasionally have done so in small quantity, without her being able to recognise it distinctly. If it were not so, then, in that case, the fistulous communication was of such a valvular structure, as to allow of the transit of matters in one direction, and not in another,—a point in its anatomy, which it is not difficult to conceive.

Since the preceding notes were written, I have received a communication from an old pupil, Dr Heslop, directing my attention to a case published by him in the "Dublin Quarterly Journal" for 1850 (p. 220), and in which the left ovary was found after death of the size of an orange, adhering intimately to the rectum and bladder. The cavity of the enlarged ovary contained "a soft, pultaceous, half fecal, half-careous-looking matter," and communicated posteriorly with the lower portion of the sigmoid flexure of the colon, and anteriorly with the urinary bladder. In this ovary a fistulous communication seemed to be formed between the intestinal and urinary canals, through the cavity of this diseased ovary; and air, and probably feculent matter, are said to have passed occasionally from the bladder for twelve months before death. The patient had, in addition, a calculus in the left kidney, enlargement of the liver, etc.

His face was worn and haggard; surface cold; pulse small, slow, and feeble; stools scanty, frequent, bloody, and accompanied by tenesmus. He was ordered bread diet, with two extra pints of milk, four ounces of warm wine, and twelve ounces of meat, made into broth; and to take, thrice a day, two grains of *hydrarg. cum creta*, with one grain and a half of dried soda, and half a grain of opium. This treatment was continued till the 10th, when the dysentery ceased, but diarrhoea took its place: no mercurial action on gums, nor were the stools mercurial; astringent mixture ordered after each stool: the powders to be omitted.

April 13th. Has had no occasion for astringent mixture, and is now convalescent. His recovery and improvement under the above treatment were as rapid as they were unexpected. The pulse quickly became distinct, the surface warm, the countenance cheerful; the stools solid and natural in frequency and appearance, except that they were occasionally slightly streaked with blood. In twenty-four hours from his admission he considered himself well.

15th. On yesterday, about ten o'clock, P. M., he had a severe rigor, followed by vomiting and purging; the alvine evacuations were clay-coloured, and mixed with bright orange liquid bile, with flakes and scales of same colour, similar to those described in the former cases; the tongue is now coated with a thick white slime; thirst great; respiration laboured; countenance rather sunken; cough and mucous rales. No blood in stools; pulse of moderate strength; restless during last night; respiratory murmur pretty free, but mixed with bronchial rales. Ordered a blister to the chest, and to take two grains of *pil. hydrarg.*, with as much dried soda, and five grains of Dover's powder, together with saline effervescent draughts: omit meat, wine, and astringent mixture; substitute fever diet.

16th. Pulse eighty-four, small and weak; skin rather cold; no purging or vomiting since yesterday; tongue not quite so much coated, but small and fissured; less thirst; raved during

the night, and was restless; abdomen tympanitic; says he feels much better; passed one solid stool of a bright orange colour, containing micaceous-looking scales; ordered four ounces of wine, strong broth, and effervescing draughts to be repeated.

17th. Pulse seventy-two; three stools since morning, soft and clayey, otherwise as yesterday. Meat omitted, and fever diet, with rice, ordered; and also, Dover's and aromatic powders, with soda, of each two grains to be taken thrice a day.

18th. Does not rave; has been at stool only three times since yesterday; stools solid, but deficient in bile.

19th. Pulse seventy-two, moderate; tongue nearly quite clean and moist, but still cracked and fissured; appetite returned; thirst less; ordered bread diet, and one extra pint of milk. Convalescent; never had any relapse after this date, and on the 10th of May was discharged perfectly well.

Of the twenty-seven cases treated by me during this epidemic, eighteen were males, and nine females; eight were between three and thirteen years of age; one was 19; eight were between 35 and 52; nine between 60 and 80; and one was 90. Mercury was used in twenty-one of these cases, but affected the gums in but eight instances. Two cases passed into chronic dysentery and phthisis.

ART. V.—*Practical Observations on some Congestive, Inflammatory, and Ulcerative Affections of the Uterus*. By EVORY KENNEDY, M.D., late Master of the Lying-in Hospital, Dublin. With coloured Plates and Illustrations.

A COMMON inquiry, both within and without the profession, at the present day, is, how comes it that affections of the womb appear to occur so much more frequently now than formerly? The answer to this is, that they do not occur more frequently; but from the attention that has latterly been bestowed upon them, and the facilities that at present exist for their elucidation, they

are now better understood, and their distinctive characters are beginning to be appreciated by those who study them. The consequence of this is, that many of those states of disease, formerly attributed to other causes, such as general debility, weakness, relaxation, nervousness, &c., or even to affections of remote organs, are now traceable to uterine lesions. The obscurity which hitherto enveloped their investigation, left us in ignorance of their existence, and led to their being ascribed to other than their real causes. These fallacies are, however, gradually giving way under the progress of analytic investigation, aided by the more general use of the speculum. As, however, the application of this instrument, in this country, must ever be limited, our progress shall be comparatively slow, unless those who have possessed peculiar opportunities of investigating these affections, give the results they have arrived at to the profession.

It is incalculable the amount of suffering and ill health which is, even at the present day, experienced by females, who have been treated ineffectually upon "general principles," and whom, after years of misery, the simplest local treatment rapidly restores to health (a).

The object of the succeeding observations is, the practical elucidation of some of the most striking of these affections, so as to convey to others, as briefly and simply as possible, the conclusions arrived at upon these subjects by the writer. But, as no written description can convey to the reader a just idea of the appearances, presented by morbid lesions, so as to enable him, without a most extensive field of observation, to distinguish them accurately when presented to him, we have been at some pains to remove this difficulty, by giving delineations, taken from the cases when under treatment. For their fidelity we can speak with some confidence. Most of

(a) See M. Chomel's case, reported by M. Gueneau De Mussy. Dub. Hosp. Gazette, March 1, 1845.

those not drawn by ourselves were executed under our inspection, by that admirable delineator of morbid structures, Mr. Connolly, nearly ten years since. They were prepared for the benefit of the class at the Lying-in Hospital, who then possessed an opportunity of testing their accuracy, by comparison with the cases under their observation at the moment. Multiplied observation of similar cases, in the period that has since elapsed, having satisfied us of their truthfulness, led to the supposition that their publication might prove acceptable to the profession.

If the practitioner ask for a rule as to the cases in which the use of the speculum is admissible, we should answer,—that must rest with his own judgment in each individual case; and while we feel convinced that no man would propose an operation, so revolting to every feeling of a delicate-minded female, and distressing to himself, unless absolutely imperative, we would also hope, that where such necessity existed, no physician intrusted with the life or health of his patient would shrink from having recourse to every available means which science affords, in the discharge of the trust confided to him.

In the majority of cases we find the usual posture in parturition,—lying on the left side, with the limbs drawn up to the abdomen,—and placing the patient so that the direct light will fall in the axis of the outlet of the pelvis, serves every purpose. A sheet, with an aperture, or slit, corresponding to the vulva, should envelope the person, and the head and shoulders should be placed low.

In primary examinations, where the object is to explore the interior of the vagina, as well as to evert the uterine lips, the use of the four-bladed speculum, is preferable. Subsequently, however, and where applications are to be made to the interior of the vagina or the os uteri, Ferguson's glass speculum, prepared by coating the glass with caoutchouc, having a layer

of quicksilver interposed (thus converting it into a reasonably good reflector, and rendering it more luminous), answers remarkably well.

Whenever the os is displaced and difficult to catch in the field of the speculum, the expanding instrument is preferable, and its use attended with less inconvenience and delay. In some cases, where the neck projects directly backwards, it is impossible to expose it without placing the patient on her back, and elevating the pelvis above the level of the shoulders, but this is rarely necessary; the reverse occasionally holds good. The principal difficulty in catching the neck of the uterus in the field of the speculum arises from our pushing it aside in the introduction; an inconvenience most likely to occur when that portion is elongated or displaced. This may be prevented, by always making a careful manual examination, before introducing the speculum, so as to ascertain the exact position of the uterus, and direction of the os; when, upon introducing the instrument well up, and withdrawing the plug, if the os be not brought into view, the speculum may be gradually withdrawn, expanding it gently at the same time. By this means the neck will generally fall into the field of the speculum. In some cases of displacement of the uterus, or when this organ is very mobile, it is necessary to have it replaced, and retained *in situ* by the hand of an assistant pressed firmly from above into the pelvis. If these hints be attended to, the instrument lubricated, and introduced slowly and high up before withdrawing the plug, whilst the blades are gradually separated, and (if necessary) the vulva and vagina dilated by the previous use of tallow bougies, little difficulty or inconvenience can attend its use.

In some cases, as of acute vaginitis, any attempt to introduce the speculum is not only painful but highly injurious, until that affection is relieved by leeching and other means. Extreme congestion of the vagina, and extraordinary sensibility of the sphincter, also render its use inadmissible until these

symptoms have been removed, and the parts reconciled to its introduction by the use of proper bougies.

The uterus, and particularly that portion of it projecting into the vagina, is very liable to inflammation, congestion, and their sequelæ. This, for obvious reasons, is more frequent in married than in single females, although by no means confined to the former. The depth of the part engaged, and its comparative insensibility, renders its affections not always well understood, or referable to their exact seat; and we are more frequently consulted for the effects and the inconveniences resulting from them, than for the primary attack. Thus chronic inflammation or congestion of the neck may continue for weeks or months, and, perhaps, until leucorrhœal discharge, or ulcerative alterations, take place, no advice is sought. The practitioner then too frequently treats the symptoms, and overlooks the original disease, or by his very treatment aggravates and confirms it. Astringent and stimulating injections are almost invariably had recourse to; and cold aspersion, tonics, wine, porter, active exercise, &c., are esteemed essential for the cure of the debilitating discharge, as it is termed. The discharge certainly may be checked, but if it be, its primary cause is aggravated, and a simple, easily-managed affection is converted into an obstinate chronic disease.

It so happens that the symptom which generally attracts most the patient's attention in utero-vaginal affections is the accompanying discharge; and from the frequency of its occurrence in these cases it has thus acquired the importance of being esteemed the pathognomonic affection, not, as it really is, a symptom; an error which, we fear, is likely to be confirmed by the adoption of the term *Ulenorrhagia* in the classification of these diseases. In applying this term we merely use it as denoting the presence of a symptom, *mucous discharge*, as its name implies; with the frequency of which every practitioner is conversant. Frequent as leucorrhœa, or *Ulenorrhagia* is with our females, it would appear that in France

it is much more so, if the statements of Ricord and Lisfranc are to be taken literally. The first says that ninety-nine women and a half in every hundred, during some part of the month, suffer more or less from *Ulenorrhagia*; whilst M. Lisfranc was in the habit of stating that the evidences of its existence were present upon the linen of nearly all the Parisian ladies; and this statement was based upon his own examination into this matter at a great washing establishment near Paris^(a).

The prudent practitioner, when consulted in these affections, would do well, in most cases, to forget the existence of such a circumstance, and in place of treating it, set about ascertaining the true nature of his patient's case.

The empirical system of ordering an astringent lotion merely because there is a vaginal discharge, and then resting satisfied that everything practicable has been done, has prevailed too long, and proved an opprobrium, which every day's experience must serve to render more culpable.

Let us inquire whether, in the first instance, the disease was induced by an assignable cause; whether pelvic, sacral, or inguinal pains were first observed, with heat and irritation about the vulva, or in the course of the vagina; whether this occurred consequent upon sudden suppression of the menses, after exposure to cold or local irritation—in connexion with cutaneous eruptions,—after any marked change in habits of living,—early exertion after delivery, or miscarriage; whether the discharge, when it appeared, was subsequent to these, and how long; whether it was consequent upon intercourse, miscarriage, pregnancy, or delivery; and how far the patient's general health may be connected with it? Having inquired into all these matters, if the disease do not yield to a properly directed treatment, or if circumstances warrant a further examination, let this be made, and let the patient be treated upon fixed

(a) See Acton on Venereal Diseases, p. 45.

principles, based upon a knowledge of the *real nature* of her case.

The uterus, like the rectum, is liable to retardation of blood in the venous vessels and capillaries, giving rise to congestion, engorgement, and even varix. The neck and body are more prone to this than the fundus, a circumstance which, we imagine, may be accounted for by the anatomical distribution of its vessels, the blood in the fundus principally flowing to and fro in the spermatic vessels: whilst that in the neck and body returning by the hypogastric and iliacs into the cava, is more exposed to pressure from a variety of circumstances, but principally from distension of the rectum and cæcum, the enlarged uterus, in pregnancy, and pelvic growths, &c.

Congestion of the uterus is a large subject, and one that demands much the attention of the profession; we shall now merely deal with it in connexion with some of those lesions of that organ which it is our present intention to notice. It is generally more or less combined with infiltration into the cellular tissue of the neck and parenchyma, and sometimes with disease of the lining membrane, partial or complete. It contrasts with chronic inflammation by its darker colour, as seen through the speculum, and by the occasional development of varicose veins, as shewn in Fig. I. of the accompanying illustration. It is less sensible, both generally and to the touch, and though its principal inconvenience perceptible by the patient is the sense of weight or dragging, and in some more decided cases, of throbbing in the pelvic or sacral region, the latter symptom is more observable when the whole uterus is congested. In the cases where it is confined to the neck and lining membrane, the patient may experience little of these inconveniences, sometimes merely complaining of a slight feeling of prolapsus. The vaginal examination indicates, in complete congestion, a fullness and enlargement of the uterus, much resembling early

pregnancy. The partial congestion, however, gives us merely the increased development of the neck(*a*), with the body of the usual size, and imperceptible on pushing up the finger: or of the body, or a portion of it(*b*); these cases are often accompanied with displacement of the organ corresponding to the locality of the partial enlargement.

Simple engorgement does not necessarily alter the density of the uterine tissue, or cause that increase of hardness, insisted upon by some authors as a pathognomic sign of this state(*c*); it may amount to a considerable degree without any very sensible alteration in its density, unless lymph be effused into its interstitial structure; a change, however, much more likely to occur in chronic inflammation, and which has, no doubt, been often ascribed to engorgement.

Congestion may exist without any lesion of the uterus, or it may be combined, as it very frequently is, with excoriation, ulceration, or granulation of the neck or lining membrane. It is difficult, from the reasons above specified, to ascribe the priority of occurrence to either. Much difference of opinion exists amongst authors, as to their order of occurrence; some asserting that engorgement of the neck precedes, in all cases, ulceration; whilst others deny this, although they admit its occasional priority. Without entering upon a discussion, which it is impossible always to determine with accuracy, we are quite justified in saying, that rarely does inflammation or congestion persist for any great length of time, without lesion of the in-

(*a*) M. Boys de Loury and Costilles, in their Clinical Researches give the greatest dimensions of the uterine neck, in its normal state, as three centimes, in its lateral, and two in its antero-posterior diameter, when free from engorgement, observing that whenever the antero-posterior equals the lateral diameter it is a proof of engorgement.—*Gazette Medicale*, June, 1845. Ranking's Abstract, vol. ii. p. 168.

(*b*) See Duparcque, tom. i. p. 91.

(*c*) In using the term engorgement we would restrict it to vascular and oedematous congestion, and not include, under this denomination, as do the French authors, hypertrophy or fibrous deposits, steatomatous, inflammatory schirous, or any other of the comprehensive organic deposits which they class under this term.

vesting membrane, within or without the uterus following; and more rarely still does lesion occur, without congestion or inflammation resulting.

In inquiring into the causes of this disease, let us reflect what an important part is performed in the female, by the organs peculiar to her; the extensive sympathies they evince, particularly with the cutaneous textures and their liabilities, as partaking of both serous, mucous, and parenchymatous structures, to the diseases of all these. Let us further bear in mind the extraordinary changes and alterations, in both structure and function, which they undergo in the different states of childhood, puberty, parturition, menstruation, &c., with their modifications and interruptions; and then the comparative frequency of disease of these organs is not to be wondered at. On the contrary, that the periodicity of their functional operations, regulated by no appreciable controlling power, yet recurring at such intervals, should not more frequently be interrupted, is rather a matter of surprise.

That interruptions and alterations of their function should be productive of lesions, or occur consequent upon organic changes, is what we should naturally anticipate. The great object with the physician should be to ascertain, as far as possible, the relations in which such alterations stand to each other, as to cause and effect; this knowledge being of vital importance, with a view to rational treatment.

In addition to removing its cause, congestion of the uterus is best treated by unloading the vessels of the part engaged. From three to six leeches applied directly to the uterus through the speculum or leech-bag, will do more to relieve this symptom than twelve or eighteen externally. Scarification is also of service, but to prove effectual the incisions must be kept open, by retaining the speculum within the vagina, and injecting warm water, otherwise they generally cease to bleed the moment the speculum is withdrawn.

The vessels having been unloaded two or three times, or

oftener if necessary, counter-irritation over the pelvis or sacrum, particularly in complete congestion, must be had recourse to: where it recurs, as it often does, again and again, particularly if assuming the inflammatory character, a permanent drain with Albespeyre's paper, or, which is still more efficacious, if the urgency of the case justifies it, a caustic issue kept discharging for several weeks or even months. A continuous stream of cold or tepid water may be thrown into the vagina twice or thrice each day, and followed by the use of mild astringent lotions, or washing the whole projecting part of the neck over with an eight-grain solution of nitrate of silver, and occasional inunction with citrine ointment.

The general treatment will consist in what may be termed alteratives. Tonics should always be had recourse to with great care, although not entirely prohibited; in fact, whilst we have seen the greatest mischief induced by the use of tonics in this affection, we should state that, in some cases, particularly those of long standing, where the constitutional health had suffered much, decided benefit has been derived from the careful administration of both bark and iron. Pullna water, sarsaparilla, iodine, mild mercurials (particularly Plummer's pill), and taraxacum, are, however, more to be relied upon and are much safer in their general use.

When the menses are interrupted, a few leeches ought immediately to be applied to the uterus, and, if the patient be plethoric, the lancet may be used; but the period ought not to pass over without detracting some blood, either from the uterus or its immediate neighbourhood. The hip-bath should also be had recourse to about the period. If a tendency to the occurrence of a half period, or "fortnight's menstruation," shew itself, this should be forestalled by the application of leeches, the day or two before its occurrence.

Inflammation of the uterus, when it assumes the acute character, is sufficiently easily recognised, by the seat of the pain and distress, combined with the febrile excitement and

sympathetic derangements it engenders. The forms of inflammation of this organ, which we at present treat of, are not, however, so easily recognised,—we allude to partial chronic inflammation, which may, at least in the first instance, occur unattended with much constitutional disturbance, when it is more from its consequences or effects that attention may be drawn to the disease.

The same observations may hold as regards partial inflammation, even when it assumes a more acute character. Most of the symptoms accompanying congestion of the uterus will occur in inflammation, whether chronic or acute, partial or complete, of this organ; but in addition we shall have pain, more or less severe, increased on pressure, accompanied, as it partakes of the more markedly acute character, by febrile disturbance, quick pulse, rigors, high-coloured urine, irritation of the bladder, loss of appetite, thirst, and acute pain on intercourse, &c.

The obvious treatment here is general and local depletion, antiphlogistic regimen, mercury, and counter-irritation, the warm bath, soothing fomentations and injections, and the removal of every possible source of excitement. The symptoms above described are obviously applicable to both acute and chronic inflammation, whether partial or complete, of the uterus, only varying in degree according to the intensity of the symptoms and extent of the organ engaged; for instance, if fulness and marked pain, increased on pressure, exist, on examining the uterine region over the pubes, then the body of the organ is engaged; if the fulness and pain increased on pressure be perceptible only on a vaginal examination, it is confined to the os, or neck; and if a discharge of a muco-purulent fluid, with a tendency to bleed, be observed from the interior, whilst heat and throbbing occur, the lining membrane is the seat of the inflammation. Should the discharge assume a very tenacious character, difficult to disengage from the interior, with a red, vascular, and angry appearance of the everted

portion of the lining membrane at the lips (see Fig. 9), then the glandular structure within the neck is engaged. We do not always find the exact part of the organ engaged so distinctly defined in practice, for this reason, that when one part takes on the diseased action, it very commonly extends, either directly, or by the persistence of the local irritation and determination, to the adjoining structures. In inflammation of the vaginal portion of the neck of the uterus, in addition to increase in development and heat, we shall find, on introducing the speculum, that the investing membrane has assumed a vivid red, or, if of longer standing, a brick-red colour (see Fig. 2), which very often extends to the uterine portion of the vagina, or even throughout this canal. In some of these a red, and somewhat prominent, spotted, aphthous, or papular appearance is perceptible upon the os itself, as in Fig. 2, or more markedly in Fig. 3, in which case it engaged the vagina also. These papillæ are seldom larger than a large pin's head, but there are others on which a follicular enlargement occurs, giving the appearance of vesicles embedded in the substance of the uterus: in some, distinct patches of inflammation pervade the vagina, leaving the intervening portions comparatively free from disease. We have also observed rhagades or fissures combined with this inflammation of the uterus and vagina; and in one case in particular, there would have appeared reason for connecting it with a dartrous affection, to which this patient was liable on other parts of her person. The inflammation in some cases assumes the marked diphtheritic character, with insular exudations as observed in the other mucous surfaces, in which case the vagina is also very commonly engaged.

We have drawn attention to the congestive and inflammatory affections of these organs in the first instance, with a view to shew their connexion with those diseases which we have now to discuss under the head of Ulcers of the Uterus. It would be natural to infer, that the ulcerative affections to which the uterus is liable should occur as the sequelæ of pre-

existing inflammation, and we doubt not that this is the case in the majority of instances. We do not from this mean it to be supposed, as it is conveyed in the observations of an intelligent writer in the *Annales de Therapeutique*(a), that all ulcers proceed from hypertrophy of the neck; on the contrary, we have met with many in which no such state existed, and indeed we believe it that he rather misapplies the term hypertrophy, in so designating that inflammatory or congestive fulness which precedes or accompanies these cases, and which is generally temporary in its nature. We have already alluded to the difficulty of always ascertaining accurately the order in which these states occur, from the advanced period of the case in which we are usually consulted.

Ulcers of the uterus may be classified into the benign, specific, and malignant; we have only at present to do with the first. Their causes may be general and local: the general are usually predisponent, such as constitutional diathesis, extreme plethora, or the reverse state, strumous habit; the use of stimulants; sedentary habits; costiveness; exposure to cold; cutaneous eruptions; aphthous tendency; and deranged digestion. The most prominent of the local are, inflammation and congestion, as already enumerated; excoriation; injuries; irritation extending from neighbouring organs, as the rectum and bladder; deranged menstruation; abortion; labour; displacements of the uterus; tumours, and other diseases of the uterus, vagina, and neighbouring tissues and organs; and too early exertion after labour or abortion, &c.

The simplest form in which the mild ulcer on the uterus shews itself may be termed Excoriation, or Erosion, in which it exactly resembles an abrasion of the cuticle in the male. It may commence in the same manner, or it may be the result of one of these aphthous or papular inflammations, terminating in superficial ulceration, which takes on a spreading action, and is slow to heal. We have a similar ulcerative process in

(a) Avril, 1845.

those affections of the mouth, with which we are so familiar, and which commence without any assignable cause (perhaps from cold or deranged digestion), ulcerate, spread, burrow, throw out granulations, and heal rapidly on the use of caustic. These cases usually commence upon the prominent part of the lips of the uterus, whilst some, spreading from the interior, the result of, perhaps, a similar state of the lining membrane, extend to the os or vagina. Amongst other causes, simple ulceration of the neck of the uterus has been ascribed by some writers to the irritation produced by the action of catarrhal discharge passing over the lips, but particularly the posterior lip of the os uteri. This opinion has been so completely answered by Duparcque, that we need not apologize for transcribing his words: "*Souvent, en effet, il y a catarrhe utérin sans ulcération du col; souvent aussi il y a ulcération au col sans sécrétion intra-utérine; enfin, la non-récidive après cicatrisation de l'ulcère, nonobstant la persistance du catarrhe utérin, et souvent aussi la cessation de tout écoulement, par le seul fait de la guérison de l'ulcération, toutes ces considérations prouvent très-péremptoirement que ces écoulemens non seulement ne sont pas cause, mais sont plus souvent essentiellement la conséquence de ces ulcérations.*"—Tom. i. p. 374.

The spread of the disease here depends evidently upon the extension of the diseased action, through continuity of tissue, the primary diseased action (inflammation) pre-existing. It requires the touch of the examiner to be well practised to recognise simple erosion (as represented in Fig. 4); and even the most practised will be deceived occasionally if he rely upon it exclusively. In the milder forms it is merely the epithelium that is eroded, and in these the surface of the sore is so smooth, and free from granulated elevations, that the finger may pass from the smooth, polished surface of the healthy neck over the ulcer, without detecting it. When the ulceration is excavated, or when the granulations are sprouting, then this disease is more easily detected; but even in these it is often difficult to

detect it by touch, although the defined margin of the ulcer may appear so distinct, as seen through the speculum. (See Fig. 4.) The ulcer in some of these presents a violet tint, with little difference in elevation: but in others, particularly as the disease is of long duration, and more granular, the tint is more vivid, and the irregularity of surface more marked.

In this form there may be very little inflammatory or congestive alteration in the neck, and little granulation or irregularity even in the ulcer itself. What, however, will place its existence beyond a doubt, will be washing it over with a ten-grain solution of nitrate of silver, or passing the solid caustic rapidly over the suspected part, when the exact outline of the ulcer will be mapped, in a dirty white tint, as represented in Fig. 5, so that there will be no possibility of its escaping detection. Although this affection may be attended with little or no inconvenience, and productive of no discharge in many cases, yet it is extraordinary the amount of irritation that may attend it in others; and, on this account, when detected, it ought always to be cured, a process which is often accomplished by once touching it gently over its whole surface with solid nitrate of silver, and using daily for ten days a very mild astringent lotion, say, one grain of acetate of lead to an ounce of water. We may mention that in using vaginal lotions, to do so with any benefit, the patient should always lie on her bed, with the shoulders rather lower than the hips, and a vessel or bed-pan be placed underneath, to receive the fluid that has been injected; and unless a continuous stream of the lotion be kept up for some minutes, we can anticipate but little benefit from any application that it would be safe to inject over the vaginal mucous membrane. Feeling the difficulties attending the want of an instrument, which, whilst it kept up this continuous stream, could be easily used, not acted upon by chemical agents, and moderate in its price; we have, for some time, directing our attention towards these objects, and have at length succeeded in constructing what may

be called a gum elastic syphon, the plan of which is here given. It is used by alternately squeezing and relaxing the bag with the one hand (the bag filling by exhaustion through its own elasticity), whilst by means of a double ball valve, the fluid is taken up and directed through the tube, which is held in the other hand, into the vagina. It answers equally well as an enema apparatus, and for all the usual purposes of the syringe.^(a)



The Granular Ulcer is the next form we shall treat of. Like the simple affection just described, it may commence on the lip, or may extend from within; it may occur at one spot on the os, or spread over both lips. It frequently would appear to extend from within the os, and is thus very commonly found combined with the same state of disease in the mucous membrane of the uterus itself. The granulations in this are redder and more distinct than in the former case (see Fig. 6), and almost always combined with increased development of the lip or lips engaged, and often with the symptoms either of congestion or chronic inflammation of this part. When this affection extends upwards into the lining membrane of the uterus, a muco-purulent discharge exudes as well from the uterus as the ulcerated surfaces exposed to view. These surfaces, would not account for the amount of discharge which very often accompanies this affection, and which evidently comes also from the upper part of the vaginal canal, which is usually of a dusky brick colour, with occasional papillæ, as observed in Fig. 3. This also is a simple and curable affection, requiring, however, a longer time to cure than mere erosion. Its curability will be much influenced by the degree of inflammation or congestion that may accompany it, as these affections must be treated on the principles already laid down, to enable us

(a) This instrument is manufactured by Robertson of Bachelor's-walk, Dublin.

to heal the granulation. Whilst acute inflammation exists, there is little use in having recourse to caustics, which, in this case, also constitute the most effectual means of cure. The same observation holds with regard to chronic inflammation; and until it is somewhat ameliorated by depletion and the other means indicated, we shall derive little benefit from our caustics. Our experience does not, however, quite coincide with that of Lisfranc, that "caustic applications are quite inadmissible whilst any inflammation of the uterus remains." In many of these cases, after reasonable depletion was had recourse to, the inflammation (congestive in its character) appeared to be kept up by the irritation caused by the ulcer, and was only removed by the application of caustic to the ulcers, the ulcer healing, and the neck losing its hyperæmia, *pari passu*: nay, in others, the strong caustic lotion, and even the stick caustic, quickly passed over the unabraded but inflamed surface of the os, appeared to produce the happiest effects in reducing the chronic inflammation prevailing in it. This was particularly observable in old chronic cases in which depletion had been tried, but with little effect. The caustic applications made to the granular ulcerations will require to be repeated at intervals of seven to ten days for three or four times, using it more lightly on each succeeding application. When the granulations are destroyed, an altered and healthy action is induced in these old habitually secreting surfaces, the cicatrization spreads from the circumference after each destruction, and at length little islands of healthy mucous membrane, with its epithelium, appear, dotted through the old granulations. In the interim between the caustic applications mild astringent lotions should be daily injected; lead, zinc, copper, alum, decoction of oak-bark (a), and iodine lotions, if little inflammation be present; vegetable astringents, as tea, chamomile, poppy, and

(a) M. Gilbert strongly recommends an alcoholic tincture of tannin, mixed with seven parts of water.—*Gez. Med.*, August 9, 1845, and *West's Report in Brit. and For. Quarterly*, vol. xiv. p. 293.

marsh-mallows decoctions, if inflammatory symptoms or irritation occur. Counter-irritation by stimulating liniments, and small blisters, and even leeching and the lancet may be employed, at intervals, if required, and alterative doses of mercury also, provided no scrofulous diathesis precludes this. This affection, or modifications of it, would appear to prevail to a much greater extent in the scrofulous diathesis, and in such it always produces greater inroads upon the constitutional health.

The form of ulcer next to be considered is an aggravated granular condition, which we shall denominate the Cock's Comb Granulation, from its resemblance to this structure (see Fig. 7). It generally engages the immediate margin of the os, consisting of large, sprouting, papillous granulations, with or without intervening fissures dividing them into lobulated portions, the lobes, when present, appearing to dip a good way into the cavity of the uterus. The first few cases of this kind we met with caused much anxiety as to their being curable in their nature; but the result of our observation upon them is such as to satisfy us that they are just as certainly (although more slowly) curable as the simplest granulation. On touching them steadily with the solid caustic it seems to sink into them, the structure offering little resistance, and a little blood may escape from the part touched. From these circumstances much anxiety has been evinced about these cases, and it has fallen to our lot to relieve from the impression that the patient was labouring under a malignant disease more than one such case, where even unfavourable medical opinions had been already pronounced. The caustic application requires to be made more freely here, so as to procure a decided slough, and get more speedily at the healthy parts underneath. If the solid nitrate of silver be employed, it should be pressed steadily, and for some time, against the sprouting granulations; if the nitrate of mercury (which we prefer), then the brush dipped in it must be repeatedly applied, and introduced well into the deeper diseased structure within the os

It should have been mentioned that the slough takes, in this class of morbid organization, but a short time to separate; in some cases it is thrown off in twenty-four or forty-eight hours, in others it requires three or four days, according to the freedom with which the caustic has been used, and the extent of the structure destroyed.

There is another form of ulceration which resembles that now described, but is less sprouting in its granulations. It assumes, like this, a vivid red tint generally, engages one or both lips of the os, close to the aperture, although not necessarily found here, and occasionally extends completely into the neck, engaging the entire of both lips: it is generally, in its advanced stage, very lobular and fissured in its character, although not necessarily so at first, or when at some distance from the os: it is what might be termed doughy, or "boggy," in its structure, the caustic, or sound, sinking very deeply into it without any resistance being offered, and its bleeding very freely on the slightest touch: it is commonly attended with irregular red discharge, appearing at intervals, and particularly after intercourse; this occasionally amounts to debilitating hæmorrhage, with discharge of clots, and this is often the symptom that calls the attention of the patient to her being out of health. The leucorrhæal discharge may be trifling, and cause little attention. This we would designate the Bleeding Ulcer (see Fig. 8), and, although a perfectly curable affection, it is likely to be confounded with the malignant ulceration from its appearance and hæmorrhagic tendency. It is not impossible that some of the cases of reputed cures in cancer uteri, of which we hear, may have been simple cases of this form of disease; and we are free to admit that we have had extreme hesitation in pronouncing, in the first instance, a prognosis in some such cases, particularly where the ulcer was combined with induration.

The following case, attended in consultation with Dr. James Brady, and reported by him, affords such an example.—"Mrs.

—, aged 48, of dark complexion; had six children; enjoyed uninterrupted good health until about two years and a half ago, when her 'changes' became more abundant, and more frequent than natural; but, attributing these irregularities to 'change of life,' she attached no importance to them, particularly as (with the exception of a white discharge in the intervals), she had no other symptom of disease. In January, 1846, the monthly change was accompanied, for the first time, by an alarming hæmorrhage, and for the following six months she had several similar attacks, which had reduced her, in August, when she sought advice, to a very low and dangerous condition. In addition to all the usual symptoms attending repeated losses of blood, the skin had assumed that peculiar green waxy hue so often found in organic disease; there was great debility, and the most obstinate vomiting, and the blood was flowing from the vagina in a continued stream; the os uteri was patulous, allowing the finger to be passed high up into the neck, which felt hard and slightly hypertrophied; the speculum revealed a fissured, granular ulceration occupying the anterior and posterior lips, particularly the former, and extending high into the neck. A pencil of nitrate of silver was freely applied to the bleeding ulcers on the os and neck as high as could be reached, and the vagina plugged, which completely stopped the hæmorrhage. Subsequently the fluid nitrate of mercury was substituted for the nitrate of silver, and applied as freely both to the neck and os. In about three weeks the hæmorrhage returned, and was again completely controlled by the same means; during the three following months the nitrate of mercury was regularly applied about once a fortnight, always with obvious advantage; the whole discharge, which previously had a peculiar unhealthy odour, now assumed the character usually found in simple leucorrhœa. The only constitutional treatment adopted was alterative doses of Plummer's pill, Donovan's syrup of bark, and sulphate of quinine.

"For the last three months the menses have been regular, both as to time and quantity, the only thing complained of being a slight pain at the commencement of each period; the ulceration is quite healed, but there is still some slight redness and congestion, particularly on the posterior lip; the skin has assumed its former healthy hue; the appetite is good, and, except a slight pain in the back, the patient considers herself in as good health as she ever enjoyed."

This case is further illustrative of the inconvenience or mischief that might result from treating some of those hæmorrhagic and irregular discharges occurring about the cessation of the menses, as merely depending upon what is termed "the change of life."

It is difficult to say how much of the hæmorrhage had come from the ulcer, or whether there was not also a discharge from the interior of the uterus; we would incline to the latter supposition, in cases where, like this, the hæmorrhagic discharge was so profuse. We should not be deterred from the application of our caustic by the bleeding in these cases, and unless freely used it is of little or no avail, as the blood which flows protects the surface from its action, and neutralizes it. A piece of lint ought to be applied carefully round the margin of the ulcer before each application of the caustic, to absorb any that escapes, and prevent the adjoining healthy structures being injured. When the cauterization is completed, the passage ought to be freely washed out with a continuous stream of water, kept up for some time. This, as well as the last described granulation, is very likely to be combined with diseased action of the lining membrane of the uterus, particularly when it has its seat on the very margin of the lips, the interior of the uterus bleeding freely in these cases, when a sound is passed within it. The caustic ought to be passed as far within as we can introduce it, and applied freely to its interior, and for this purpose the nitrate of mercury, on the camel's hair pencil, is preferable to the nitrate of silver, as it is more easily applied, capable of

being more generally spread over the diseased structures in the interior, and not liable to the objection that holds as regards the solid nitrate of silver, namely, its breaking off, and remaining within the uterus. To prevent such an occurrence, where the nitrate of silver is used, it ought to be melted into a port caustic, as recommended by Mr. Wilde, in the treatment of disease of the external meatus auditorius. See Dublin Medical Journal, vol. xxiv.

Not only should the caustic be applied to the interior of the uterus in these cases, on each occasion that we apply it to the diseased structures visible to the eye; but, as the healing usually goes on from without inwards, its use ought, as a precaution, to be repeated afterwards, so as to secure that the healing action is complete within the uterus, as well as without. The mucous membrane on the interior of the lips losing its angry granular character, its ceasing to bleed on being slightly touched, the absence of the muco-purulent secretion, and conversion of the discharge, if it continue, into a transparent, glairy mucus, are the only sensible evidences we possess of a healthy state of the lining membrane, and our caustic application, followed by the milder caustic or astringent lotions, should be repeatedly applied with the brush to the interior until these effects are produced.

It may be asked how far we are justified in thus describing these ulcers or granulations of the uterus under distinctive denominations; and whether they are not referable to the same diseased action in different stages of its development? This question has frequently occurred to ourselves, and we can only state that had we been able to arrive at such a conclusion with certainty, it would have been propounded; it was, therefore, deemed more correct to represent the varieties or modifications exactly as they presented themselves to us, leaving other observers to form their own conclusions.

It will have been observed that the same plan of local treatment, very slightly modified, according to the circumstances

of each case, applies to the different cases described, requiring in some to be much longer persisted in than in others. The general treatment necessary will vary very much according to the habit, constitution, and general symptoms of each case, and the stage at which our assistance is sought. A strong, plethoric young female labouring under an ulcer, immediately consequent upon, or co-existent with, inflammation of the uterus and vagina, will require depletion and anti-phlogistic treatment; whilst a granular ulcer, attended with profuse discharge, in a worn-out, attenuated female, would not only be injured by such a plan, but demand a course of treatment directly the reverse. Again, marked inflammation or congestion occurring even with the habit last described, would indicate the necessity of local depletion, combined with a more tonic regimen; whilst indications of a scrofulous diathesis would point out the propriety of using those specific means we know to prove successful in such cases. The frequency of the occurrence of these affections in connexion with scrofula cannot be too strictly borne in mind.

The use of wine, malt drink, and animal food, is a subject that requires distinct consideration in each individual case. As a general maxim, we would say that the two first are best abstained from, or, if permitted, given very sparingly; there are, however, cases in which they become imperative, as the constitutional health gives way on their withdrawal, and of course the reparative powers are unequal to their task. The principal objection to their use is their effect in keeping up chronic inflammation and congestive determination, and it must always be borne in mind that a strong predisposition exists, particularly to this latter affection, after healing up these long existing ulcerations, requiring our most marked attention to prevent, or, if it should occur, to remove. Everything, therefore, calculated to induce irritation or congestion, must be abstained from; thus, long continuance in the erect posture, jolting in carriages over rough roads, intercourse, wine, fermented

liquors, stimulating food, and exposure to cold or fatigue, are all to be avoided whilst under treatment, and even for some time after the healing of the ulcer, as we have known a neglect of these precautions frequently retard the recovery, and even produce relapse. Should these precautions be neglected, and congestion occur, then the uterus is likely to relieve itself either by a hæmorrhagic discharge, more or less profuse, or by blennorrhagia occurring from the uterus, vagina, or both. Should these symptoms set in, leeching may be necessary, but our patient can seldom bear depletion well at this stage of her treatment. Counter-irritation now becomes the most powerful means of reaching these deep-seated congestions and inflammations, particularly when attending the structural alterations and chronic affections described; and with this view, either the application of repeated small blisters over the pubes or sacrum, Albespeyre's paper, or the hot iron, as recommended by Dr. Corrigan in sciatica, will be found very serviceable. In some of the more obstinate cases, which did not yield to simple remedies, the introduction of a caustic issue, kept open for some weeks, or months, has been most efficacious. The nitrate of mercury allowed to lie on the abdominal surface, over the pubes, for some minutes, has answered very well, and produced a sufficient slough to imbed a piece of felt in, and is a less severe and painful application than the *potassa fusa*, generally applied where caustic issues are required.

We should have mentioned that amongst the plans of constitutional treatment had recourse to in some of the more obstinate cases described, change of air is pre-eminently useful. Often have we seen these ulcers become stationary in some stage of their progress, then extend, assume an unhealthy appearance, and, when every variety of local treatment seemed to fail, moving our patient a few miles from her previous residence induced a speedy healing action. In the lapse, perhaps, of a fortnight matters again became stationary, when the change of place was repeated with the same good effect. In fact, this

circumstance is now so familiar to us, that not unfrequently a patient is kept moving about from place to place until the cure is effected. It is remarkable also that this check in the progress of healing is more likely to occur in the approximation to cicatrization than in the earlier stage of the treatment. Sea air answers best in the great majority of cases, but we have even found a change from the coast inland of service. The air of Kingstown seems to agree particularly well with most of them.

It occasionally happens, that, just on completing the cicatrization of one of these old granulations, an aphtha appears upon its surface, exactly as in the mucous membrane of the fauces in infants, and if treated injudiciously it may spread over the membrane, or the ulcer may open out afresh. A continuous stream of borax solution, with an occasional painting over with the weak nitrate of silver lotion, a course of mineral acids, or waters, and, above all, change of air, will soon remove this, but it ought not to be lost sight of, lest it run to ulceration.

We have generally found that, when our patient was in circumstances to admit of such a thorough constitutional change as a tour to the German watering-places usually produces, and when the season of the year allowed of it, her permanent recovery was best secured by availing herself of the advantage of this after the healing of the ulcer. Homburgh and Kissingen are the waters most safe and useful, and care should be taken not to use waters containing much iron, if any tendency to congestion exist, as we have known much mischief done by neglecting this precaution. Where a more aperient course is necessary, Pullna water answers very well, and as a resolvent remedy this water can be used at home, taking from an ale-glassful upwards each morning before breakfast, and walking for half an hour after taking it. When the digestive organs are sluggish, and congestion exists, or is threatened, this course answers particularly well. The Brighton Pullna, or Peilnar water, prepared by Straus, answers quite as well as the real water.

Although the ulcerative affections described cannot be said absolutely to preclude the possibility of pregnancy, there can be no doubt that they lessen the liability to its occurrence (and particularly the last forms detailed), so much as to justify their being enumerated amongst the causes of barrenness. Several remarkable cases illustrative of this fact have occurred under our notice, in which ladies, married for years without a family, and labouring under these affections, had proved pregnant within such a term from the healing of the ulcer, and return to uterine health, as to leave little doubt that they stood in relation of cause and effect without even straining a *post hoc* case. Although in two or three instances pregnancy occurred within two or three months after their cure, yet generally it required a much longer time, say six months or a year, or even two years: as if the organs had required time to recover their tone and functional energies after a derangement of this kind.

In illustration we may give a case occurring in June, 1843. Mrs. —, aged 27, of a scrofulous diathesis, six years married; had two children, the youngest four years old; miscarried shortly after the birth of the last, since when has suffered from constant blennorrhagia, with dragging pain in the back; lassitude; loss of appetite, and great debility; has been abroad for treatment and change of air; has taken tonics without end, and used astringent lotions with temporary check to the discharge. On examination, an ulcer, of the cock's-comb character, was detected, which healed under the use of caustic, residence on the sea-shore, and iodine, with occasional tonic alteratives. This lady went to the country perfectly cured of the ulcer after three months, and within two months proved pregnant, went to her full time, and has since had two children.

When pregnancy occurs along with an ulcerated state of the os, particularly if the inner margin of the lips, or lining membrane of the uterus, partake of the disease, we can well understand that hæmorrhagic discharge from the uterus is

likely to occur at any stage of gestation, but more especially when the neck takes on its development. These cases are not only predisposed to abortion, but those repeated premature confinements, preceded and attended by hæmorrhage, which we meet in the fifth, sixth, or seventh months, not unfrequently depend upon this circumstance, a fact that should be always borne in mind and inquired into when consulted about miscarriages or premature confinements, with a view to their prevention in future pregnancies. If an ulcer exist it should be cured before reimpregnation; many cases illustrative of the importance of attention to this circumstance could be adduced. Now, although the ulcer be healed before reimpregnation (and thus confinement to the recumbent posture for months may be avoided), yet let it not be imagined that no precaution is necessary on the recurrence of the period of former miscarriages, or premature confinements, as habit engenders a tendency to unload the womb at given periods, and great care should be taken at these times to prevent its occurrence, even although no threatening by discharge evince itself.

It will naturally occur to us from what has preceded, that as well with a view to impregnation as in order to prevent the throwing off the ovum prematurely, the more perfectly the organs shall have returned to their healthy condition, and the longer time that elapses without cohabitation, the more likely is impregnation to take place, and the less likely to be prematurely interrupted.

We have seen that ulcers of the neck of the uterus do not absolutely preclude the occurrence of pregnancy,—nay, the fact of this function being accomplished with the coexistence of even malignant ulceration of the neck, is long familiar to the profession. When consulted in a case of this complication, are we justified in undertaking to heal the case locally, pending the expiration of the pregnancy? The inducements to adopting local treatment, then, are the possibility of the disease spreading if allowed to continue unchecked, and the constitu-

tion taking up the diseased action, as in specific ulcers; the checking a profuse weakening discharge; and the prevention of miscarriage or premature confinement. On the other hand, it may be fairly questioned whether the risk of miscarriage or premature labour would not be greater under the repeated use of the speculum and other local interference than by leaving the case to be restrained by mild astringent injections, and carefully-directed constitutional treatment until after labour. As a general rule, we would recommend the latter plan, although in some cases we have been obliged to adopt a different one; for instance, in a well-marked venereal ulcer we have no alternative but the use of such treatment, both local and general, as will prevent the ravages of this disease. Even in a case exhibiting suspicious characters, the same plan becomes necessary.

In other ulcerations also, where it is a choice of evils,—for instance, those exhibiting doubtful characters of malignancy, lupus, or phagadenic ulcerations,—we would not feel justified in losing several months in our endeavours to check their progress. In aggravated cases of what we have designated the bleeding ulcer, attended with repeated hæmorrhages, which, if unchecked, not only much debilitate our patient, but are also likely to induce miscarriage, a similar plan is necessary. Several such cases have occurred to us, in which we have, by local treatment, prevented these repeated discharges, and enabled our patient to go to her full time, although having had repeated premature confinements before from this cause. A case of this kind occurred in a lady who sought advice for sanious and purulent discharge, with occasional hæmorrhages, great debility and depression, quick, small pulse, and constant apprehension of miscarriage, having aborted before, under similar circumstances, about a month later in her pregnancy. On examination, a bleeding ulcer, such as is depicted in Fig. 8, occupied the entire circumference of the os, extending evidently some way into the neck, which was slightly patu-

lous, and plugged with glutinous secretion. A stick of nitrate of silver was passed quickly over the ulcer, and as far within the os as was practicable without using any force or disturbance to the parts. This operation was followed by an immediate check to the discharge, from which the patient continued free for four days. The superficial slough then separated with slight return of red-tinted discharge. This operation was afterwards repeated on three occasions with intervals of eight days, the saturnine lotion being used daily in the interim, when the discharge totally ceased. The patient improved in strength and appearance, was able to walk and drive about, and went on to her full time free from inconvenience. When she was examined after her confinement, a very slight ulceration was perceptible on the posterior margin of the neck, which was healed by one caustic application.

Although the simpler ulcerations, and particularly those on the neck, at a distance from the os, might be cauterized in pregnancy with less risk of producing miscarriage than the case where the ulcer extends within the os, yet as no urgent necessity for interference exists, we had better leave them to the use of astringent injections until after labour. Certainly in no case of pregnancy, where milder and less irritating means were available, and promised fairly, should we be induced to follow the injunctions of M. B. de Loury and Costilhes, and use that most potent of all caustics, the Vienna paste, and afterwards plug the vagina for twelve hours, with a view to the cure of the ulcer.

The occurrence of inflammation and ulceration of the cervix in virgins is less frequent, for obvious reasons, than in the married female; but it also occurs with them. With the exception of the linear or fissured ulceration (which is confined, as far as our observation goes, to the married female who has been impregnated, and results from the effects of impregnation), most of the other forms of inflammation or ulceration occur in unmarried females, or in females so recently married,

and exhibiting such evidences of its having existed previous to matrimony, as to leave no possible doubt that they had long suffered from it in the virgin state.

Opportunities of investigating these cases are comparatively rare, as it is only in the more aggravated forms, and where every other available means have failed, that an examination is instituted.

Some months since, our advice was taken for a young lady aged 19, six weeks married, and who had suffered from hæmorrhagic discharge from the uterus from a few days after her marriage. On inquiry it was ascertained that she had had repeated irregularities of a similar kind since she was fifteen years of age; the menorrhagia alternating with blennorrhagia, the latter to a slight extent. Under these circumstances a vaginal examination was instituted, and instead of an ovum (she supposed herself pregnant and threatened with abortion), a bleeding ulcer was found to occupy both lips of the os and to spread some way up into the neck, which was prominent, rather hard, and fuller than natural, but exhibited all the characteristics of the virgin uterus. This case was treated with caustics and iodine; stimulants and tonics, which had been very freely given, were withheld; she perfectly recovered, the ulcer cicatrising, and the menorrhagia and blennorrhagia totally disappearing.

In the case of an unmarried lady, aged 30, for many years in ill health, wasted, subject to repeated attacks of menorrhagia, with blennorrhagia to a slight extent in the interim, and who had been repeatedly treated with tonics, astringents, &c., the relations required an examination to be made, as every plan of treatment had hitherto failed, and malignant disease was dreaded. This was done, after a preparation of some days by bougies, when a granular ulcer was detected by the touch. The constriction of the parts was such that a speculum could not be used without great suffering; caustics were applied through a tube, and astringent injections used daily;

counter-irritations had recourse to, and a course of Plummer's pill and Pullna water administered. The ulcer healed, and her health and appearance rapidly improved, with a total recovery from both sanguineous and muco-purulent discharge.

Nothing is more striking in these cases of recovery than the change effected in the skin, and its return to the tints of health, from its shrivelled, anxious, and sallow appearance.

The fissures that occur from abortions and labour, in the lips of the os, constitute a frequent incipient cause of ulceration, which, taking on an unhealthy action, attended with vascularity of the adjoining tissues, spread both within and without. They are sometimes, however, confined to the very margin of the os. These are fissured or linear ulcerations (see Fig. 1), which require to be treated with caustics, as those ulcers already described: the caustic should dip well into the bottom of each fissure, as in fissures of the anus, to secure their healing.

The small tubercles^(a) occasionally observed in the cervix uteri are said to pass into scrofulous ulcers, as in other parts of the body; but we have been unable to trace the transition so markedly as to justify our ascribing any of those ulcers we have met with to this cause.

The genito-urinary mucous membrane is markedly liable to catarrhal affections from cold, or other causes determining to mucous membranes, such as this susceptible structure is in very many cases predisposed to. Thus, as we see in some a liability to nasal, and in others to bronchial or gastric mucitis; so in many females there exists a strong predisposition to its occurrence in the uterus or vagina. Catarrh in the uterus is much more obstinate than this affection in the vagina, and the inflammation of the latter mucous membrane more tedious in resolving itself than that occurring in the nymphæ and vulva. Thus, the deeper the seat of the disease the more difficult to cure, a fact which is observed to

(a) See Dr. J. H. Bennett's excellent *Practical Treatise*. London, 1845.

occur independent of the difficulty attending the treatment. The same observation applies in the male^(a), the inflammation of the prepuce and glans penis being much more under control than that of the urethra, or throat, &c.

In catarrh of the uterus the disease commences with simple inflammation of the lining membrane of this organ, which may be confined to the cavity of the neck, or extend throughout the body. The inflammation may extend to the submucous tissue, accompanied by tension and fulness in the uterine region, the natural secretions being first, perhaps, suspended, then increased. The glandular structures in the neck and os become diseased, a muco-purulent secretion takes place from the interior of the uterus, exhibiting, as the effect of the glandular hyperæmia, a glairy, viscid, and extremely tenacious character, constituting one of the most marked pathognomic signs of this affection. The menstrual secretion may continue to return with regularity, or it may be suspended; and, in the latter case, the suspension is often combined with congestion of the uterus, adding to its bulk considerably (see Figs. 1 and 9), and causing an increase of all the symptoms of local distress. This state may persist for a few months, when the menstruation may return in excess, and recur irregularly, assuming, at times, a hæmorrhagic character, and induced by slight exertion or irritation. This state, owing to the suppression of the menses, and increase in development of the uterus, has been mistaken for early pregnancy; the uterus assuming the size of the pregnant organ from the first to the third month.

When the menses continue regular the uterus increases but little in development, but usually appears deeper in colour, from the congestion which so generally accompanies the catarrh; the os is usually patulous, the inner edge red and granular, bleeding on the slightest touch, and the os plugged up with viscid, muco-purulent matter, a portion of which hangs out into the vagina, and which, on examination, presents the

(a) See Acton on Venereal Diseases, p. 47.

appearances observed in Fig. 9. The mucus is removed with the greatest difficulty, and the sound or brush introduced within the cavity of the neck for this purpose invariably causes an escape of blood from the diseased membrane on the slightest touch.

This is a disease frequently met with in married females who have borne no children, and is one of the most frequent accompaniments of barrenness—frequently, perhaps, its cause; it is also often met with in unmarried females; and married females whilst they often trace it to repeated early miscarriages, just as often admit its having existed years previous to their marriage(a).

There is an expression of countenance, distressing in its nature, and a tint of skin, as if washed over with a dirty brush, which usually accompanies this affection, and which there is no mistaking. What causes the disease to escape the ken of the practitioner, in general, is, that on an ordinary vaginal examination, no diseased state of the uterus can be detected, and even with the speculum we may overlook it, as the alteration of the mucous membrane does not always extend to the everted portion of the lips (as it does in Fig. 9); the glairy mucus filling the os may be absent, or, if present, esteemed a natural secretion. Whenever the appearance of the skin just described, accompanied with an anxious expression, is found in a barren female, whose uterine health is deranged,—more especially if she have red discharges occurring from the uterus at irregular periods, with or without the glairy discharge, and accompanied by debility and lassitude,—this disease should be suspected, and a careful inquiry as to its existence instituted.

It is of great importance that this disease should be arrested, as, although it may go on for many years, after the constitution becomes reconciled to it, producing little more inconvenience than that mentioned above, yet, in some cases it proceeds to a state of disorganization of the uterus, the submucous

(a) This is a common appearance in prostitutes.

tissues becoming more extensively engaged, and undergoing a change which may be termed *uterine ramollissement*, attended with frequent hæmorrhages and unhealthy grumous or muco-purulent discharges, the constitution sympathizing more and more with the disease, until the patient sinks under it. This termination is, however, rare, yet there can be little doubt, that, without the disease proving in itself directly fatal, it lays the foundation of such constitutional delicacy as indirectly to produce a fatal result by the induction of other diseases of debility, as phthisis and dropsy, &c.

The difficulty and risk attending applications made to the interior of the uterus, render the chronic affections of its lining membrane less promising in their recovery. When the diseased action is confined to the cavity of the neck, it is more within our control; and here a catheter loaded with nitrate of silver, or a port caustic constructed as already mentioned, so that the caustic cannot possibly escape and remain in the uterus, may be repeatedly applied, and by this means the action of the membrane altered, and reduced to a healthy state. The nitrate of mercury is both a safer and more efficacious alternative in these cases. A camel's hair brush, dipped in this fluid, may, where the os is sufficiently patulous, be passed within it, and carried quickly over the interior membrane, re-dipping and again introducing it until a sufficient effect is produced. The os is very likely to contract after its first or second introduction, rendering its repetition difficult, and it would not be safe to introduce a larger quantity than the brush will carry. In order to secure the caustic's being diffused over the interior, and not wiped off at its entrance by the lips, it is well to use a gum-elastic tube, open at the extremity, through which the loaded brush can be passed. This plan will enable us also to get our applications high up into the body of the uterus. The greatest difficulty we have to contend with, in some of these cases, is overcoming the contraction of the neck, or inner os, in order to get up to the body. This must be done by a series of bougies, and those made of gutta perca

answer particularly well, from their combining resistance with elasticity, so as to lessen the liability of using any injurious force in overcoming the spasm. When this has been sufficiently overcome to admit of passing the largest-sized catheter or tube, as already described, our applications can be made through it. If a brush be used, it can be loaded and concealed within the tube until the point of difficulty be overcome; and then, having previously taken the precaution of graduating the handle to which the brush is attached, we can move it over the interior of the uterus free of the tube, and withdraw it: the brush or sponge should be so fastened to the stick as to prevent the possibility of its separating. In this way nitrate of silver, its solution, nitrate of mercury, nitrate of copper, or whatever application we place most confidence in, can be applied with safety.

We had been in the habit of using injections freely into the uterus for some years without any inconvenience, until we observed a case published in one of the periodicals about nine years ago, in which this operation was reported to have been followed by fatal peritonitis, in consequence of the injected fluid escaping into the abdominal cavity through the Fallopian tube; since then we have adopted this practice less frequently, and with such precautions as to prevent the possibility of any mischief of this kind occurring. By means of a long, graduated glass syringe, a quantity of fluid, not exceeding twenty minims, can be thrown into the cavity of the uterus, and its escape secured in the following manner: the syringe, attached accurately to a small male gum-elastic catheter, is fitted into a somewhat shorter catheter or tube, open and well-finished at its extremity, the difference in calibre between the catheters being such that the large catheter admits of the regurgitation of the fluid between it and the smaller. The syringe and inner catheter are first charged with the fluid to the point, leaving the piston so far withdrawn as to allow merely twenty minims, or half a drachm, in addition to the charging of the tube, within the cylinder of the syringe, as

proved by the graduated mark on its side. The patient is now placed in the recumbent posture, the tube introduced, the inner catheter (graduated also, so as to indicate when it projects beyond the other) is passed through, and the fluid slowly projected into the cavity of the uterus. After resting there as long as we wish, the piston may be drawn up so as to suck any remaining portion of the fluid, and a little water thrown in, in the same manner, if required; or the larger tube allowed to remain, so as to secure the escape of any remaining fluid.

By this means, applications can be made with safety to the interior of the uterus, and, as in these obstinate, and often unpromising cases, to prove efficacious, they require to be several times repeated, it becomes a great desideratum that their use should be attended with the least possible risk and inconvenience.

It should be mentioned, that in two out of many cases in which uterine injections have been practised, they were succeeded by acute hystericalgia, accompanied by severe dragging sensations in the loins and back. These symptoms, although at first apparently alarming, yielded in both instances to full opiates, the warm bath, and abdominal fomentations.

After the free cauterization with nitrate of mercury having been repeated in these cases three or four times, at intervals of eight or ten days, a ten-grain solution of nitrate of silver or nitrate of copper may be used at intervals of three or four days for some time; afterwards, the repeated use of acetate of lead, zinc, and borax lotions, at first concentrated, and then about two or three grains to the ounce, seem to agree best. With this local treatment, engorgement, which is very commonly present, must be removed by direct leeching, if the patient can bear it, followed by counter-irritation, as already described. Occasional mustard plasters, stimulating liniments, or the emplas-trum calefaciens, or a plaster of Burgundy pitch and tartar emetic, may be allowed to remain for some time over the pubes, or on the sacrum; and, in cases where the obstinacy of

the congestion requires it, and the patient's constitutional health will permit of it, a more permanent drain by means of potassa fusa, the Vienna paste, or nitrate of mercury, may be established.

The use of such remedies as induce a healthy action in the catarrhal affections of other organs may be tried, and the balsams, cubebs, and buchu, seem occasionally of service. Tonics, although inadmissible in the first instance, and calculated to aggravate the disease, yet, when cautiously tried after the local treatment, or combined with it, appear of service; of these the best are the mineral acids, zinc, quinine, and the iodide of iron; but if a hæmorrhagic tendency exist, iron must be used with great caution. Benefit appeared to have been derived from Donovan's arsenical solution, in some of the more obstinate cases, when other means had failed. The most powerful alterations, in these cases, are change of climate and the cautious use of mineral waters: of course abstinence from every local irritation, and from the use of stimulants, is essential. Although nutritive diet and moderate walking exercise are admissible, a total change to a milk diet, giving up meat, wine, and malt altogether, has sometimes appeared beneficial.

The symptoms that indicate improvement here are, diminution of the size of the uterus and of its accompanying distress, when engorgement had coexisted with the catarrh; the diminution and alteration in character of the secretion; its losing its opaque muco-purulent appearance, and becoming transparent and glairy; the skin assuming a healthy tint, and the person getting less wasted, whilst the irregular sanious discharge, as well as the excessive hæmorrhagic and painful menstruation, ceasing. But the crowning proof of recovery from this disease would be pregnancy, as we have met with no affection of the uterus, where an absolute mechanical obstruction did not exist, so invariably attended with barrenness as catarrh, a fact ascribable to the viscid secretion blocking up the uterus,—as well as to the change effected by the diseased organ interrupting its functional powers in reproduction.

It not unfrequently happens that, when an ulcer of some standing is healed (whether it had or had not been previously combined with engorgement), congestion of the uterus sets in, and in this case the congestion generally extends to the body as well as the neck of the uterus. The same observation holds on altering to a healthy state the secreting lining membrane of the uterus, in cases of catarrh, and also in cases of inflammation of the glands in the neck.

This result is much more likely to occur in those cases in which the engorgement or subacute inflammation, co-existing with these morbid states, was not sufficiently attended to and relieved throughout the progress of the recovery, by unloading the vessels sufficiently at this time, either by leeching, scarification, or counter-irritation. This will be indicated by pelvic and lumbar distress, throbbing, and bearing down, and, if neglected, may terminate in a natural effort to relieve itself, either by the occurrence of menorrhagia, or a profuse blennorrhagia, or sometimes, in the first instance, by amenorrhœa, which after continuing for some months, merges into one or other of the former states. Should this result unfortunately occur, it must be met promptly by depletion, if the patient can bear this; and, if a plethoric female, by general as well as local depletion. If these means fail, by repeated small blisters, applied over the pubis or sacrum; or, in more obstinate cases, by the insertion of an issue. When the congestion extends to the whole uterus it is rarely relieved without very decided counter-irritation. This engorged state of the uterus is very liable to alternate with, translate to, or coexist with, congestion of the liver or spleen; a fact that ought to be borne in mind, as these states set in so rapidly at times, as to render them difficult to discuss, and more particularly, if our patient be worn out by the disease, and reduced by the treatment, it places her in a very unfavourable position for bearing the discipline which this new complication demands.

Leeching and counter-irritation, with mercurial alteratives, must be had recourse to, for the organs secondarily engaged;

but what we have derived the most marked benefit from under these circumstances, has been a course of Pullna water, and taraxacum, followed by the discutient waters of Germany, change of air, and the use of the Russian bath.

We have already stated, whilst treating of this affection, coexisting with ulceration, that the use of tonics, although sometimes indicated and required, must be resorted to with the greatest caution. The same observation applies, with equal or even more force here; and whilst we can bear testimony to the marked benefit occasionally derived from a judiciously administered course of tonics, and even of steel (which is that most prone to increase congestion), we must state, that we have seen a vast deal of mischief done by their indiscriminate use, and marked engorgement of uterus and liver recur again and again under their administration, where the indications were such as to tempt the physician to avail himself of the acknowledged advantages afforded by this class of remedies in improving the general health.

We have now to treat of an occasional complication of these uterine ulcerations, requiring especial attention, we mean mucous polyp^(a), as their existence often escapes our notice.

Fig. 10 affords an example of that peculiar form of polypus, in which the thinnest possible layer of mucous membrane investing a glutinous fluid, grows from the inner surface of the uterus, generally the neck, by a long, thready pedicle. There may be several of them, rarely but one; and they are, in the great majority of cases, combined with an unhealthy state of the lining membrane of the uterus in the neighbourhood; in some presenting chronic inflammation merely, in others a state of ulceration, with hardness and unhealthy degeneration of the uterine wall; whilst in many, catarrhal inflammation of the whole lining membrane accompanies their growth. Although the polypous growth projects generally beyond the os, it is so yielding in its nature that it requires a practised examiner to detect it by

(a) See Dr. Bennett's papers in *The Lancet* for 1845; and Dr. Montgomery, in *Dub. Quar. Jour.* for Aug. 1816.

the touch alone: affording little more resistance than a globule of viscid mucus exuding from the uterus. The speculum, however, sets any doubt that remains, as to its existence, at rest, as it exhibits the projecting pendulous substance observed in Fig. 10. This is rather larger than those usually met with; and from the effect it produced in interfering with impregnation, in the following case from which this drawing was taken, demands our attention.

Our professional assistance was required by Mrs. —, for irregularity, as she termed it, in her periodic health, consisting of a protracted hamorrhagic discharge. She was about thirty-eight years of age, and had had one pregnancy immediately on her marriage, but miscarried, and had not since conceived. On examination, a small, mucous, polypous growth was detected, filling up completely the os uteri, in fact quite as effectually as if it had been plugged. The lips of the os were tumid, and the margins inflamed. The growth was removed by scissors, and no other presented itself. The solid nitrate of silver was passed freely into the os, which was inflamed and slightly ulcerated on the inner surface; and she was allowed to return to her residence, a few miles from town, with injunctions of separation. Within a month she was again visited, suffering intense sickness of stomach without any assignable cause; pregnancy was suspected, although the suspicion appeared a vague one under the circumstances, but its possibility was strenuously denied by her; nevertheless she was delivered of a healthy boy, within eight months and a fortnight from this time.

This result is, however, a rare one in these cases, as generally the diseased state of the lining membrane of the uterus is such as to preclude pregnancy. Other similar growths exist higher up in the neck or body of the uterus, sometimes extremely small and with shorter pedicles, and these come down at uncertain intervals. Sometimes several very small ones, giving the appearance of little more than hypertrophied papillæ, are perceptible within the neck, with or without intervening

ulceration of the mucous membrane; in more aggravated cases the ulcers appear excavated into the substance of the uterus. The patient's countenance is sallow, and indicates disease; usually there is wasting, loss of strength, with pelvic distress, and not unfrequently, as in catarrh, these symptoms are accompanied by displacement of the uterus. We imagine that this, as well as uterine catarrh, is more frequently met with in gouty habits, and is not an uncommon affection in females who are said to recommence menstruating at a very advanced age, or rather who have irregular hæmorrhagic discharges at this period. Removal of these growths and the free use of caustic, particularly the nitrate of mercury, to the interior of the uterus, about their base, followed by mild astringent applications and weak caustic solutions and alteratives, becomes necessary; and, if engorgement and catarrh coexist, the treatment applicable to these states is to be employed.

A converseance with the *sympathetic affections* which these lesions of the uterine structures give rise to is of the utmost importance to the practitioner, as ignorance of them has been too often the source of protracted suffering to the unfortunate patient; they may be pronounced local and general, and are often so much more marked and prominent than the disease itself, as to engross our exclusive attention. Those of the bladder and rectum are amongst the most frequent; for instance:—In June, 1841, Miss —, unmarried, aged 32, of a spare habit, anxious expression, and dingy complexion; complained of dysuria and frequent micturition, particularly at night, rendering her nights miserable, and, as she expresses it, life a burden to her; urine natural, except when digestive organs are mismanaged, then slightly turbid, with mucous flocculi; has been suffering from this complaint for some years, and was treated in various ways. Tonics, diluents, resins, baths, anodynes, &c., were tried without effect. Complains of no decided leucorrhœa, but on strict inquiry a very trifling mucopurulent discharge is said to have been occasionally observed. A

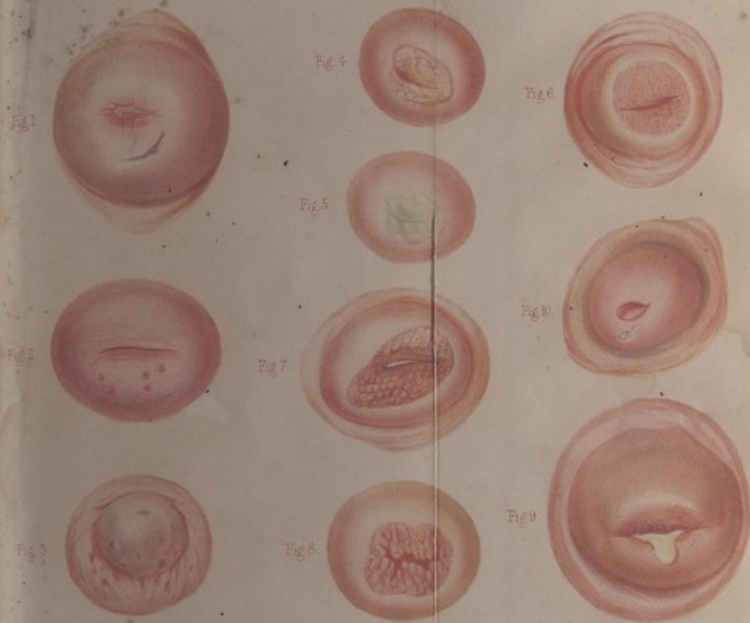
vaginal examination was instituted, and granular ulceration, with engorgement of the anterior lip of the neck, detected; this was treated by scarification, caustics, and astringent lotions; a mild course of mineral acids was administered, and the hot and cold bath persisted in daily; this patient speedily recovered, and has since continued free from this distressing complaint.

Mrs. —, aged 35, married for seven years, but had no family; for five years has suffered almost constantly from pain at the neck of the bladder, and along the whole course of the urethra, with spasmodic contraction of this canal about its upper third; coitus is attended with much suffering; has occasional exacerbations of these attacks, when her sufferings are extreme; some small warty growths were removed from the meatus and interior of the canal, and bougies, as well as caustic applications, were applied. As intense suffering was produced on pressing the posterior part of the body of the uterus, which was rather more tumid than natural, and a fissure, or linear ulcer, surrounding the os to a very slight extent, was detected, the former was remedied by repeated leeching directly to the part, the latter by caustics; an alterative course of mercury was given, followed by mild tonics, when she recovered, and within four months afterwards afforded the best proof of this by becoming pregnant: she carried her child to the full period, was delivered naturally under the care of our friend Dr. Millar, of Londonderry, and the last accounts of her were most satisfactory.

Mrs. —, aged 40, had several children; complains of constant pressure, fulness, and pain in the region of the rectum, some way within the anus; with dragging sensations in the loins, great straining at stool, and difficulty in relieving the bowels, although not naturally costive; the motion of a carriage is most distressing, and her suffering from taking purgative medicine is extreme: she describes this as being lessened after the contents of the bowels pass a certain point. A careful examination of the gut can detect no disease whatever; but the

would eventually disappear altogether, and not return until about the same hour the next day. She was in about the fourth month of pregnancy, and a copious muco-purulent discharge, with occasional hæmorrhagic tint, escaped from the vagina. On examination a very extensive aggravated granular ulcer of a serofulous character, and which bled freely on the slightest touch, was perceptible, the lips and neck were tumid and everted, and the ulcer occupied the interior of the neck, as well as spread extensively over both lips. The stick caustic was freely applied, but its application was attended with marked exacerbations of pain, and with some discharge of blood; astringent lotions, alumn, lead, and copper, were thrown up; and the caustic was repeated. The ulcer took on a healthy action, and her general health and appearance improved. The pain, however, after becoming less severe, again recurred in all its fierceness. Every medicine that experience had recommended in these cases was had recourse to, and the assistance of some of the ablest of our practitioners was obtained. Change of air and regimen, bathing, tonics, bark, iron, arsenic, applications of all descriptions, stimulating and soothing, opium in every form, were tried; morphine was inserted, veratrine used; arnica, and Indian hemp tried; and at length, under the apprehension that organic disease was invading the intestines, which appeared to be the seat of the pain, an issue was inserted, and even morphine allowed to absorb through it, to endeavour to afford relief to her agony; but all failed. The pain returned, not so regularly periodic, but it returned; and, at length, both patient and physician were worn out with this distressing malady and its unavailing treatment. She returned, in despair of obtaining relief, to the country, had a premature confinement, the disease gradually wore away, and the last reports of her were, that she is free from pain, and has been so for months, and is, in fact, as well as before this illness. Here the pregnancy, as much as the ulcer, seemed the source of irritation.

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The general ill health which most commonly occurs as symptomatic of these uterine affections, is better understood than expressed by those familiar with it. The patient, without any assignable cause, gets out of health, her appetite is indifferent, bowels torpid, skin dry and discoloured, she loses flesh, wants her usual elasticity, becomes languid, easily fatigued, and incapable of exertion, and all this may occur without any one symptom to draw attention to the uterine functions; at most, perhaps, a slight blenorragia when the menses are on the wane, or ushering them in; the periodic discharge is a little in excess, or she suffers from the presence of occasional lumbar, sacral, or inguinal pain.

Attention is then directed elsewhere, and the stomach, liver, or, perhaps, spleen, is engaged with; blue pill, bitters, alteratives, and tonics tried in succession with equal ill success; and the patient and doctor withdraw from the contest, mutually dissatisfied with the result. The fact is, the "sedes malorum" has escaped detection, and it remains for the patient to resign herself to her fate, supporting, in addition to her ill-health, the character of a hypochondriac in the estimation of her unsympathising friends. All these symptoms may be ascribable to one or other of those lesions of the uterus to which we have already adverted, and until this be removed the patient's health cannot be re-established. It seems unaccountable how so trifling a variation from the healthy state, as we frequently observe, can produce such serious inconvenience to the constitutional health; we cannot at this moment satisfy ourselves why it should be so, but must rest satisfied by simply stating, "so it is."

ART. VI.—*On the Efficacy of Electricity, Galvanism, Electro-Magnetism, and Magneto-Electricity, in the Cure of Disease; and on the best Methods of Application.* By M. DONOVAN, formerly Professor of Chemistry to Apothecaries' Hall.

(Continued from page 414 of *Journal for November*.)

I HAVE now to bring under observation the medical experience which practitioners have had of the agent concerned in galvanic, electro-magnetic, and magneto-electric phenomena. This agent is generally believed to be the same as that called into action by the ordinary electric machine; the question is one of great difficulty, but, fortunately, is not connected with the subject of our present inquiry.

Dr. Bardsley preferred galvanism to electricity. He says that, judiciously applied, it is a safe and powerful remedy in most paralytic diseases. He conceives that galvanism agrees with electricity in its sensible effects upon the body, for, like the latter, it increases the action of the arterial system, excites heat, causes strong muscular contractions, and even blisters on the skin; and produces, when too powerfully administered, sickness and faintings. When the brain is required to form part of the circuit, the galvanic influence ought to be very cautiously administered: five plates, of two inches and a quarter square, will, he thinks, in general, prove sufficiently powerful at first; and even this number ought to be diminished if violent pain and vertigo, tremors, or convulsive sobs and tears, should be occasioned by the operation. When both sensibility and irritability are greatly exhausted, it may be necessary to excoriate the skin by blisters previously to the application of the wires (a).

Voltaic electricity is generally conceived to have this advantage over common electricity, that the former acts more

THE

ACCOUNT OF

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CASE OF UTERINE HYDATIDS

BY

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The subjoined particulars assure us that however much the practical Physician or Surgeon may be inclined to refer to authority he be step out of the beaten-track yet that unless he, occasionally, think and act for himself—and upon his own responsibility—the well being, even the life of his patient, will prove the penalty of his indecision of purpose.

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(a) Edinb. Med. and Surg. Journ., vol. iv. p. 94.

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The case of uterine hydatids herein reported, with remarks, is one which from its many peculiar and striking features must be considered well worthy of record: I believe the annals of medicine no where furnish an instance of this kind, presenting symptoms so remarkable, or suggestive of the artificial means of treatment, which were so successfully adopted. Although Hydatids "in utero" are occasionally met with and accurately described *hoc*, yet does the experience of the most eminent Physicians and Surgeons in Europe and elsewhere, and not less the writings of those practitioners most famous for their success in the treatment of female disorders, no where furnish the profession with facts having the least affinity to those here detailed, either in so far as the symptoms or treatment are concerned.

The subjoined particulars assure us that however much the practical Physician or Surgeon may be inclined to refer to authority ere he step out of the beaten-track yet that unless he, occasionally, think and act for himself—and upon his own responsibility—the well being, even the life of his patient, will prove the penalty of his indecision of purpose.

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The case of chronic hydatids of the liver, which was reported in the *Indian Register of Medical Science*, is here presented in a more complete and accurate form than it appeared in the original. The contents of the succeeding pages originally appeared in the *Indian Register of Medical Science*. They are herein more completely arranged—that is put into better order—or so intended.

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Case of Hydatids of the Womb

Mrs. T. aged (about) 24, a lady of sanguineous temperament and usually in the enjoyment of excellent health, and very recently married, required my professional attendance in November 1847, in consequence of her suffering more than ordinarily from the "phenomena and diseases of uterestation." On visiting her she complained very seriously of nausea and vomiting, which she described as almost constant and attended with great pain. At this time she had been indisposed some 10 or 12 days. The state of the bowels was unsatisfactory, being on the whole uncertain, but inclined to be constipated. The tongue was slightly furred and yellow, and there was some disagreeable taste in the mouth, and particularly so in the morning. Mrs. T. had latterly habituated herself to a free and generous living, which added to sedentary habits it is more than likely predisposed her in an especial manner to become affected as she did. I prescribed a dose of common aperient pills, composed of Hydr. Sub. c. Pulv. Rham. and Ext. Coloc. to be taken occasionally, and repeated according to circumstances, to regulate the bowels and improve the alvine secretions; and a mixture of Acid Hydrocyan. in Camphor mixture, to relieve the vomiting. The effect of the pills was highly satisfactory, the tongue became much cleaner, and the bowels more regular; but the nausea and vomiting continued unabated. Effracting saline draughts sometimes with, and at other times without, Tr. Opi were tried; but with not the least benefit. Leeches were applied to the epigastrium, and were thought to afford some relief to the pain; these were succeeded by blisters; and morphia was sprinkled on the denuded cutis, but with no real benefit. A solution of opium was also used and frequently repeated. The formula recommended by, I think, Dr. Waller, consisting of Fil. Hydr. Ext. Hyocyami and P. Opi, added one to the previous failures; as did also Crocothe. Finding all things alike useless, and that the vomiting continued as urgent as it had ever been; so much so as to cause the immediate ejection of every thing of whatever kind, whether solid or fluid, from the stomach, I was compelled to content myself with merely regulating the bowels with enemata of salt and water, and supporting the *vis vite* by injections of strong beef-tea, chicken soup, and the like; and to which brandy was now and then added to stimulate the powers of life, and to relieve impending syncope. Opium, in some form or the other, being at the same time employed to relieve pain and procure sleep.

At the expiration of a week the vomiting and pain had

Time passed on, and each succeeding day found my patient worse,—she became more and more debilitated, the pulse was hurried and feeble, and the countenance sunken and anxious; and to all this was added epigastric pain, sleeplessness, and occasional incoherence of speech, (delirium.)

Before matters had proceeded to this extreme length, I advised that premature labour should be allowed to be induced, but in vain; and in this view of the case I was supported by my friend, Surgeon Stewart, of the Ceylon Rifle Regiment. However, this necessary, and truly indispensable operation was delayed, at the solicitation of the patient and her husband, in order to try the effect of another mode of treatment, suggested by a third party; and which consisted in the free application of the ergot of rye, to the os uteri and parts adjacent; together with its internal administration, in the form of pills. I should have mentioned above that the local application of *morphia* to the os uteri was employed, but to no good purpose.

The induction of premature labour being at length decided on, I dilated the os uteri with a large-sized male catheter, and repeated the dilatation after about 40 hours; slight uterine pains succeeded the second introduction of the instrument, and the decoction of the ergot of rye was then given to accelerate them; but it was scarcely at all retained by the stomach. Nevertheless the action of the uterus continued; and terminated in a day and a half in a sudden and alarming expulsion of "waters," mixed with "coagula," so at least I was informed. The effect of this on the constitutional powers generally, and on the stomach in particular, was truly remarkable; the good effects were as immediate, as they were permanent. A few hours had scarcely passed by, ere the countenance had assumed a comparatively healthy appearance, the pulse became slower and stronger, and the stomach not only retained its contents, but the appetite was restored. Each succeeding day found my patient improved and improving. She gained health and strength; and every thing seemed to promise a speedy recovery. The lochial discharge gradually diminished; and in due time, altogether ceased. No indication of the pregnant state remained.

Although the carelessness of the attendants was the cause of my never seeing whatever passed from the uterus, yet did I not then hesitate to conclude, *et cetera* now under all the circumstances of the case that the ovum or a portion of it, escaped with the said "waters" and "coagula."

Change of air and a tonic regimen were considered alone necessary to the complete restoration of the health.

The sequel proves the reverse. On the 18th or 19th day after the escape of the uterine contents, as above described, my attention was called to the state of the uterus; which my patient declared had somewhat increased, rather than diminished, in size, within the past few days. I was informed also that the character of the vaginal discharge had much altered, and that it then presented a sanguineous appearance. An examination verified both of these statements.

I gave it as my opinion that most probably some portion of the ovum had been retained.

On my next visit, after three days, I found all the symptoms much aggravated; the size of the uterus had, very evidently, much increased. Mrs. T. complained of a painful sense of distension of the organ, as if it were about to "burst," and told me, moreover, that she was losing the use of her fingers, the extremities of which had become insensible to feeling.

The voice was reduced to a mere whisper; and the act of deglutition was performed with some difficulty.

Feeling assured that all the symptoms were dependent on the abnormal condition of the womb, and the presence within it of some irritating foreign body, the nature of which I could do little more than conjecture, and believing that the persistence of this foreign body, whatever it may be, within the uterus, would progressively destroy the various powers of life, and so kill my patient—I gave it as my conviction, that the only course to pursue, at all likely to be of any real and permanent benefit, was that one calculated to rid the womb of its contents; in fact to repeat the operation before resorted to, viz. the dilatation of the os uteri.

A consultation was held, and my advice was overruled.

A week had hardly elapsed ere the case became so alarming, and all its symptoms so much aggravated that further delay would have been only criminal. The uterine tumor had risen, by this time, to the umbilicus, and was exquisitely tender. The extremities, hands and feet, arms and legs, from the elbows and knees downwards, were completely paralyzed; not a single fibre in any one muscle could be called into action—the extensors and flexors of both the thigh and upper arm were almost powerless. The nerves of sensation, although not absolutely paralyzed, were much affected; the extremities *felt* for the most part, inflated and stiffened; and now and then pricking pains were experienced in different parts of the limbs.

Both respiration and deglutition were much impaired; in consequence, doubtless, of the abstraction of nervous power from the muscles concerned in these respective acts.

Mrs. T. was now removed to her home, in order to avoid the inconveniences and delays of being so far from the town.

The dilatation of the os uteri was performed on two different occasions; and then expulsive pains came on; and, after continuing very regularly for two or three and twenty hours, terminated in the evacuation of a large quantity of *hydatids*.

I was now led to hope that the parts affected would, in the course of time, re-acquire their normal condition; nor did the progress of the case, immediately succeeding to the escape of the *hydatids*, do else than encourage so much; for thirty hours had scarcely elapsed ere the act of deglutition was unattended with the slightest difficulty, or inconvenience.

It is worthy of remark that from the third to about the 10th day the lochial secretion was continued.

At the expiration of a week the extensor and flexor muscles

of the thigh and upper arm had regained considerable power; nor were the flexors and extensors of the forearm altogether useless. The distal extremities were capable of being raised and moved. The lower extremities, although improved, and their motive power sensibly increasing, yet did they not at this time keep pace with the upper. The nerves of sensation everywhere appeared recovering their natural tone, the sense of touch was described as returning to its original and healthy state; at the same time, the slightest degree of pressure along the course of the radial and ulnar nerves, in either arm, caused much uneasiness and pain.

Mrs. T.'s general health was much improved and improving. A tonic regimen was pursued with apparent advantage.

On the 16th day, from the escape of the hydatids, she was removed from her home to a more desirable locality; and quickly afterwards the voice began to resume its original character—it lost the faint whisper which before characterized it.

At first the patient whispered, but before long he began to talk. In order to get the spinal system into action, I now employed *galvanism*: repeated shocks were given along the cord and extremities, and active friction of the parts affected was recommended. Stimulating liniments were also applied. This treatment was directly followed by an extreme excitement, which was accompanied by a profuse perspiration, and the patient was much affected. Successive hours were passed in a kind of delirious excitement, and in an involuntary jeritation of the muscular system; and particularly of the lower extremities: the latter was commonly accompanied by acute neuragic pains. It is worthy of remark that the patient was scarcely, if at all, affected by this peculiar and painful chorea.

In this peculiar and painful *Chorea*, the patient was treated with quinine, and in its state of delirium, particularly morphia, were prescribed, with the view of allaying the irritation of the brain and spinal cord; for there were no indications for any thing like vascular repletion,—far from it. The morphia was given in the form of a solution, and the quinine in its state of the *prime vin*, and the carb. ferri with quinine were internally administered. The effects of this altered treatment were every way satisfactory, inasmuch as all cerebral excitement and morphia delirium were removed, and the patient was able to perform painful and involuntary muscular action, was duly controlled, the tongue became clearer and yet more healthy looking than before, the appetite improved, and the bowels were preserved in a proper

The constitutional powers also appeared strengthened; but nevertheless much remained to be done towards the complete recovery of the pivotal functions of the extrinsic muscles, for although the *pharynx* and *extension* of both the upper and forearm, and pronation and supination were now little short of perfect, yet the deeply seated muscles of the forearm, those attached to the phalanges, the flexors and extensors of the fingers, and those belonging to the thumbs, were capable, only, of very slight movements; and similarly of those of the lower extremities, and particularly so of those muscles attached to the inferior phalanges.

Such was the condition of my patient in the fifth week after the escape of the hydatid mass from the uterus—and at this time I advised her to proceed to *Nuova Italia* in the hope that a change of air and scene may be beneficial; nor was I disappointed. On her return to Colombo (after an absence of two months) in May, both the hands and feet were somewhat less affected than they had been previously.

In the hope of facilitating the recovery of the deeply paralyzed muscles of the arm and leg, viz. those attached to the phalanges, superior and inferior, and all of which were at this time in so paralyzed a condition as to render the hands and feet not much more than useless, I proposed to Mrs. T. that she should allow me to *mesmerize* her. I did so, and with but little trouble. On several occasions—in the presence of my friends, Mr. G. and Mr. G.—the arms were raised directly she became insensible—comatose—the arms were raised involuntarily, and without the patient's knowledge, high above the head, and those parts hitherto all but powerless were then endowed with motion—e.g. the fingers now and then jerked out like an inanimate body when surcharged with electric fluid. The hands, which for a period of about three months had seemed dead, were now so pliant and supple that the wrist than anything else falling; here and there as the motions of the fore-arm directed, were brought or rather thrown into a straight line with the other, the inferior parts of the member. This state of things always lasted about 20- or 25 minutes, when it was terminated by a kind of hysterical paroxysm; on the subsidence of which consciousness would reappear, and the patient would be found in her usual condition. However, directly on the employment of animal magnetism, the recovery of the hands and feet progressed rapidly, and at this time (December) Mrs. T. is to use her own words: "*quite well*," "*as well as ever*." When pressed closely she admits that one ankle is "*a little weak*;" and that she finds when exerting a difficult piece of music, the "*right leg*" is "*very imperfect*." The general state is now, as it has long been, perfect.

The following letter contains Mrs. T.'s own opinion of the benefits she has received from mesmerism.

August 4th 1848.

DEAR DR. DAVY,

3. Your letter of the 29th of July, I received a few days ago, and, amidst my other engagements, I wrote to express to you my opinion as to the effect ~~substitution~~ had on my limbs. I have derived great benefit from it; for I had not the least power in my wrists before; substitution was resorted to. I think you misremembered me altogether (four times, and the last time was on a Sunday. I left Colombo for Galle the following day, and it was in the coach, on my way, there, I first observed I could neatly slide my wrists. In about a week I entirely got the use of them; and since then

my hands have continued to strengthen daily. Within three weeks of the time you first mesmerised me I was able to write my hazy account; and soon afterwards little notes to my friends—and to yourself among the rest. I can now also walk about the house quite alone, but still have a little difficulty in getting up from my chair. I am in the best health; and this note will be, alone, sufficient to show you the improvement which has taken place in my hands since I last wrote to you.

(Signed) B. M. J. T. 1844.

The many points of interest to the pathologist, in the above case, may be supposed to render some remarks on it both necessary and instructive. The first thing which arrests the attention of the medical enquirer is the morbid sympathy of the stomach with the uterus. This circumstance is, of itself, by no means unusual, but on the other hand is one so common to the pregnant state, that it fails almost to attract any kind of notice; however, the excited and irritable state of the stomach which so generally accompanies utero-gestation affords us a highly interesting illustration of that close and indissoluble bond of union and mutual dependence existing between the several parts of the animal organism; and which must be viewed, only, as the effect of the anatomical arrangement of the great sympathetic nerve; connecting as it does the several viscera of all animated tribes, into one beautiful and harmonious whole; the sum total of their several functions resulting in the life of the individual; to whatever genus or species he may claim affinity.

In the person of Mrs. T. this "morbid sympathy" between the stomach and uterus, reached a climax not oftentimes observed; and however much meddlesome surgery of all kinds is to be proscribed; yet is it certain, that to have allowed my patient, under the circumstances explained, to have gone on without an attempt being made to destroy the ovum, and to effect the evacuation of the uterus contents, would have constituted, to my mind, an omission not less fatal to my own professional reputation than to my patient; that she would have died, had the proceeding I adopted been neglected, is, of all things, undeniable.

It is seen by the history of this case, hereto prefixed, that the immediate effects of the first dilatation of the os uteri, performed with the view of inducing premature labour, were in the highest degree beneficial; but inasmuch as the sickness, including, also, the usual signs of the pregnant state, became succeeded by other and dissimilar symptoms of the most distressing and dangerous tendency, and which were plainly referrible to, and caused by, the

growth and presence of the hydatid mass (in utero) it is plainly to be inferred that the uterine action so induced, caused only the rupture of the ovum, and the consequent escape of the fetus, the former remaining attached to the parietes of the womb; and to this circumstance is doubtless, to be attributed the first formation of the hydatid mass.

Dr. Wm. Kerr author of the article Hydatids in the Cyclo-pædia of practical medicine, writes thus—"Hydatids of the uterus when arising from the destruction of the ovum are preceded by the symptoms of pregnancy common to the period before this change takes place; and the time when it happens is marked by the breasts becoming flaccid, and the sickness and symptomatic effects of pregnancy going off." Dr. JAMES BLUNDELL gives a precisely similar opinion—and assures us that although the ovum, deprived of the fetus, remains attached to the uterus, yet will all the symptoms of pregnancy cease on the interruption of utero-gestation.

That the remains of a blighted ovum is, in itself, a sufficient cause for the formation of Hydatids in utero is, to my mind, certain; but in order to render my position the more palatable to the reader I would refer him to the subjoined authorities, viz: Good in his study of Medicine asserts on the authority of Hewson and Hunter that "the most common cause of uterine hydatids is the result of a miscarriage." Mad Boivin's work "on the uterus" contains these words "If the ovum remains attached to the uterus, deprived of the fetus, apprehending the blood destined for a fetus, it will probably acquire a considerable volume and capacity, and hence the varieties of moles &c." In Dr. Taylor's volume on "Medical Jurisprudence" we read under the head of "moles and hydatids." "When the mass is expelled it is found to consist of a group of vesicles or cysts of various sizes; but when this disease follows intercourse the cysts are found mixed up with the remains of a blighted ovum, or a coagulum of blood; and such is the only description which applies to the hydatid mass expelled in the case I have here considering."

The observations immediately preceding are intended in no small degree to meet the many objections offered to my diagnosis and the criticisms thereon; but critics cannot be expected always, to be impartial.

The remarkable feature of this case consists in the symptoms which accompanied the formation and growth of the hydatids. I do not think it has a parallel in clinical medicine; no where can I find mention made of a similar form of disease. Those instances of uterine hydatids mentioned by Denman, Gooch, Ryan, Boivin, Ashwell, and other writers in this department of medical science, all belong to a more common order of things; but to estimate rightly the merits of the case, and its title to the originality I claim for it, constituting as it does a rare and singular exception to a general rule, I will here quote in succession from among the most eminent writers on obstetric medicine, the symptoms of Hydatids of the uterus: the comparison of

the rule, in so far as it is set forth in the following extracts, with the exception will, necessarily, prove, or disprove, my position, as above explained.

Observations are wholly wanting as to the particular effects on the human body of the hydatids already described (uterine hydatids) and stated to have been occasionally found in it; but it is probable that this morbid agency must nearly correspond to that of any foreign body situated in the same cavity or structure. During life, unless when they are evacuated either naturally or artificially there appears to be no means of ascertaining that their particular presence is the cause of constitutional disorder. Hydatids "of themselves do not appear to produce any peculiar symptoms." *Kuhn's Cyclop. of Pract. Med.*

"Of hydatids in the uterus, I have met with several instances. The patients had the ordinary symptoms of pregnancy, only with some peculiarity which led them to doubt it, such as the absence of movement in the abdomen, the enlargement of the abdomen being disproportionate to the period of pregnancy, or after advancing rapidly becoming suddenly stationary. In other cases the patient, after supposing herself pregnant, had a discharge sometimes of blood sometimes of water, which led her to suppose that she was miscarrying." *Good.*

"Simulating pregnancy, from molar concretions, assumes in many cases so much of the character of genuine impregnation as to be distinguished with considerable difficulty. In general, however, the abdominal swelling increases in the spurious kind, far more rapidly than in the real, for the first three months; after which it keeps nearly at a stand; the tumour, moreover, is considerably more equable, the breasts are flat and do not participate in the action, and there is no sense of quickening. There is almost always a retention of the menses." *Good.*

"Hydatids and moles in the uterus are generally, for some time attended by the common symptoms of pregnancy; which, however, soon cease or become obscure. Very frequently after the breasts have become flaccid, and the other symptoms of pregnancy have disappeared, the uterine tumour remains, in the case of hydatids, being attended with occasional discharges of water; and, in the case of moles, with discharges of blood. Of course, there are no movements of a child; and the size of the uterus does not correspond to the ordinary bulk of that organ at the same period of pregnancy."

"In almost every instance in which either hydatids or moles have existed, the general health has been deranged, and the condition of the uterus has been unhealthy." *Good.*

"The symptoms accompanying uterine hydatids, strongly resemble those of pregnancy." *Hayle.*

"If, with the foregoing we contrast the symptoms from which Mrs. T. suffered, their great dissimilitude and peculiarity become self-evident. These were a painful sense of distension of the uterus

as if it were about to burst, aphonia or loss of voice, difficult and painful deglutition, complete paralysis of both the superior and inferior extremities, hands and feet, arms and legs, from the elbows and knees downwards, and very impaired motion and sensation of the thighs and upper arms, and lastly, a laborious and oppressed respiration, which gave the sensation of impending suffocation to all this was added a considerable emaciation, and a countenance expressive of the extreme distress. The injected state of the capillary vessels, more especially those of the extremities and superior parts of the body, imparted a peculiar leadenish hue to them."

The above facts most certainly contradict, and in the clearest possible manner, the assertion made by Hunter that the prejudicial effects of hydatids are to be ascribed to mere "mechanical pressure," for the size of the uterus in my patient utterly precluded the possibility of such having been the case; and also that attributed to Dr. Denman, viz., "the symptoms of uterine hydatids are not alarming, though troublesome."

The very peculiar and dangerous nature of the symptoms necessarily forbids the adoption of that treatment so generally recommended and practised; and there can be no doubt that had I been content to do only what is laid down in books, and authorized by name and precedent that Mrs. T. would have long since died, instead of living, as she is now, in the enjoyment of health and prosperity. The treatment advised, generally, in cases of Hydatids *in utero* is exceedingly simple, because the effects of the disease are, more frequently than otherwise, few and unimportant. Dr. Kerr above quoted says, "the treatment is to be directed on general principles to the relief of sympathetic disorder; and to the maintenance, as far as possible, of the due functions of the abdominal viscera." *Compston* recommends that the general health be looked to, and appropriate treatment adopted. "The state of the uterus," he adds, "will be improved by abstinence from sexual excitement by cold bathing, and other means which invigorate the system." The advice of Sir C. M. Clarke and of Blundell is much the same—the former adds "the patient is to be informed of the nature, and the result is to be, patient-ly, waited for."

But one exception to this kind of treatment has, up to the present time, been anticipated, e.g. Blundell advises that in case of a great eruption of blood, should occur, the hydatids should be extracted per vaginam, and so also do Drs. Denman and Waller. Doubtless on the occurrence of profuse and alarming uterine hemorrhage, caused by the presence of hydatids, nothing short of it could be relied on; now, although the extreme danger of my patient was in no way the consequence of hemorrhage yet were the symptoms not one jot less frightful and alarming than those arising from a profuse loss of blood; and therefore do I justify the plan of treatment I pursued. The expediency even safety of the plan I adopted to bring about the evacuation of the uterine contents, viz. the addition of the os Uteri, is well shown, not only in the ultimate recovery of my patient, but also by the immediate effects of the operation, on the uterus.

It is a fact well worthy to be remembered that the expulsion of the hydatid mass was commenced, continued, and completed, not only without anything like *hemorrhage*, but without any kind of manual interference; a circumstance it would appear of rare occurrence—for say a Dr. C. M. Clarke in his observations on the diseases of females, "when the period arrives at which the uterus is excited by distension to unload itself of its contents, then all the skill and energy of the Medical Attendant will be wanting; and all his efforts will be called forth to controul the hemorrhage, and to sustain the powers of the constitution"—but, in my case no "skill" nor "energy" were required; the action of the uterus was in itself sufficient for every purpose; assisted as it was by occasional doses of the Ergot of Rye.

I cannot but conclude that in all cases where it can be satisfactorily made out that the uterus contains hydatids, although the symptoms indicating their presence may be in no way dangerous but only troublesome, that instead of waiting, it may be for many months "for the result," that is, their expulsion from the uterus by the spontaneous excitation of that organ—it would be far preferable, more convenient, and less dangerous to the patient's safety, to excite the necessary uterine action by the introduction of a full sized bougie into its mouth; and so accomplish in 10 or 20 hours what might be delayed as many weeks, or perhaps as many months: for nothing can be more erroneous than to suppose, that the uterus never carries foreign substances, as blighted fetuses, hydatids &c. beyond the ninth month. The late Dr. Ryan has recorded a case in which hydatids were retained in utero so long as 14 years. In 1833 I attended a poor woman whom I delivered of two blighted fetuses, which had been long retained in the uterus, probably nearly two years: the accounts given to me were, as may be expected, vague and unsatisfactory, as distant letters all

made of hydatids. In this case the uterus was found to contain two blighted fetuses, and a large mass of hydatids, which I removed by the use of the bougie.

POSTSCRIPT.

That the presence of the hydatid mass in utero was the cause of the paralytic condition of the motor and sentient nerves, as well as that of the respiratory nerves, and of those presiding over the motions of the larynx and oesophagus (see case) cannot be doubted, seeing that the impaired motive powers and sensation, including the impeded respiration, the loss of voice, and the difficult deglutition, commenced with the uterine enlargement and kept pace with it; moreover these several abnormal phenomena were almost directly relieved on the evacuation of the hydatid mass.

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ON A SUCTION-TRACTOR;

OR NEW MECHANICAL POWER AS A SUBSTITUTE FOR THE
FORCEPS IN TEDIOUS LABOURS.¹

Cases ever and anon occur of morbid protraction and delay in the second stage of labour, with the head of the child sunk down into the pelvic cavity, or resting upon the perineum; with the caput succedaneum enlarging more and more under the pressure and prolonged uterine contractions, and yet these contractions producing little or no effect upon the actual advancement of the infant; and with local and general symptoms threatening to supervene, and showing the propriety, if not the necessity, of the patient being relieved, and delivery being completed.

In such tedious and trying cases, if there were space for us to pass our hands between the soft parts and head, so as to seize with them and drag upon the head, we could curtail the patient's sufferings. There is not room for this. Our hands are too thick for the purpose. As a substitute, accoucheurs under such circumstances introduce a thin metallic hand (so to speak) on each side of the child's head,—viz., the forceps—which exactly, like a couple of slender hands, take hold of the head, and enable us to apply, when necessary, extractive force to it. One objection which had been often urged against the use of the forceps (though it was an objection against their abuse rather than their use) was this, that the instrument, in being introduced between the maternal passages and head, was apt to injure these passages, and to contuse and even lacerate them during their working; that they were thus liable to inflict local damage on the mother at the very same time that they shortened the term of her sufferings and saved her infant.

Is there any other mechanical power which it is possible for us to apply to the infant's head in order to seize and move it forward, which would not be liable to the same objection of danger to the mother?

In such tedious cases as seem to require the use of the short forceps, the idea has perhaps crossed the minds of most accoucheurs, that if they could get hold of the *exposed* portion of the scalp of the child, or of the skin forming the caput succedaneum, and could possibly pull by *this* hold, they might thus expedite the process of delivery, and abridge the sufferings of their patients. The spherical form of the infant's head, and the intimate mode in which the scalp is spread over the arch of the cranium, prevent the possibility of taking any such hold by the fingers alone. By means of a small suctional disc, the shell of

¹ Extracted from the Proceedings of the Edinburgh Obstetric Society for 20th December 1848. *Monthly Journal of Medical Science*, February, 1849.

the patella or limpet (which is so common upon our shores) fixes itself with great force to the stones or rocks in which it is placed. Dibranchiate cephalopods—as the common cuttle-fish—fix their arms, by similar suckorial discs, so firmly to different surfaces, that their arms themselves will often tear before the suckers with which they are attached will give way. If we could fix upon the exposed portion of the fetal scalp the suckorial disc of a limpet or cuttle-fish with the usual force with which they adhere to the sea rocks, &c., to which they are attached, we would have, in many cases, a power sufficient to enable us to apply by them the necessary amount of extractive force. The discs of the limpet and of the cuttle-fish attach themselves firmly to the surfaces to which they adhere, by being formed so as to act upon the principle of the common sucker used by the schoolboy to lift stones, &c.—viz., by removing, or rarifying as far as possible, the air placed between the attaching and attached body, and thus taking advantage of the great power exercised by pressure of the atmosphere upon the surfaces of solids. This pressure is, as is well known to all, equal to nearly fifteen pounds upon the square inch when the subjacent vacuum is perfect; or, in other words, it would require a force equal to fifteen pounds of every square inch attached, to effect the separation of surfaces thus united. The limpet and cuttle-fish have the surface of the acetabula or discs with which they fix themselves so strongly upon the rocks, bedewed with a thick mucous secretion; after placing the surface of the disc upon the part to which they are to attach themselves, they, by a muscular movement, raise the centre of the disc so as to produce a more or less perfect vacuum; and the cuttle-fish has a central body in the middle of each disc, which it draws up and uses for this purpose, exactly on the principle of the piston of a syringe.

Such an arrangement and apparatus may be imitated by art; and when rendered more perfect and complete, may perhaps give us a simpler and safer obstetric power for some cases than even the forceps. In one protracted case which Dr Simpson described, he had lately made use of this power to extract the child. When applied, the head was still high up in the pelvic cavity, and the instrument easily afforded such a hold of the head as to allow it to be slowly dragged forwards and extracted. During this extraction the instrument required to be resplined once or twice. Dr Duncan and Mr Dickson were present at the delivery.

The instrument used in this case was very rude and imperfect. It consisted of a common metallic vaginal speculum, fitted with a piston, and with the edge of the trumpet-shaped concave disc at its outer or broader end covered with leather. This broader and leathered end was coated with lard, and applied to the head of the child; and then an exhausting effect produced by moving the piston forwards. The apparatus would admit of much improvement and simplification, as by the mouth of it being made expansible, and capable of altering in shape, instead of metallic and fixed; by the inner edge of it being coated, as in atmospheric railways, by a thin layer or cushion of air inclosed in caoutchouc; by the exhausting apparatus being valved and more perfect, &c. &c.¹ But if the Air-tractor could not be made both simple and satisfactory in its application, it would not replace the forceps; and more experience would be required to decide whether it had any title to do so.

If the instrument, when properly constructed, should be found to succeed, it would be still more advantageous in replacing the long, than in replacing the

¹ Since the preceding abstract was drawn up, I have made a great variety of experiments, with the view of ascertaining the best form of disc or mouthpiece and exhaustor. I find that a syringe and piston, valved like the common breast-pump, so as to make a pretty perfect vacuum, and having a disc attached to it formed of a double cup, the outer cup of caoutchouc, and overlapping considerably the edges of an inner and smaller cup of metal or gutta-percha, makes an Air-tractor possessed apparently of the necessary applicability, and requisite adhesive and extractive power.

—J. Y. S.

short forceps. In the case in which it was used, the head was of the height in which long forceps are usually required. If a suckorial Tractor should answer in some long forceps cases, and enable us to drag with sufficient force upon the exposed portion of the scalp, it would save the danger dreaded by many, of wounding the uterus by introducing and working the blades of so long an instrument as the long forceps high up in the neck and cavity of the uterus itself.

Presentations of the breech sometimes require instrumental assistance. The hook passed over the flexure of the thigh is dangerous, and very apt to injure. The forceps, as recommended in these presentations by some authorities, are often inapplicable and inefficient. Perhaps the Air-tractor may afford us a new and sufficient instrumental force for the management of some of these cases. Its use would be simpler and safer than any of the other methods proposed.

Dr Simpson further observed, that he was not aware that any one had applied practically this obstetric means before it was employed in the case detailed to the Society. But the idea of using such a power had been long ago proposed by a gentleman, for whose works and talents they all entertained the utmost respect, Dr Arnott of London. In his admirable work on Physics (p. 636), Dr Arnott alludes to the subject in the following words:—"The forceps (says he) to be well and safely used, requires address, which even the naturally dexterous man cannot possess without a certain degree of continued practical familiarity with it; and, except in large towns, a man must be unfortunate in his practice who often requires it; hence the really small number of persons who use it well. A tractor of three inches in diameter would act upon any body, to lift or draw it, with a force of about a hundred pounds—with more, therefore, than is ever required or allowable in obstetric practice. In lifting a stone, the tractor does not act as if it were glued or nailed to the stone, but merely bears or takes off the atmospheric pressure from one part, and allows the pressure on the opposite side, not then counterbalanced, to push the stone in the direction of the tractor; so when placed upon the child's head, it would not pull by the skin, in the manner of a very strong adhesive plaster applied there, as uninformed persons would be apt to suppose; but by taking off a certain atmospheric pressure from the part of the head on which it rested, it would allow the pressure on the other side or behind to urge the head forward on its way. Of course the pressure in such a case would not operate on the head directly, but through the intervening parietes and contents of the abdomen. It would be preferable to have a gentle and diffused action of the tractor over a large space, rather than an intense action on a small space, and therefore a tractor for the purpose now contemplated should not be very small, and should have a little air underneath it in a slight depression or cavity at its centre. The forceps must be more effective than the tractor for rectifying malposition of the head, and diminishing its transverse diameter; but the tractor will answer both these purposes in a greater degree than might at first be expected."

Several of the old surgeons, as Paré, Paww, Hildanus, Scultetus, &c., have described and figured suckers, or tractors, as applied to the head with the object of removing depressions of the cranium in children.

ON THE AIR-TRACTOR, AS A SUBSTITUTE FOR THE MIDWIFERY FORCEPS.¹

If the opposed and adapted surfaces of two bodies have the air removed from between them, then the external atmosphere presses these bodies together, and consequently keeps them united with a force equal to about 15 lbs. upon each square inch. A round disc of two inches in diameter, would thus (if the exhaustion of the air were complete) adhere to any proper surface to which it was adapted with a force of 47 lbs.; or, in other words, it would require a power of traction equal to a weight of 47 lbs. to separate it from the surface to which it was attached. A round disc of two and a half inches would adhere with a power amounting to 75 lbs.; a disc of three inches, with a power amounting to 105 lbs.; and one of three inches and a half would sustain a dragging force of 143 lbs. before it separated.

In physiology, more especially in comparative physiology, nature frequently employs this power of atmospheric pressure for the purposes of prehension, locomotion, adhesion, &c. She has provided, in other words, various animals with suckers or organs by which they are enabled to create a more or less perfect vacuum between the surface of these suckers, or cotyledons, and any body or surface on which these suckers rest, so as to produce a pressure of the atmosphere on the external surface of the suction organ, and thus cause it to adhere firmly to the body on which it was placed. The suckers on the head of the *remora*, on the feet of the *gecko*, on the legs of the *dytiscus*, in the mouth and adhering acetabulum of the *distoma*, on the arms of the *talipes* and *octopus*, in the disc of the *patella*, &c. &c., are illustrations of nature taking advantage of the principle of atmospheric pressure for the performance of various physiological functions. The human infant, the common medicinal leech, &c. provide themselves with nourishment by availing themselves of the aid of the same principle.

In surgery, the principle of atmospheric pressure is converted to practical purposes in the operation of cupping; in one mode of fixing artificial teeth, &c.

Several of the older surgeons, from Ambrose Paré downwards, proposed to elevate depressions of the skull, particularly in children, by applying a sucker, or kind of cupping-glass or cupping-horn, over the seat of the depression. Between twenty and thirty years ago, Dr. Neil Arnott of London suggested the possibility of applying the same principle in obstetric surgery.

The power that an Air-tractor of 2½ or 3 inches in diameter, when fixed on the head of the child, should give us, is theoretically as much as is required in most, if not in all cases of tedious labours in which the forceps are at present employed. In trying various experiments upon the power of traction usually employed by the forceps, Dr. S. found it not in general to amount to more than from 25 to 35 lbs. Some practitioners thought the common power of traction used by the short forceps to be below this. In a few rare cases, especially in long forceps operations, and where the obstruction was great, the power employed might rise to 40 or 50 lbs. or more. The experiments upon which these results were founded, were made by traction with forceps fixed upon a Salter's spiral balance, used as a dynamometer.

¹ Extracted from the Proceedings of the Edinburgh Medico-Chirurgical Society for 7th February 1849. *Monthly Journal of Medical Science*, March, 1849.

In attempting to construct a proper obstetric Air-tractor, a great variety of forms had been tried by Dr. Simpson. The form which he found most effectual, consisted of a slender short brass syringe (1½ or 2 inches long) worked by a double-valved piston, like a breast-pump, having attached to its lower extremity a cup of half an inch in depth, and 1½ inch broad at its edge. Over this inner cup was placed a second cup formed of vulcanized caoutchouc, and so deep as to overlap the edge of the inner by six or eight lines. The mouth of the inner cup was covered by a diaphragm of very open brass wire gauze, and over it a piece of thin sponge, flannel, or the like, was placed, with the view of preventing injury to the scalp, and not allowing it to be elongated and drawn up into the vacuum space in the manner which we see occurring with the skin in the common operation of cupping. The parts thus applied to the child's head consisted of caoutchouc and sponge.

Such an instrument, when fixed to the palm of the hand, lifted readily without detachment a weight of 30 or 40 lbs. This Dr. Simpson showed by experiments performed before the Society. An Air-tractor, with a caoutchouc cup of three inches in diameter at its mouth, lifts, when applied to and stretched upon the hand, a weight of 60 or 80 lbs.

The inner cup might be round, oval, &c., and vary in form and size. The outer caoutchouc cup would admit of much further improvement. A double cup of caoutchouc seemed to render the instrument stronger. Of course, with all this, the vacuum, however great, was still always more or less imperfect.

The Air-tractor seemed to possess various advantages over the forceps. It was far less dangerous to the mother, as it was attached to the exposed part only of the scalp of the infant; the forceps were required to be passed high up between the head and maternal passages, and in incautious and inexperienced hands were apt to injure one or both. The materials of the Air-tractor (caoutchouc and sponge) were safer to the mother and child than the material of the forceps (steel). The forceps always took up a certain amount of space between the head and passages; the air-tractor did not. The Air-tractor was greatly less in size, and consequently far more portable. It could be applied with sufficient firmness and power to enable us to rotate the head, or change its position; as from, for example, an occipito-posterior to an occipito-anterior position (the form of rotation most frequently required in practice). It probably could be applied also to change the presentation—which the forceps could not effect—as, for instance, to bring down the occiput, when fixed there, in frontal presentations. Perhaps it may be found as useful, or more so, when the head is at the brim as when it is at the outlet. It may be made so as to fix upon the breech—in cases in which the forceps cannot be very readily or safely used. If found perfectly easy of application, it may enable the accoucheur, by adding a few pounds to the strength of each pain, to bring to a safer and speedier termination cases that would otherwise go on tediously, hour after hour, and in which we would still not choose to use so formidable an instrument as the forceps; for it is to be recollected that the danger of parturition to both mother and child increases in a ratio progressive with its duration. In cases of inertia of the uterus—the most common cases for the short forceps—it will probably be found specially applicable. And in such instances it is surely better to extract the child by a safe force, thus applied *ab anteriori*, than to effect its expulsion by the ergot of rye—which produces its result by forcing the uterus to push and press its parietes with renewed power and violence against the opposing body of the fœtus.

In conclusion, Dr. Simpson stated that he had now used the Air-tractor which he had constructed in several cases of labour, and with results answering his best expectations. "But it doubtless admitted of much further improvement in construction, in mode of application, in working, and other details."

INSTRUCTIONS
TO
MOTHERS AND NURSES
IN THE
LYING-IN CHAMBER.

BY
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PREFACE.

IN making the following observations, I have been actuated by the motive not only of affording some information to nurses intended to benefit the objects of their care, which knowledge it is desirable they should possess, but also of upholding the proper station of the profession to which I have the honour to belong. My little treatise being, however, mainly intended for the use of the first class which I have mentioned—whose acquaintance with medical requirements is generally too limited—it has consequently been divested, as much as possible, of technical terms, which would be unintelligible to such readers. Without assuming that the importance of the following pages is greater than the size of the pamphlet would seem to imply, I am so impressed with the advantages that a consideration of the various subjects it embraces would produce, that I now submit these instructions to the attention of those for whom they have been chiefly penned.

J. C. LORY MARSH, M.D.

NOTTINGHAM, 1861.

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HENRY KENSHAW, 356, STRAND.

1843.

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INSTRUCTIONS TO NURSES.

EVERY woman about to become a mother should secure the services of a legally qualified medical practitioner, as well as an experienced nurse, to attend upon her in the most interesting and trying position in which she can be placed. The qualification possessed by the medical attendant is a guarantee to the public and the patient that he is competent to afford all the assistance that science and art can command. I shall therefore make no farther allusion to his duties, believing that he will always be found equal to the discharge of the important trust reposed in him. In the detail of the duties of the nurse engaged to carry out the instructions of the medical man, I may occasionally run counter to preconceived opinions and prejudices. But I must observe, in extenuation, that the amount of ignorance in this department of the dealings with the mothers of mankind, as well as the great amount of practical experience assumed to belong to that class of women usually met with as *old experienced monthly nurses*, renders it almost impossible to avoid occasionally appearing to oppose their not over enlightened views.

I believe it is a popular error to suppose that

monthly nurses, like port wine, improve with age; or that the fact of a woman having had a *large family* is a criterion that she is therefore more experienced, and better able to attend upon her neighbours than those who have never been so bountifully blessed. So far as a tolerably extensive field for observation has enabled me to form an opinion, the best nurses I have met with have been active, strong, and obliging young women, with hearts, and hands, and heads willing to serve their neighbours as themselves; and the worst class have been old worn-out women, whose energies have been sapped by a large family, and whose misfortunes (not their inclination) have led them to adopt a laborious life as a means of subsistence, because they are unable to obtain a living in any other way, and not because they possess one single quality of mind or body to fit them for such an important post. Inasmuch, then, as attending upon lying-in women is of all occupations one of the most useful a nurse can engage in, it is also by far the most exhausting, the most wearying, and sometimes, physically and mentally, the most trying. I would recommend all nurses to commence this branch of their duties early in life; in fact, they should not exceed 30 years of age when they begin. If not better single than married, at any rate they ought to be unincumbered with the cares of a family. They cannot cultivate too scrupulously habits of cleanliness and neatness in their personal appearance, as well as a kindly and considerate mode of expressing themselves towards

those around them; for in cases of danger, and perhaps with no dear relative near to pour in a word of heavenly comfort, it no doubt gives much more comfort to the patient when all worldly pride is laid aside. I have often felt, when life has been hanging by a thread, and all one's powers of mind and body are taxed to the uttermost, what a relief it would be to be freed from the poor, feeble, gossiping, perhaps dirty, old woman, and replace her with a young active woman, with a warm heart to sympathise, willing hands to assist, and a clear head to carry out the instructions of others. Although single young women are rarely met with in this department of usefulness, I am sure their entrance into it would be acceptable to the medical man, and most beneficial to the patient. Only imagine, for one moment, a woman about to pass through a severe trial, one under which it is of the utmost importance that she should be surrounded by those who are both willing and able to minister to her every want, and not by those whose feebleness is such, that it has often struck me, when meeting them at the bedside, that they came to be *nursed* rather than to nurse!

It may be advanced as a reason, why the duties of the lying-in chamber usually devolve upon the aged, that other and more youthful aspirants have no means of obtaining the necessary instruction and experience to fit them for the discharge of such responsible duties. This, unhappily, is too true; but the remedy is so simple that I cannot think, in this land, abounding

with philanthropy and benevolence, any difficulty would be found in establishing Lying-in Hospitals in every large town, which should also serve the purpose of training institutions for nurses. By promoting such a cause, the more wealthy portion of the population would not only be dispensing untold blessings to their less highly-favoured sisters in sorrow, but, at the same time, be providing for themselves a superior class of nurses, who, in their hour of trial, would repay them back an hundredfold by the skill and devotion with which they would endeavour to assuage their bodily sufferings and pour comfort into their anxious minds. It is only those who mix much with the sick that can learn to appreciate the great difference between a good and a bad nurse; and, under no circumstances, is the contrast more striking than in the lying-in room.

We will presume, then, that a suitable nurse has been obtained (and if she bring a certificate of competency from a Lying-in Training Institution, so much the better)—the patient to have arrived at the full period of pregnancy, and for the first time in her life to be taken in *labour*. She will not require reminding when it has commenced, for it begins and ends with pains more or less severe. Here let me remark, that child-bearing is a natural process, and, although accompanied by the attendant penalty pronounced upon our first parents, still it should never be regarded in the same light as a disease requiring, in every case, human interference; for, unless there be some devi-

ation in nature's work, scarcely any assistance beyond that of nature herself is required to complete delivery. When a patient has been assured by her medical attendant, after he has visited her, that all is right, she must understand that the position of the child is a natural one, that he can see no necessity for interference on his part, and she may at once dismiss from her mind any unnecessary anxiety, and patiently look forward to the completion of her delivery with confidence and hope. The period of the duration of natural labour is very uncertain, but in the case of the first child is usually protracted to 12, 24, or even a greater number of hours; the length of the time usually depending upon the size of the child. Labour may be divided into three stages; the first is accompanied with slight, though often wearying, pains—the second is when the child passes into the birth-passage—and the third is its entrance into the world. The means by which these several stages are accomplished are the muscular contractions of the womb, which contractions are attended with what are known as *labour-pains*. Judging from the evidence of those who have borne children, these pains, during the last stage, are tolerably severe; but here, again, I would remind the patient that their severity is no criterion of danger. As soon as the labour-pains commence, I would recommend the patient to take a dose of castor oil, or some mild aperient, whilst the nurse arranges the bed, which is done by making it in the ordinary way and *guarding* it with a waterproof cover, over which one

or two folded sheets or blankets should be placed. The patient should always be delivered in bed, so that she requires no moving after her confinement. It is the custom of some women to be delivered in their clothes on the outside of the bed; and great is their prejudice against having the stays removed, or themselves placed into bed before the child is born, believing that the stays give support, and that the bed might be damaged. The stays certainly give no more support than a well-applied bandage; and if the bed is properly guarded, it ought not even to be soiled.

The following cases will establish the fact of the great danger of moving women after delivery. I was summoned some years since, in great haste, to see Mrs. S., who, the messenger informed me, as well as she was able in her distracted condition, was dying. Of course there was no time to ask any questions, and I hurried off with all possible speed to the house, which was not many hundred yards from my own, and on my arrival I learnt the following sad history:—Mrs. S. had been delivered, about two hours previously, of her first child, and her medical attendant, on leaving, had cautioned the nurse not to allow the patient to be disturbed; but after he had left about an hour, she—thinking, I suppose, to show her superior skill—got her patient off the bed, sat her in a chair, and commenced making the bed (which ought to have been done before delivery). Alarming flooding came on, and before my arrival the woman

was a *corpsé*! The second case occurred in my own practice. It was that of a lady in a good position of life, whom I had left after delivering of an eight months' child. Previous to leaving, I cautioned her most strongly not to be moved; she, however, was unusually self-willed, and would insist upon getting out of bed soon after I left. Before she could return to her couch she fainted away, fell upon the floor, and with the utmost difficulty was kept from sinking. She is alive still, but to this day feels the effects of her obstinate disregard of advice, the paramount importance of which would have been self-evident to her own common sense, had she exercised it, or had she suffered herself to be guided at a time of extremity by the experience of others.

I have already referred to the length of time which sometimes elapses between the commencement of the first and the termination of the third stage of labour. It is this interval which is so peculiarly trying to the doctor as well as the patient; for if the latter is rather nervous, and surrounded by importunate friends, and a nurse ignorant of her duties, the former is doomed frequently to waste much valuable time, to be imprisoned in the chamber, and to lend either a willing or unwilling ear to an amount of scandal which it would be both uninteresting and unprofitable to attempt to transcribe. If he should be so imprudent as to leave the house for a short time—probably at the first pain or two—after his departure, the patient cries

out for help, which alarms the friends. Off posts the anxious husband, or some other trusty messenger, to seek the truant doctor, who, with all possible speed (to the neglect of every other duty), makes his way again to the bedside of his patient, not unfrequently being met by the expectant grandmother at the top of the stairs with the confidential assurance that "if she had had help sooner it would have been over long ago." Perhaps he had only been absent an hour—or, at the most, two—and, to his great disappointment, is destined to wait hours longer, and then, by way of establishing the correctness of her previous opinion, grandmama announces her belief that the doctor has frightened the pains away! A great deal of this importunity on the part of those usually met with in the lying-in room is not only quite unnecessary but positively injurious, and arises purely from ignorance. On the part of the patient this may be quite natural and excusable, but it becomes unpardonable in the nurse, and results either from officiousness, or want of presence of mind, in one who ought to be calm, collected, and capable of inspiring confidence in those around.

It will sometimes happen that the child is born during the absence of the medical attendant, and monstrous is the confusion which this causes, although if the nurse knew (what she would be taught in a training institution) how to separate the child from the mother, no harm would result to anybody. No one should presume to take charge of a woman in labour

ignorant of the requisite knowledge to enable her to perform this simple duty. I will endeavour to explain how, under such circumstances, the nurse ought to act, so as to preserve the life of the child and remove all source of anxiety from the mind of the mother. It should, then, be borne in mind that the child is connected with the mother by means of the umbilical cord or navel string, and all that is necessary to be done on the birth of the child, is to tie it firmly in two places, at about three inches from the navel, and then divide it between the tyings by means of a pair of scissors.

The object of tying the cord in two places is to prevent any bleeding taking place, either from the mother or the child. It is important that the cord should be tied tolerably tight; the necessary precaution to be observed in this simple operation will be best illustrated by the two following examples:—

Mrs. K. was confined of a fine boy, and, as she had been married several years without presenting her husband with a pledge of affection, she was naturally most anxious about the life of her offspring, which was born during the absence of the medical attendant. The nurse was at a loss to know what to do in such a case, and a neighbour who had had, as she afterwards observed, sixteen children, was summoned to give her assistance; she immediately divided the cord, *but omitted to tie it*: consequently the poor babe, when next examined, was found to have bled to death.

Case No. 2 is different in its character, although similar occurrences are more frequent. Mrs. T. was unexpectedly confined, previously to my arrival, and although she had with her an experienced woman (as the term goes), she did not like to touch the child or to make any attempt to remove it; and on my proceeding to do so as soon as I arrived, to the mother's great disappointment, and my unavailing regret at the ignorance of the woman in attendance, I discovered the child—a lovely infant—quite dead from the effects of the navel string twisted round its neck. It was, in fact, strangled; and had the slightest presence of mind been exercised, the life of the child would have been spared. It is thus in numberless instances that valuable lives have been lost to the community, and hopeful mothers rendered childless through the incapacity of the nurse, in the absence of the medical attendant, to perform so simple and yet so important a duty as separating a child from the mother when it has been unexpectedly ushered into the world.

The child having been removed from the mother, either by the medical practitioner, or in his absence by the nurse, it should be wrapped in flannel and placed in a position of security until a convenient opportunity for washing and dressing it, to which reference will be made presently. Here let me impress, in the strongest possible terms, the absolute necessity for the attendance of the medical practitioner to remove the after-birth, for it is the stage of the whole

process which requires the greatest skill, and ought never to be touched but by educated hands; and it is that stage of the delivery when the anxiety of the mother usually ceases, and that of the medical man begins. If children's lives have been sacrificed by want of knowledge or backwardness on the part of nurses, most painful is it to relate that the lives of the mothers have also been sacrificed by their ignorant interference.

The following case is an apt illustration of this fact. Mrs. C. had had a large family, and invariably made good and rapid recovery, so much so that on the occasion of her last pregnancy she decided to dispense with the services of her usual medical attendant (to whose skill and attention her previous propitious deliveries were no doubt in part due) and to content herself with only the attendance of the woman who had previously attended upon her in the capacity of a monthly nurse. Everything went on satisfactorily so far as the birth of the child was concerned, and I have no doubt that the old woman and the patient both congratulated themselves on having so cleverly *done the doctor*, little taking into their wise consideration that nature and not art had delivered the child; but in the position of the after-birth nature had caused a deviation, for it was not thrown off in the time assigned for that process, viz., about twenty minutes, and the nurse becoming impatient, though too ignorant to be alarmed, began pulling at it. The more she

pulled the more the poor patient gave signs of pain and distress, but, heeding neither cries nor difficulties, the ignorant nurse did not cease pulling until she had torn away the womb, the bladder, and part of the intestines!—the immediate result of which was death to the mother. Although the law stepped in, and the ignorant woman was indicted, convicted, and imprisoned for the offence, how awful to think that one was thus hurried unbidden into the presence of her Maker, a husband rendered a widower, and children motherless, through such gross mismanagement!—since in skilful hands that life would, humanly speaking, still have been spared.

If, then, the child is born during the absence of the medical man, I have pointed out what the nurse ought to do, as well as what she ought to leave undone. Every expectant mother should know how far she ought safely to trust the life of herself and child in the hands of any one except her medical adviser. To recapitulate, I would observe that—by the nurse—the child *ought only to be touched when it is already born, and that the after-birth ought never to be touched at all*; for if the medical man cannot be obtained before or after the child is born, it is better and safer to leave the after-birth to be expelled entirely by nature, which usually takes place in about twenty minutes after the expulsion of the child; and if, from any cause, a greater delay occurs, it is the duty of the nurse to seek some skilled and responsible hand to remove the after-birth.

Having now mentioned various particulars in the progress of a natural labour, and having referred to those duties devolving upon the nurse (to fit her for the discharge of which, I maintain, it is absolutely necessary that she should be properly trained and instructed), I now propose to devote a few remarks to the consideration of the management of the little creature who has so recently taken its place upon the great theatre of the world. The first question usually asked is,—“*Shall it wear caps?*” I think the best rule to adopt, in answering this query, is, to observe that a newly-born infant requires as much artificial warmth applied to its body as is compatible with the ordinary laws of health, and the warm and protected situation from which it has emerged. It is clear that nature provides, in ordinary cases, a sufficient covering for the head (independent of the thickness of the skin and bony envelope for the brain), in the shape of hair, so that the infant usually requires no further covering; but if the hair is too scanty, and the weather unusually severe, I think the use of the cap for a few weeks is advisable. The next question usually asked, is,—“*How is the navel-cord to be managed?*” Much importance is attached to this point. I have constantly met experienced nurses, who would (although considering themselves quite competent to every other branch of their duty) refer to the doctor to manage the navel-cord. Now it so happens, that the only management it requires, is to wrap it round with a piece of linen, and leave it alone

until it separates from the body of the child by a process of decay, and then drops off.

Too much care cannot be observed in washing the infant—every part of its body should be well washed and thoroughly dried. In dressing it, its clothes should invariably be stitched on (not pinned), so that it may not be left to scream for hours from the effects of a pin carelessly inserted, as I have too often known to be the case. Every medical practitioner will bear testimony to the great carelessness often displayed in washing and dressing infants; and the wonder is, not that they should be occasionally restless and uneasy after it, but that, with their highly sensitive skins, convulsions are not a more frequent consequence of inattention. Awkward and ridiculous blunders have been made by newly-blessed fathers and mothers from want of care and observation in first washing the infant. The following instance caused considerable merriment in the neighbourhood in which it occurred, although I have no doubt the father was anything but pleased with the puns and *bon mots* liberally circulated at his expense. His wife having presented him with the first pledge of affection, he eagerly inquired the sex, and, to his joy, learned from the nurse that it was a son. As he had previously shown great anxiety to have an heir, he sallied forth to announce the news to his friends, and receive their congratulations, which were both hearty and sincere. So powerfully did the event operate upon his feelings that he determined to

commemorate it by inviting a few of his familiar acquaintances to a glass of champagne. Now, just judge of his disappointment on the following morning, when he learned that the child was a daughter (a fact only to be verified by ocular demonstration). I leave the reader to imagine his confusion on receiving the inquiries of his friends after the health of his "son," in having to explain to them the mistake he had been unwittingly led to commit, and the laugh raised at his simplicity. That the son proved to be a daughter—the nurse having carelessly washed the child—was evident to both parents; and, thinking her neglectful in so plain and simple a duty, they judged she would be still more so in the discharge of her higher functions. She was consequently dismissed, and was always known afterwards as "the old woman who could not tell a boy from a girl."

The baby having been carefully washed and dressed, the next question asked is—"What shall be given it to eat?" This is a question which it would appear quite easy and simple to answer, because a Physiologist would say the treatment indicated by nature as proper for one child would be proper for all; but anyone attempting to upset "old women's notions" of feeding by any argument of that kind would find, as I have done to my cost, that their prejudices are not so easily overcome. One thinks they should have a little rue tea; and a knowing old lady once voted me an ignoramus, because I told her—"If rue tea were

necessary immediately the child was born," I thought "it would come into the world with a little bundle of rue round its neck." Another thinks it should have butter and sugar: another, castor-oil: and so on to the number of *legion*. The fact is, the child wants nothing but to be made warm and comfortable, and to be allowed to go to sleep; the first milk it draws from the mother is the only medicine it requires (I am of course speaking of healthy infants). The best artificial food, until the secretion of the milk is established, is composed of one part of cream to two of water, sweetened with lump sugar, or a little well-made gruel.

The future treatment of the mother and child would be included in the successive instructions of the medical practitioner, who, it may be expected, would attend daily, or nearly so, for eight days, according to circumstances, such as the rapid or slow recovery of strength by the mother, or the state of health of the child. I therefore here, for the present, leave the subject, reminding my readers that the object of these pages has been to show—not that the nurse is a person of minor importance in the lying-in chamber, but quite the contrary; and that, if docile and properly instructed, she contributes the most valuable aid that the medical attendant upon the lying-in woman can receive.

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A DIALOGUE

BETWEEN A

BILIOUS PATIENT

AND A

PHYSICIAN.

BY

JAMES HENRY, M.D.

FELLOW OF THE COLLEGE OF PHYSICIANS, DUBLIN.

SIXTH EDITION,

WITH ADDITIONS AND CORRECTIONS BY THE AUTHOR.

LONDON:

HENRY RENSHAW, 356, STRAND.

1843.

PREFACE TO THE SECOND EDITION.

The author has been informed, that some readers of the *Dialogue between a Bilious Patient and a Physician* have ascribed to him the intention of depreciating medicines and the art of medicine. He therefore takes the opportunity afforded by the publication of a new edition, to state that nothing could be further from his mind than such an intention, and that in the *Dialogue between a Bilious Patient and a Physician*, he has no other object in view than to show that the habitual use of purgatives is injurious to health, and that the diseases commonly denominated nervous and bilious cannot be cured by those medicines, nor, indeed, by any medicines whatever, but solely by avoiding the causes from which those diseases spring. The author hopes that this object is not inconsistent with a high respect for medical science, and a full conviction of the usefulness of purgative medicines, when skillfully applied, in those cases of disease in which it is proper to apply them; and he feels assured that, in attempting to correct, as far as in his power, a great medical abuse, he is doing that which not only will not

diminish, but, on the contrary, will increase and promote a rational confidence in the healing art; that rational confidence, both in medicines and medical advice, which, so far as the author has observed, is always entertained by well informed persons, and which is equally remote from the blind faith which ascribes almost miraculous power to medicine, and from the suspicious scepticism which denies it all power whatever.

Another objection has been made to the *Dialogue between a Bilious Patient and a Physician*.—It has been said that the author should have used a less popular form of writing, and that he should have addressed himself to physicians, not to the public. To this objection the author replies that it was necessary to use popular language, and to address himself to the public, because the abuse which he sought to correct, although originating in the first instance with physicians, had spread from them to the public, and had become popular, and therefore could not be corrected through the medium of a treatise written in technical language and addressed to physicians.

Fitzwilliam-square, Dublin,
October, 1838.

A DIALOGUE

BETWEEN A

BILIOUS PATIENT AND A PHYSICIAN.

PART FIRST.

Patient. Good morning, Doctor. I have called upon you professionally, and if you are not otherwise engaged, would be glad to have a few minutes' conversation with you on the subject of my health.

Physician. I am quite at leisure. Be so good as to sit down, and tell me what is the matter.

Patient. The bile and the nerves, Doctor.

Physician. I think I understand you; but may I beg of you to be more explicit?

Patient. I am so bilious and nervous, that my life is a burthen to me; and yet I cannot say that I have any particular pain or ache, or that I am ever confined to bed, or to the house, unless when I happen to catch cold.

Physician. Describe your symptoms as accurately as you can; by so doing, you will enable me to form a more correct judgment of the nature of your case, and the proper method of cure.

Patient. Cure, Doctor! I fear that is out of the question. My complaints are of too long standing, and have baffled the skill of too many eminent physicians, to leave me much reason

to expect a cure. Your kindness may perhaps alleviate my sufferings, and render my life less wretched; but as to my being cured, it is my settled conviction that such an event will never take place.

Physician. Well, we shall discuss that point by and by. In the mean time give me some account of your symptoms.

Patient. I have almost constantly an uneasy feeling here, at the pit of my stomach. At different times of the day this feeling is of different kinds; before eating, and particularly before dinner, it is a sense of gnawing, or sinking, or weakness; after eating, it is a most distressing sensation of fullness and distention; so that, whether my stomach be full or empty, I am never without more or less uneasiness in that situation. I attribute much of this uneasiness to flatulence and acidity; for I frequently bring up large quantities of wind, and sometimes even mouthfuls of half-digested food mixed with sour water. My appetite is bad; and my bowels so costive, that I am obliged to take opening medicine almost constantly. My nights are restless, and disturbed by startings and frightful dreams. In the morning I awake with a foul tongue and clammy mouth, and generally with a headache which does not go away until after breakfast. During the day I am languid, and ill disposed for any kind of active exertion, and after dinner I feel heavy and oppressed. If I take wine or spirits at or after dinner (as I generally do in order to relieve this heaviness and oppression), I am better while the excitement produced by those liquors continues; but then I am more feverish at night, and in the morning my mouth is drier, my head-ache more severe, and I have less appetite for breakfast. Distressing as this state of health is, it would be tolerable if it were not for the nervousness which accompanies it, and which is often so great as almost to unfit me for the discharge of my ordinary duties and engagements. Yet in the midst of all my sufferings, I have the consolation of thinking that I have not brought down these evils on my head by intemperance or dissipation, but, on the contrary, have taken care to preserve, by sober and regular habits of living, a constitution which is naturally sound and healthy.

Physician. I am happy to see that your case presents so favorable an aspect. Your habits of living being regular, and

your constitution naturally sound, there is every reason to suppose that your complaints are not incurable; and that, by the use of judicious means, you may speedily be restored to the enjoyment of perfect health.

Patient. You speak so lightly of my case, that I almost think you take me for one of those unhappy persons, who, although there is scarcely any thing the matter with them, continually tease their friends with their complaints, and exaggerate every little ailment in order to obtain the balm of compassion. If such is the opinion which you have formed of me, believe me that it is erroneous. There is, unfortunately, but too much reality in my sufferings; and in the picture which I have drawn of them, I have been most careful to avoid all high colouring.

Physician. I am far from thinking that the picture you have drawn is too highly coloured. The misery, both mental and corporeal, which arises from that habitual disorder of the stomach and digestive organs, commonly known by the name of biliousness, can hardly be exaggerated. It is quite sufficient in ordinary cases to make life very uncomfortable; and in extreme cases, like yours, to make it absolutely wretched. But although biliousness, or a disordered state of the stomach and bowels, is productive of so much distress, it is by no means incurable; on the contrary, in cases like yours, where the constitution is naturally good, and not impaired by intemperance, it is very easily effected by remedial measures, and in most instances can be entirely cured by them. It is only necessary to take the proper method, and above all things to discover, if possible, the causes which have excited the diseased state, and scrupulously to avoid them in future.

Patient. What you say is reasonable, and gives me great encouragement. But you will excuse me, if, having been so frequently disappointed in the prospects of recovery held out to me by other physicians, I still feel some degree of doubt, and some want of confidence even in what you say.

Physician. It is but natural that you should. I am almost a stranger to you, and cannot expect you to repose any extraordinary confidence in me. Happily, however, on the present occasion, no extraordinary confidence in your physician is required, as he wishes to address himself to your reason, not

to draw upon your credulity, and will not ask you to take a single step which shall not have been previously approved of by your own understanding. Now show me your tongue.

Patient. [*Shows his tongue.*] It is pretty clean at present, but it was foul and clammy this morning. I scrape it every morning when I get up, and then it remains tolerably clean until the next morning, when it is as foul and clammy as ever; and I have observed that it is more than usually so when I have taken a blue pill or antibilious pill over night.

Physician. Which, I should suppose from what you just now said, you do pretty often.

Patient. Yes, very often. I am obliged once or twice in almost every week to take some such medicine at night; and in the morning either a Seidlitz powder, or a spoonful of Epsom salts dissolved in a cup of camomile tea, or one or two spoonfuls of Gregory's powder. If for a short time I neglect to take these, or some such opening medicines, I have no passage in my bowels for two or three days together, and what does come from me consists only of a few hard lumps of a dark green, or nearly black colour; then the bile accumulates, as there are no means of carrying it off; I feel a most disagreeable sense of distention and fullness, particularly after meals; my nights are restless, and in the morning I awake with a headache. At last I take some of the opening medicines which I have mentioned, and the relief is instantaneous; my bowels are well moved two or three times or oftener; the stools are copious, and of that bilious, yellow colour which shews that the medicine is carrying off the bile; my appetite is improved, and for several days I have neither acidity nor distention of stomach; my sleep is tranquil and refreshing, and I am free from morning headaches. If this state were to continue, I should be quite happy, and have but little occasion for medical advice; but, unfortunately, such is my bilious habit of body, that when the operation of the medicine is over, my bowels become even more costive than they had been previously, and all my disagreeable sensations return. If, in this situation, I have again recourse to the opening medicine, I find that it does not produce the same beneficial effects as before, and I am obliged in consequence either to increase the dose or to change the medicine. I thus succeed in obtaining

further relief; but this relief also being but temporary, a new change of medicine, or a stronger dose of the old, becomes necessary; and so I go on from month to month, and from year to year, almost always ailing and taking medicine, and rarely, if ever, knowing what it is to be quite well for ten days together.

Physician. You describe a case which is unfortunately but too common, and of which I have seen but too many sad examples; a case, too, for the cure of which almost every medicine in the *Materia Medica* has been prescribed, and I am sorry to add almost uniformly without success.

Patient. With the one hand you raise the cup of hope to my lips, and with the other you dash it to the ground. It is but a few moments since you told me that my case presented a favorable aspect, and that there was every reasonable prospect of a cure; and now you inform me, that cases like mine almost invariably baffle all the powers of medicine.

Physician. All the powers of medicine, but not the art of the physician. He possesses means infinitely more powerful than medicine for the cure of diseases—means which are often successful when medicines totally fail. In the greater number of diseases, the due regulation of the diet and of the general habits of living is of more efficacy than the medicines prescribed. This is particularly the case in bilious disorders, which originating, as bilious disorders almost always do, from erroneous habits of living, are to be corrected not by medicines, but by the substitution of wholesome habits for those which are injurious to health.

Patient. You deceive yourself if you expect that my health can be restored by diet and regimen. I have already paid the most scrupulous attention to those points, and yet I continue bilious notwithstanding. I am no doubt better when I live by rule, and worse when I do not, but still I am more or less bilious, let me live in what manner I may; more bilious when I take but little exercise, or when I eat of two or three dishes at dinner, particularly if there are ragouts or other made dishes among them, and also when I eat pastry or drink porter; less bilious when I take more exercise, and when I eat only of a single joint, abstain from pastry and made dishes, and drink only water.

Physician. As you have already experienced so much benefit from attending to regimen, might it not be worth your while to try whether you would not derive still further advantage from a regimen more judiciously regulated, and more steadily and strictly adhered to?

Patient. A strict adherence to regimen requires more resolution than I possess. I cannot resist the constantly occurring temptations to deviate from the strict rule. Besides, under any regimen, medicine is indispensable to me, for the purpose of opening the bowels and carrying away the bile when it accumulates. Nothing gives me such speedy relief, even when I am at the worst, as a dose of opening medicine. Unfortunately, however, all the opening medicines to which I have hitherto had recourse, whether quack medicines, or domestic remedies, or the prescriptions of physicians, have one common defect; they all lose their power by use. Give me an opening medicine free from this defect, and I shall be content. I shall then possess the best means which I expect ever to possess, of alleviating my sufferings; for as to a perfect cure, I entertain, as I have already said, no hopes of it. If your skill cannot supply me with such a medicine, I fear that notwithstanding all I have heard of you, you can do no more for my relief than has been already done by your brethren of the profession.

Physician. It is impossible for my skill to supply you with that which does not exist. All medicines, and particularly all opening medicines, lose their power by use. Your own experience has taught you this fact, as regards all the medicines which you have yourself tried: my more extended experience has satisfied me that this property is common to all medicines, particularly to all purgative medicines; it is indeed inseparable from the nature of medicines, and depends upon the general law, that all impressions become less strong by habit and repetition. But even if this law of the animal economy had no existence, and if the stomach and bowels did not become insensible to the stimulus of the same medicine, when frequently repeated; or if you contrive to evade this law by a continual change of the dose, or of the medicines, or of both, still the cure of biliousness cannot be effected by purgative medicines. You have yourself stated, that the relief obtained

from such medicines is but temporary; I think it can be satisfactorily shown, that even that temporary relief is purchased at the high price of the aggravation and perpetuation of the disease. For, only reflect for a moment on the situation in which you are, when you take the opening medicine, and on the mode in which it produces relief. A lump gathers in your stomach within an hour or two after eating; you swell up, and have a headache, which partially abates on your bringing up some wind, or sour water, or one or two mouthfuls of half-digested food; there has been no passage in your bowels for perhaps two days; you feel oppressed, and hot, and feverish; in one word, you have a fit of the bile. You know by experience that a dose of opening medicine will relieve you, and that if you do not take it, you will pass a restless night, and have a headache in the morning. You take the dose, and immediate relief follows; the bowels are unloaded; the half-digested food, which was disagreeing with and irritating the stomach, the wind and the acid liquor are carried away at once, and a delightful calm succeeds; the headache abates, or for a while ceases altogether; the skin becomes cool, and a sensation of ease and comfort pervades the whole frame. Such are the beneficial, I might almost say the magical, effects of purgatives in bilious disorders; effects, for the sake of which, physicians but too readily prescribe, and patients but too eagerly take, those medicines. Unhappily, however, the beneficial effects of purgatives are but of short duration, and are quickly superseded by their injurious effects, which I shall now describe to you. *First.* Inasmuch as a purgative operates by clearing out the stomach and the entire tract of the intestines at once, it removes not only the offending substances which the stomach is unable to digest, and which are therefore a source of irritation to it, but also that portion of the food which would be digested and assimilated, if allowed to remain, and not removed by the operation of the medicine. There is, therefore, a loss of nourishment to the system at each operation of a purgative; a loss which may be but small on a single occasion, but which becomes very considerable when purgatives are used habitually. *Secondly.* This is not the only way in which a purgative debilitates; it causes a flow of bile from the liver, of pancreatic juice from

the pancreas, and of intestinal juices from the whole of the vast tract of the intestinal canal; it not only causes these fluids to flow in greatly increased quantity into the intestines, but also carries them out of the body along with what the intestines previously contained. This sudden flow of fluid into the intestinal canal from the stimulus of a purgative, resembles the sudden flow of fluid produced on the surface of the skin by the stimulus of a blister, and is, like it, debilitating. In proportion also, as the fluid produced by the stimulus of the purgative is infinitely greater in quantity than that produced by the stimulus of the blister, the debilitating effect of the former is infinitely greater than that of the latter. Purgatives therefore debilitate, not only by depriving the body of the nutriment which it has received from without, but also by draining it of its own fluids. On this account they are much employed by the physician for the express purpose of inducing debility, in diseases in which a reduction of the strength is desirable; and are, next to blood-letting, the most powerful means which he possesses for the attainment of that object. But let not the dyspeptic patient be misled, by a false analogy, to believe that because purgatives are beneficial in the cases just mentioned, they will also be beneficial to him. His frame is already but too much debilitated, and will not bear to be deprived of its necessary nourishment, and drained of its vivifying juices by the rude action of those medicines. *Thirdly.* Purgatives disturb the nervous system, and lower the vital energy. These effects, which are of course less evident in strong healthy men, who are but little affected by depressing influences of any kind, are very evident in weak, and delicate, and particularly in dyspeptic persons. In such persons, the depressing influence of purgatives on the nervous system is shown by increased nervousness and irritability, both mental and corporeal, and sometimes even by spasms and hysterical convulsions. *Fourthly.* Sickness, nausea, vomiting, griping, and even fainting, and passing of slime and blood from the bowels, some one or more of these are usual attendants on the operation of a purgative. These symptoms (which are, by the way, the common symptoms of poisoning) indicate, according to their number and intensity, the amount of the direct injury which the purgative has inflicted on the intestinal canal.

When all these symptoms together, and in a severe form, accompany the operation of a purgative, the injury done is very considerable; so considerable as even to destroy life in some cases, in which the strength has been previously much reduced either by long-continued illness or by old age. Although in ordinary cases the symptoms are fewer and less severe, and indicate a much smaller degree of injury, yet even in such cases the amount of injury sustained by the constitution becomes at last considerable, inasmuch as the smallness of the injury on each particular occasion is usually compensated by the frequency of its repetition. *Fifthly.* Immediately after the operation of a purgative, a sense of want or emptiness is felt all over the frame; a sensation occasioned in part by the sudden and forcible removal from the stomach and intestines of their ordinary contents, but principally by the draining away of the vital fluids under the operation of the purge. To relieve this sense of want or emptiness, which is not unfrequently mistaken for healthy appetite, food is taken in greater quantity than before. Hence a new source of trouble, and an aggravation of the original bilious symptoms; which having arisen, in the first instance, and before the operation of the medicine, from the incapacity of the stomach to digest the food it had received, cannot but be aggravated when the stomach, weakened and disturbed by the medicine, is called upon to digest a quantity even greater than that which was too great for it when it was in a stronger condition. *Sixthly.* The unhappy sufferer never ascribes to its true cause the increase of suffering which is the invariable consequence of the operation of a purgative. He gives indeed to the purgative full credit for all the relief received, but never fails to ascribe the subsequent aggravation of the symptoms to the increased biliousness of his constitution, requiring, as he thinks, the further use of purgatives. Misled by this fatal delusion, he has again recourse to the opening medicine with the same result as before; a temporary relief, which only confirms him in his opinion of the efficacy of his mode of treatment, and a subsequent aggravation of the symptoms, again attributed not to its true cause, his mal-practice, but to the fault of his constitution and the increasing severity of the disease: and so he proceeds in his round of error, founding his practice on his

false theory, and confirming his theory by an erroneous estimate of the results of his practice. *Lastly*. To all these evil consequences of the use of purgatives, there is yet to be added that inconvenience which you have just now so sensitively deplored, and in order to find a remedy for which you have this day sought my assistance; I mean the increased confinement of the bowels which always follows the operation of an opening medicine. This is nature's rest after the violent excitement into which the medicine had thrown her. In this rest of nature the bilious patient sees nothing but disease, and hastens to interrupt it by a repetition of the dose; but nature is wearied, and is not so easily excited as before; she is, besides, accustomed to the stimulus, and does not regard it; the purgative repeated has no effect, and the bowels remain shut up; the patient becomes alarmed, and doubles the dose; and that failing, has recourse to new and more powerful drugs; he succeeds at last, and the bowels are opened, only to relapse into still more obstinate costiveness, to be in its turn overcome by remedies more powerful still; until at length the delicate membrane of the intestinal tube becomes irritated, and the setting in of dysentery but too plainly indicates that inflammation or ulceration has taken place.

Patient. You draw a terrifying picture, Doctor; and I only wish that I had less experience of its close resemblance to nature. I have been injured by those strong, drastic, irritating purgatives, and am ready to join in your reprobation of them. But you will surely not pronounce the same sentence of condemnation against those mildly opening and alterative medicines, which neither sicken nor gripe, but merely give a gentle stimulus to the bowels, and assist their natural action; I mean such medicines as Gregory's powder, or the blue pill, which are so gentle and safe in their operation, that many persons keep them constantly at hand, and use them as occasion requires, without asking any medical opinion upon the subject.

Physician. The milder the purgative, the less dangerous of course it is. But as a mild purgative is apt to be ineffectual, unless it is given in a large dose, it comes to pretty much the same thing whether you use the large dose of the mild purgative, or the small dose of the strong one. Every medicine, strong or weak, which is strong enough to move the

bowels, and is used habitually for that purpose, comes within the scope of my objections. The evil is in the purging, not in the medicine; and it is the practice of purging which I condemn, not the agent by which it is effected. When you imagine that the evil of the practice can be obviated by a judicious selection of the agent, you fall into an error almost universal amongst bilious patients, who lay the blame of the inconvenience they experience from the practice of purging, upon the individual medicines employed, not upon their own false theory. This error is doubly dangerous, inasmuch as it not only prevents you from discovering by experience the falsehood of your theory, but at the same time leads you into the vain pursuit of a perfect purgative, that medical philosopher's stone, which exists no where except in the imagination of the dyspeptic patient, or the advertisement of the quack doctor. You go about from friend to friend, from physician to physician, and from quack to quack, in search of this purgative, to which you are to have recourse whenever you are either bilious, or nervous, or costive, or hippish, or have eaten too much, or have drunk too much, or when your skin is hot, or when you have a headache, or are feverish, or have caught cold; you go about in search of the perfect purgative which is to have the same effect under all these different circumstances; which is to be not only certain, but at the same time safe and mild in its operation; which is neither to gripe, nor to sicken, nor to lose its power by use; which is not to disappoint you by doing too little, nor weaken you by doing too much; you meet with nothing but disappointment, and yet you persist in the pursuit, and close your eyes against the obvious truth, that the operation of a medicine must be different at different times, according to the different states of the constitution on and by means of which it operates. On this principle, as a foundation, rests the whole science of medicine, the whole art of the physician. By this principle the physician is distinguished from the quack, and the science of medicine from quackery. The physician who, through ignorance or neglect of this principle, prescribes medicines solely with a view to the properties of the drugs, and either does not understand or does not attend to the particular constitution and state of health of his patient, is a quack, although

he may have graduated at an university, and his medicine is quack medicine, although it may have been compounded by the most expert apothecary and according to the rules of the College of Physicians.

Patient. I acknowledge that there is a great deal of truth in what you say, and now, for the first time, clearly perceive how wide is the difference between the scientific physician, who never prescribes until he has first made himself acquainted with the constitution of the patient and his particular condition at the time, and the quack, who prescribes the same medicine not only for the same person at different times and under different circumstances, but for all persons whatsoever, no matter how dissimilar in age, habits, strength, constitution, and circumstances of disease. I am convinced also that the idea of a perfect habitual purgative must be given up as an absurdity, and that purging will increase, rather than diminish, my bilious symptoms. I am willing to be guided by your opinion on these subjects, and shall therefore no longer use purgatives as a remedy for bile. But I fear that I cannot do without them altogether, and that I must occasionally have recourse to them, in order to obviate the natural costiveness of my bowels. I have no doubt that even for this purpose it would be better to take them under the advice of a physician, and would certainly do so if that mode were not both expensive and troublesome. It better suits my means and my indolent habits to have recourse to what I must acknowledge partakes of the nature of quackery, and to keep a little medicine beside me for the purpose of occasionally freeing my bowels, even although its use should be attended with some of the disadvantages which you have pointed out.

Physician. As I have succeeded so far, and have convinced you that your bilious symptoms will not be benefitted by the use of purgatives, I shall have less difficulty in advancing the next step, and satisfying you that purgatives are not rendered necessary even by the costive state of bowels of which you speak. Indeed, your use of them for the purpose of obviating costiveness seems rather inconsistent with the complaint which you just now made, that as soon as the operation of a purgative is over your bowels always become more costive than before.

Patient. Your objection is just; but the necessity for the purgative is sometimes so pressing, that I think only of present relief, and little, if at all, upon future consequences.

Physician. And pray what do you consider such a pressing necessity for a purgative, as should make you regardless of future consequences?

Patient. I think that it is indispensable to good health that there should be an evacuation of the bowels every day, and that this evacuation should be of a soft consistence, and of the colour which Mr. Abernethy has so well described as the colour of wet rhubarb. If my evacuations are, for several days together, hard and scanty, and of a dark olive or black colour, and more especially if I pass one entire day without an evacuation, my mind becomes uneasy; on the second day my uneasiness increases, and I think it quite necessary on that day, or at the very furthest on the third day, to take opening medicine, for fear of inflammation. I think you will hardly deny that, if the bowels remain quite shut up on the third day, there is an absolute necessity for taking some kind of opening medicine.

Physician. I cannot admit the paramount necessity for taking opening medicine on the third day, because I have never seen any very bad consequences result even from a much longer delay. If, as you apprehend, inflammation may result from mere costiveness, it must be an extremely rare occurrence, as I have never yet met with an instance of the kind. Has it never happened in your own person that the third, or even the fourth day has passed without an evacuation, and yet no inflammation ensued?

Patient. I remember that on one occasion I was very much engaged in business of a sedentary nature, and took but little exercise for several days together; during the whole time my mind was much occupied, and I quite neglected my bowels, which became so costive that I had no passage in them for five or six days; I recollect very well that at the end of that period a smart purging came on by itself, just as if I had taken medicine, and, when that stopped, my bowels went on pretty much as usual.

Physician. That was a result very different from inflammation; the spontaneous purging of which you speak was

not only without danger, but was of real utility, being the curative operation by which nature restored the balance of health, which had been deranged by the continued costiveness. But it is only when the costiveness is very long continued, that nature finds a spontaneous purging to be necessary. On ordinary occasions, the delay of one, two, or three days is fully compensated, by one or two motions a little larger than usual. If you only take care not to interrupt the process of nature by the officious interference of art, you will almost invariably find that the evil of a few days' costiveness is remedied in the manner which I have mentioned; either by one or two full motions, if the costiveness has been of short duration, or by spontaneous diarrhoea if the duration of the costiveness has been longer. This is the process of nature, and is effected, as all the processes of nature are, by a very simple arrangement; for the excrement itself being the stimulus which she has provided to cause the intestine to contract and expel its contents, every increase in the quantity of the excrement produces a corresponding increase in the strength of the stimulus; if therefore there happen to arise in the intestine any dulness or slowness in answering to the ordinary stimulus, the gradually increasing quantity of the excrement produces a gradual increase in the strength of the stimulus, until at last the torpid intestine is roused to the performance of its duty. This arrangement, by which the strength of the stimulus is increased in proportion, not only to the torpidity of the intestine, but to the necessity for the evacuation, is so perfect, that under all ordinary circumstances you may depend with entire confidence upon nature's performing her office within due time; and you will find, if you carefully inquire into those cases where inflammation of the bowels, or other serious injury has been supposed to arise from constipation, that the inflammation or other injury was the cause, and the constipation only the consequence; and that in such cases those remedies alone were effectual which removed the inflammation, or other cause of constipation, not those which were applied directly to the constipation itself. If it be unnecessary to take opening medicine, even although the bowels may have been shut up for two or three days together, it is still less necessary to force the bowels by

means of medicines of this kind to what is called a regular daily evacuation. The opinion that there should be an evacuation of the bowels every day is indeed very common, but it is not founded on the observation of nature, who has left the interval that may elapse between the evacuations subject to great variety, not only in different persons, but in the same person at different times. Of a number of persons all in perfect health, one may have a stool every day, another twice a day, another every second, or third, or fourth, or fifth day; and a healthy person may have a stool once or twice every day at one period of his life, and only every third or fourth day at another period. Every day's experience teaches medical men the fact, that there is naturally this great variety in the number of the stools. Even if this fact were not taught by experience, it might be expected *a priori*, because we know that the number of the stools depends on the quantity of the excrement formed, and on the natural excitability of the bowels; both of which vary not only in the different periods of life, but in different individuals at the same period. The quantity of the excrement varies, because the elements of which it consists vary—viz., the residue of the food after the nutritious matter has been extracted from it by the absorbents, and certain juices which require to be removed out of the body. The former of these elements—viz., the residue of the food, is greatest in youth, and gradually diminishes as age approaches, because the residue of the food is, *ceteris paribus*, proportioned to the quantity of food taken, and the quantity of food taken is greater in youth and less in age, more nourishment being required by a body growing and enlarging and much exercised, than by one which has ceased to grow and enlarge and is less exercised. The latter of the two elements constituting the excrement—viz., the juices which are to be eliminated from the body along with the residue of the food, follows the same law—i. e., is greatest in youth and diminishes as age advances, because, *first*, copious secretion belongs to youth, less copious to age; and *secondly*, because these juices performing an important part in the processes of digestion and nutrition, their quantity must be in proportion to the activity of those processes, which we have seen is greatest in youth and least

in old age. The excrement is, therefore, *ceteris paribus*, greatest in youth, and diminishes gradually towards old age, because each of the elements of which it consists is greatest at the former period, and diminishes gradually towards the latter. The number of the stools, therefore, so far as it depends on the quantity of the excrement, is not only variable, but varies according to a certain law, being greater in the earlier, and becoming less and less towards the later periods of life. But the number of the stools depends not merely on the quantity of the excrement, but on the excitability of the bowels, which again varies according to the same law as the quantity of the excrement, being greatest in infancy and youth, and gradually diminishing towards old age; the number of the stools, therefore, so far as it depends on the excitability of the bowels, gradually diminishes from infancy to old age. For both reasons, therefore, both because the quantity of the excrement is greater, and the excitability of the bowels greater also, the stools of young persons are more numerous than those of adults, and those of adults more numerous than those of elderly persons. It follows, that the opinion that there should be an every day motion, or any certain number of motions within a given time, is opposed not only to daily experience, but to the principles of physiology, by both of which we are taught that if a rule requiring a certain number of motions within a given time be applicable to one period of life, it will be totally inapplicable to another period, whether later or earlier.

Patient. You admit then the existence of a rule, and you differ from me only in assigning a separate rule to each different period in the life of the individual.

Physician. I beg your pardon; there is a much wider difference between us; I speak of generalities, you of particulars; the rule that numerous stools belong to infancy and youth, less numerous to middle age, and the least numerous to advanced age, is a rule only applicable generally to the periods of life, not to individual cases; inasmuch as causes, similar to those which produce a certain general frequency of stools at different periods of life, may operate on an individual, so as to make his stools differ in frequency from those of other individuals at the same period, and even to produce

a considerable difference in the frequency of his own stools during different portions of one and the same period. Thus, an individual at the middle period of life may have stools as numerous as those of an infant or a growing youth, if he happen naturally to have easily excitable bowels, or if by means of a fuller diet he forms a larger quantity of excrement than usual, while at the same time, by frequently varying his food and using active exercise, he supplies a more than ordinary stimulus for its expulsion. On the other hand, this very individual may have his stools as few and scanty as those of a person advanced in age, if he lead a very inactive life, and if his food be small in quantity, but little varied, and of a kind that but feebly stimulates the intestines. When, in any individual, there is a concurrence of all the causes which render the stools numerous—viz., youth, stimulating and varied food, active exercise, and excitable bowels, the number of stools consistent with good health is at a maximum: this maximum may be estimated at two, perhaps three, in the day. On the other hand, the number of stools is at a minimum, when all the causes which diminish their frequency occur together—viz., scanty, unvaried and slightly stimulating diet, old age, and bowels which are naturally but little excitable; this minimum may perhaps be estimated at one in a fortnight. Good health is compatible with any number of stools between these two extremes. Again, good health is compatible with stools of every shade of colour, from bright yellow or orange to dark green, dark olive, or even black, and with every degree of consistence, from that of custard pudding to that of the hard pellets of sheep's or goat's dung. The general principle is, that those persons in whom the processes of digestion and nutrition are active, and consequently the digestive juices abundant, and in whom the bowels, being easily excitable, retain the excrement but a short time, have stools of the lighter colours and less consistence; while those in whom the nutritive process is carried on more slowly, whose bowels are more indolent and retain the excrement longer, have stools of the darker colours and firmer consistence; and accordingly we find that those who have the lighter coloured and less consistent stools, are the very persons whom I have already described as having the more frequent

and copious stools—viz., the young, particularly infants and children, and among adults those who use active exercise and a copious and varied diet; whilst those whose stools are hard and dark coloured, are the very persons whom I have described as having the less frequent stools—viz., those who are considerably advanced in years, who live inactive, sedentary lives, and take but little nourishment, and that generally of one uniform kind; and in further illustration of the same principle, we find that whatever causes artificially a movement in the bowels, whether it be medicine, or exercise, or change of diet, causes the stools to become not only more numerous and copious, but at the same time lighter coloured and less consistent; and that whatever confines the bowels renders the stools not only fewer and less copious, but also harder and darker coloured. I have now shown you that your opinion, that it is necessary to good health that the stools should be brought by the aid of purgatives to agree with a certain assumed standard, either with respect to frequency, or colour, or consistence, is opposed—*First*, by your own experience of the utter futility of all attempts to render your bowels more regular by the aid of purgative medicines. *Secondly*, by my medical experience of the same fact with respect to other persons. *Thirdly*, by my medical experience that such attempts are not only futile but ruinous to the health. *Fourthly*, by my medical experience of the great variety that obtains in the stools of healthy persons, both with respect to their number, colour, and consistence; or if I may so say, by my medical experience of the non-existence of a fixed standard for the stools. *Fifthly*, by the principles of physiology, which show that the stools of healthy persons must of necessity vary, and cannot by possibility be reduced to a fixed standard.

Patient. There is yet one ground for my opinion which you have left untouched; you will excuse me; the opinion is so generally entertained, not only by well informed persons outside the pale of your profession, but by medical men themselves, that I can with difficulty bring myself to think that it has no foundation in truth.

Physician. The prevalence of an opinion cannot be admitted as an argument for its truth. On the contrary, in

matters, which, like the subject of the present discussion, are not susceptible of rigid mathematical demonstration, and on which, therefore, a difference of opinion may exist, the prevalent opinion is for several reasons likely to be incorrect.

First. Because in this, as in other cases where there are several ways of going wrong, and only one way of going right, it is more probable that some one of the numerous wrong ways will be selected, than the single right one; and accordingly it is found by experience that the first generally adopted opinion, upon almost any subject which involves a little difficulty, is erroneous, and that it is only after a long time and much discussion, and the alternate adoption and rejection of several erroneous opinions, that Truth is at last discovered, where she lies concealed, or, as it is said, at the bottom of a well. *Secondly.* The public or prevalent opinion is apt to be erroneous, because Error being showy, forward, and plausible, attracts many followers, while Truth, on account of her unobtrusive simplicity, is neglected or despised. *Thirdly.* The public opinion is apt to be erroneous on account of the great number of persons of wealth, influence, and intelligence, many of them associated together and rendered powerful by charters and acts of parliament, who are continually and actively employed in opposing the progress of new opinions, and either ignorantly or designedly maintaining those ancient errors, from which, directly or indirectly, they derive their wealth and power, and in which, therefore, they may be said to have a vested interest. For all these reasons, it is in the highest degree unsafe, as well as unphilosophical, to admit the prevalence of an opinion as an argument for its truth, especially if it can be shown, as I think I have shown with respect to the opinion in question, that it is contradicted, not only by the principles of physiology, but by extensive medical experience.

Patient. I fear that I am in the position of the vanquished disputant, who, unable any longer to defend his opinion, takes shelter behind the protecting shield of those who hold the same opinion as himself; driven from this, my last refuge, I can contend with you no longer; I am conquered, and must yield.

Physician. I wish to convince, not to conquer; to instruct

and benefit a patient, not to gain an inglorious victory over an adversary, who meets me upon my own ground, and at great disadvantage.

Patient. I will not deny, then, that there is yet one point upon which I am not quite satisfied; although the prevalence of the purging system is not to be admitted as evidence of its truth, still I cannot but think that there must be some good reason for the great popularity of that system, some better reason than the mere plausibility of error.

Physician. There are, unfortunately, but too many reasons for the popularity of purgative medicines. The *first* and principal is the immediate, although, as we have already seen, temporary and deceitful, relief which they afford from the almost intolerable uneasiness attendant on disorders of the digestive organs; for the sake of this relief they are, and always will be, much used by those who either do not know, or do not care, at what expense to their health they purchase the delusive aid of those medicines. Further, as the disorders of the digestive organs, which derive temporary benefit from purging, always increase in proportion to the increase of luxury, the practice of purging must increase in nearly the same proportion; we need not, therefore, wonder that the British nation, which is now the richest and most luxurious, and therefore the most bilious, should be also, as it is well known to be, the most purging nation in the world. Still further, purgatives, themselves the offspring of luxurious habits, cherish and promote those habits in return, because persons, who are inclined to indulge themselves, can hardly fail to do so the more frequently and unreservedly, while they believe that they possess in purgatives a sure remedy for their excesses; there is even reason to fear that such persons not unfrequently use their favorite blue pill and Gregory's powder, as the luxurious Romans used emetics, not so much for the purpose of setting the stomach and bowels right after the excesses of last night, as for the purpose of preparing them for those of to-night. The *second* great cause of the frequent use made of purgative medicines, is the generally received, but, as I have already shown you, very erroneous and unfounded opinion, that inflammation of the bowels is a common result of costiveness. You may recollect

that you entertained this opinion yourself, and that even at times when your costiveness gave you no other inconvenience, you took opening medicines from your dread that it might induce inflammation.

Patient. Yes; that vain terror hanging over me kept me constantly in a state of alarm; should I derive no other advantage from this consultation, I shall always feel grateful to you for having entirely dispelled from my mind that painful and groundless apprehension.

Physician. The two causes I have mentioned might, perhaps, be considered sufficient to account for the favorable opinion which most persons entertain of an open state of the bowels and of the frequent use of opening medicines; there are, however, some additional circumstances which may serve still further to explain the extraordinary credit and popularity of this opinion. And *first*, the opinion being an old one, as evidenced by the ancient maxim, "feet warm, head cool, belly open," and being also supposed to be of great consequence not only to the health but to the very existence, was handed down as a golden rule, the truth of which was not to be questioned, from parents and nurses to the children of succeeding generations, and these increasing in a geometrical ratio, the adherents of the doctrine could hardly fail to increase in nearly the same proportion. *Next*, Mr. Locke, in his celebrated Essay on Education, laid it down as a fundamental rule for the preservation of health, that there should be a motion of the bowels every day; disapproving, as he did, of the frequent use of medicine, he recommended as a means of obtaining a daily motion, that a visit should be paid to the water-closet every day at a certain hour, whether nature called or not, thus endeavouring to bring the principle of habit to aid in establishing a regular daily evacuation. The great authority of Mr. Locke's name recommended his opinion on this subject to the numerous readers of his writings; or, in other words, to almost all well educated men, who the more readily adopted his opinion without investigation, because he had been educated and had even practised as a physician. But the means which Mr. Locke recommended for obtaining a daily evacuation of the bowels proving quite insufficient, those who thought, along with

him, that a daily evacuation was necessary, were compelled to have recourse to the ordinary means of obtaining it—the use of purgative medicines. Thus did Mr. Locke, indirectly and contrary to his own intention, contribute to extend the purging system, not only among the well educated, but by necessary consequence among the other classes of society, amongst whom the opinions and practice of the well educated always spread in continually enlarging circles—circles which continue to enlarge and spread long after the opinions and practice have been abandoned by those with whom they originated; just as in a sheet of water, the circles formed by a pebble thrown into it continue to enlarge and spread long after the point at the centre has returned to a state of rest, or has originated a new motion.

Patient. I can bear witness to the inefficacy of the expedient recommended by Mr. Locke; at least in my case it had not the effect of rendering my bowels in the slightest degree more regular, although I practised it for several years.

Physician. Mr. Locke's expedient might, perhaps, be tolerated if it were only useless, but, unfortunately, it is worse. The daily visit to the water-closet when there is no call of nature leads to straining for the purpose of effecting an evacuation, and this straining when long continued is apt to bring on either a rupture or piles, or some other disease of the parts immediately concerned, while, at the same time, it tends to produce a fulness of blood, and sometimes even the bursting of a blood-vessel in the head or lungs. Useless, however, and injurious as was this practice, the recommendation of Mr. Locke caused it to be adopted by great numbers of persons, all, or the majority of whom, along with the practice, adopted also, as a matter of course, the principle on which the practice was founded. From the operation of this cause, combined with that of the other causes I have already enumerated, the doctrine that a daily evacuation of the bowels is essential to good health, had already gained considerable currency, when, about the commencement of the present century, the ingenious and eccentric Mr. Abernethy published his *Treatise on the Constitutional Origin and Treatment of Local Diseases*—

Patient. You have anticipated me in mentioning that

work; it fell into my hands several years ago, and first produced upon my mind that deep impression of the necessity for purgative medicine, which it in some degree retains, notwithstanding all the arguments which you have urged with so much kindness and patience.

Physician. The object of Mr. Abernethy's treatise was to prove that almost all, if not all, the diseases to which any part of the human frame is liable, arise from disorder of the digestive organs, and are to be cured solely by rectifying that disorder. It is obvious that, before this theory could be established, it was necessary to show that the digestive organs are generally in a disordered state in those persons who are affected with local diseases, for which purpose nothing could be more convenient than the already fashionable doctrine that a daily evacuation of the bowels is necessary to the health, and that every deviation from that rule is evidence of a disordered state of the digestive organs. This doctrine was most convenient to Mr. Abernethy's purpose, because there were few, if any, individuals the state of whose bowels accorded with the rule; and if there were any such, it was easy to exclude them by annexing to the rule, as he actually did, the condition that the required daily evacuation should also be of a certain colour and consistence. By thus assuming a standard of healthy digestion, with which it was impossible for the digestion of any individual to agree, Mr. Abernethy was enabled to prove at pleasure the disordered state of the digestive organs of all those affected with local diseases. This first step being gained, he found but little difficulty in advancing the next, and persuading his patients, and no doubt himself also, that the best method of curing those diseases consisted in bringing the stomach and bowels to the normal state by means of blue pill and other purgatives, the blue pill being used alone if the stools were deficient only in colour and consistence, and other more active purgatives being added if they were deficient also in frequency. These medicines seldom failed to produce, at least during the time the patient was using them, the required changes in the colour, consistence, and frequency of the stools. It was not, therefore, unnatural for the patient, who saw that the very changes which had been required, and even foretold by the physician,

took place under the use of his medicines, and who at the same time actually experienced the temporary relief which purgatives always afford, and who besides could scarcely be without some prejudice in favour of the fashionable doctrine of the necessity for frequent evacuations of the bowels; it was not unnatural for the patient, under such circumstances, to form a high estimate of the efficacy of blue pill and other purgatives to cure, not only local diseases, but those disordered states of the digestive organs, commonly denominated nervous and bilious, and from which, according to the theory, local diseases arise. Thus, on the one hand, Mr. Abernethy found a ready foundation for his theory of the origin and treatment of local diseases in the popular doctrine that an open state of the bowels is indispensable to good health, whilst, on the other hand, this doctrine derived additional popularity from the éclat of the new theory grafted on it by Mr. Abernethy. The fame of that theory became every day greater and greater; it was simple and easy to be understood, and was besides applicable, not only to all kinds of diseases, but to every individual person, because, if the theory were true, there was no person whose digestive organs were not in a disordered state; as soon, therefore, as it attracted attention, it could not fail to spread, and it spread with a continually increasing velocity, because it was not, like many theories, a mere matter of speculation, but wherever it found an adherent, found also in that adherent a subject and a proof. All, therefore, were patients of Mr. Abernethy; not the sick alone, but the healthy—every one the state of whose digestive organs did not exactly accord with the rule. Those who could afford the expense of the journey visited Mr. Abernethy at London, and were invariably informed by him that they would find their cases described in his book, and that, in order to obtain a cure, they had only to adopt the remedies therein prescribed. This advice, which seemed almost oracular, as it was given on a single glance, and without inquiry into the particular circumstances of the respective cases, and which was besides rendered impressive by the very eccentric manner of the adviser, was not without its use to the patients, who were benefited, sometimes perhaps by the medicines, but oftener by the stimulus of hope, by the change of air and

diet, and by the exercise and recreation of the journey. They returned home, loud in their praises of Mr. Abernethy and of the purging system; and their friends, who could not afford the expense of a journey to the metropolis, read Mr. Abernethy's book, and purged themselves at home. In the mean time other physicians followed in the track of Mr. Abernethy; some convinced by his reasoning, some stimulated by the expectation of reaping a similar harvest, the greater number hurried away by the fashion and the prevailing rage for opening medicine, until at last the purging system became so general that, long before the death of Mr. Abernethy, it was the almost invariable practice of every physician to inquire of every patient whether his bowels were open daily; and if, as usually happened, the answer was in the negative, immediately to prescribe purgatives, and to accompany them with a solemn warning to the patient, as he valued his health and life, never to allow the second day to pass without, in some way or other, obtaining a passage in the bowels. Independently of the example of Mr. Abernethy, the great facility of this mode of practice recommended it to the medical practitioner; under this system, a careful and laborious investigation into the particular circumstances of each case was no longer necessary; well prepared with his purgatives, the physician was ready for every case which might occur; if he understood the case, he gave purgatives, because he was convinced that they were required; if he did not understand the case, or had not leisure, or inclination, or ability to investigate it, he still gave purgatives; and thus, if he did not cure, he at least purged the patient, and so avoided the appearance of not knowing what should be done, and of standing an idle and inactive spectator of the progress of the disease. Thus were purgatives at one and the same time the offensive and the defensive armour of the physician; the keen weapons with which he combated all diseases, and the secure coat of mail which covered his own ignorance, incapacity, or inattention. The practice of physicians to prescribe and recommend opening medicines, and the general use made of them by the public, produced, of course, a great demand for medicines of this class; the manufacture and sale of purgatives, therefore, became a profitable employment, and

was carried on extensively by great numbers of persons, who, deriving large incomes from the sale of their medicines, took infinite pains, by means of advertisements in all the newspapers and periodicals, and by agents in almost every town in the empire, to give notoriety and celebrity to their nostrums, and at the same time to keep up the credit of the purging system, on which the sale of their drugs, and of course their revenues, entirely depended. Thus did the demand for purgatives produce a large class of persons who subsisted by their manufacture and sale, and these persons, in order to maintain and improve their trade, used every exertion to propagate the opinion, not merely that purgatives cure all diseases, but that an habitually open state of the bowels is indispensable to the enjoyment of health.

Patient. You will excuse me if I interrupt you for a moment. I shall not say one word in defence of quacks, or of the medicines which they recommend; both are alike offensive to common sense and common honesty; but I confess that I feel surprised at the terms in which you just now spoke of your brethren of the profession. I cannot, without some difficulty, bring myself to think that there are regularly educated physicians so ignorant or so dishonest as to make a practice of prescribing useless or injurious medicines; it is only the quack who is capable of such conduct, and to him alone, not to the regularly educated physician, is your severe language applicable.

Physician. There are ignorant and dishonest persons in the medical profession, as there are in every profession, and in every sphere of life; it is not the possession of a medical degree, but honesty and medical skill, which truly constitute a physician; he whom you call a quack because he is without a degree, is truly a physician if he is honest and skilful; while he whom you dignify with the name of physician, is no more than a quack if he is dishonest or unskilful—a quack, too, whom his degree renders only the more dangerous, because he is the more trusted on account of it. If I have used severe terms, it has been solely with reference to such dishonest or unskilful persons, not by any means with reference to the numerous well informed physicians whose labours are alike honourable to themselves and useful to society.

But to return to the causes of the popularity of purgatives; another of those causes, and the last which I shall mention, is to be found in the purging spas; for those who were bilious and nervous, only because they were rich and luxurious, returning with greatly improved health from their annual migrations to those spas, the improvement was ascribed not to its true cause—early hours, temperate living, change of air and scene, and regular daily exercise—but solely to the operation of the waters. The reputation of the waters, therefore, soon became so great, that quantities of them were bottled and exported for the use of those who could not afford to visit their native sources; and not long afterwards, as the waters themselves were inconvenient for exportation, and, therefore, expensive at a distance from the springs, the salts were extracted from them, and sold dry, by which means it was put within the power of every one to manufacture the purging springs for his own use, merely by the addition of a little water to the dry salts. Hence arose a greater demand for the dry salts than could be supplied by all the purging springs in the world—a deficiency which was soon more than compensated by the chemists, who not only discovered processes for making the several salts without the aid of the water of the springs, but actually succeeded in manufacturing Epsom salt, on a large scale, and by a cheap process, from common sea water. Thus the purging spas not only extended the credit of the purging system, but facilitated the practice of that system, by introducing into general use a new class of cheap and active purgatives. I have now enumerated the various causes which have co-operated to produce the modern system of purging; you will find, on reflection, that they afford a satisfactory explanation of the extraordinary credit and popularity of that system—an explanation which we seek in vain in the gratuitous assumption of the truth of the system.

Patient. Your explanation is quite satisfactory. I have no longer any doubt of the correctness of the principle you have laid down, and shall from henceforward renounce the use of purgatives altogether. I have the less difficulty in coming to this determination as you have not forbidden the use of lavements, and I can, therefore, at any time by their

means quicken the action of the bowels as much as may be necessary. You will correct me if I err in inferring from your silence on the subject that you do not disapprove of the use of lavements.

Physician. I made no special mention of lavements, because I supposed them to be included under the general term purgatives. A lavement is neither more nor less than a purgative which has a certain peculiarity of action arising from its peculiar mode of application. Opening medicine taken in this form is taken for the same purpose, on the same principle, and operates in all essential respects in the same manner, as opening medicine taken by the mouth; it is, therefore, liable to the same objections, except so far as its operation is modified by the peculiar manner in which the lavement is applied.

Patient. There must be some considerable difference, for I have always observed that opening medicine taken in the form of a lavement does not produce so much sickness at the time, nor so much weakness afterwards, as the same medicine when taken by the mouth.

Physician. Your observation is correct. The medicine in a lavement not being applied to the stomach and upper parts of the bowels, produces less disturbance of those parts than when directly applied to them. There is less sickness and less griping, the evacuations are less copious and less watery, and there is, of course, less consequent debility. The difference, however, is only in degree, because the nature of the intestinal tube is such that impressions made upon one part are felt by all the other parts, even the most remote. For this reason the stomach and upper part of the bowels always participate in the impression which a purgative injection makes upon the lower part, sometimes even so much that the whole canal is emptied as effectually as if the purgative had been taken by the mouth. As the impression made upon the lower parts by the stimulus of the injection becomes weaker by repetition, the participation of the upper parts becomes of course less, but it does not and cannot cease altogether, and the stomach and upper part of the bowels continue to be affected in a greater or less degree every time that a purgative injection is taken. But even if this were

not the fact, and if the stomach and upper parts of the intestinal canal were not at all affected by the operation of a lavement, its superiority in this respect over opening medicine taken by the mouth would be more than counterbalanced by its greater inconvenience, its more disgusting nature, its stronger disposition to produce piles, and its direct tendency to injure the bladder, and in females the uterus. But suppose the use of lavements to be unattended by any of those evils, suppose that it is neither inconvenient nor disgusting, that it does not encourage the growth of piles, injure the bladder or uterus, nor in the smallest degree disturb the functions of the stomach and upper part of the intestines, there still remains the paramount objection that, by the use of these artificial stimulants, the bowels are rendered less susceptible of the impressions made by their natural stimulant, the excrement; or, in other words, are rendered more costive, and thus a real and severe disease is produced by the operation of remedies applied to cure one which is wholly imaginary, or which, if it exists at all, cannot be cured except by remedies of a directly opposite kind.

Patient. You have proved your case as regards lavements composed of purgative ingredients; I must admit that it is no more than reasonable to suppose that purgative medicines operate nearly in the same way, and are liable to nearly the same objections, when they are taken in the form of lavements as when they are taken by the mouth; but you will hardly urge the same objections against lavements which contain no purgative ingredient whatever, and which, consisting only of tepid water or milk, are limited in their operation to the mere washing out of the intestine.

Physician. You take a very incorrect view of such injections when you suppose that their operation consists in washing out or mechanically cleansing the intestine. If such injections did not so stimulate the bowel as to cause it to contract, they would not only fail to produce the evacuation of the excrement, but would themselves remain shut up in the bowel because the sphincter muscle keeps the orifice of the bowel firmly closed, and effectually prevents whatever is inside from passing out until such time as the bowel contracts; then and not till then does the sphincter yield and

allow the contents of the bowel to be expelled by its contraction. It makes no essential difference whether that contraction is produced by the quality of the injection—as when it contains castor oil—or by the mere quantity of the injection—as when it consists solely of water or milk—if the contraction be not produced, the lavement does not operate at all, and if the contraction be produced, the lavement operates as a purgative, and is liable to all the objections which apply to purgative lavements.

Patient. You need say no more upon the subject; I am quite convinced, and now at last clearly perceive how erroneous my medical opinions have been, and how injurious the practice to which they led; I feel greatly indebted to you for the trouble you have taken, but have still a favour to beg of you; you have satisfied me that I have been pursuing a wrong path, you must not leave me until you have put me upon the right one. As I am henceforth to make no use either of purgatives or of lavements, it remains for you to tell me upon what kind of medicine I am to depend for the recovery and preservation of my health.

Physician. You still rely entirely upon medicine, and only transfer your confidence from one kind to another, forgetting that I informed you, soon after you entered the room, that your disease is one of those which cannot be cured by any medicine whatever; having then proposed to effect your cure by the regulation of your diet and regimen, and by the substitution of wholesome for unwholesome habits of living, I shall now more fully explain to you my meaning. Shortly after eating, you feel a sense of weight and oppression exactly where the stomach is situated; you are conscious that something is going on wrong there; you bring up acid liquor, or wind, or mouthfuls of half digested food; these all coming from the stomach afford sufficient evidence that your food and it do not agree, that your stomach is unable properly to digest the food you have put into it. It is plain that the fault is not in the kind or quality of the food, because, as you just now told me, you have the same symptoms, only differing in degree, no matter of what kind or of what quality the food may have been. As the fault is not in the quality, it must be in the quantity of the food as compared with the powers of

the stomach; but your stomach was formerly able to digest this quantity without inconvenience; let us try if we can explain the reason of the change, or why it happens that you cannot now digest the same quantity of food which, some ten or twenty years ago, you digested with the greatest ease. *First*, then, when you arrived at the full maturity of growth, and still more when you passed that period, as there were no new parts to be formed, there was necessarily less demand for nutriment than when you were in the prime of youth, and still growing; there was, therefore, less appetite for food, and less power in the stomach to digest it. *Secondly*. The season of youth being past, your habits became more sedentary; you spent more time in the house, and less in the open air, and took less active bodily exercise. This change of habit caused a still further diminution of the demand for nutriment, and, of course, of the appetite for food, and a corresponding diminution of the capacity of the stomach for digestion. *Thirdly*. Along with mature age came care, the various anxieties, and troubles, and disappointments of life, all of which affect the stomach, and greatly diminish its powers of digestion—a fact which is familiar to every one, and of which novelists and dramatic writers have made frequent use; thus, Henry the Eighth to Wolsey, in Shakespeare's play of "King Henry the Eighth"—

—Read o'er this;
And after, this; and then to breakfast, with
What appetite you may.

Fourthly. The love of ease, and the power to indulge it, increased with years; you dined late in order that your business might be completely over before dinner, and that you might pass the whole evening at your ease; your dinner, which you had formerly regarded solely as a means of appeasing or preventing hunger, and of supporting the strength of your body, came to be regarded as a gratification of the palate, and, instead of eating less in proportion to your diminished appetite and diminished powers of digestion, you eat even more than formerly; this produced a feeling of oppression after dinner, nature's warning that you had eaten too much, and that you should not continue to do so with impunity; you misunderstood her warning, and thought that the oppression

arose from the want of stimulants; you seasoned your food more highly, and began to take wine or punch after dinner, or, if you had been accustomed to the use of those liquors, you now used them more freely and more regularly. By these means your stomach was stimulated to increased exertions, and you no longer felt oppressed after dinner; or, if the oppression did at any time return, either from your exceeding your usual quantity, or from your partaking of something rather less digestible than usual, you had a certain remedy at hand in a glass of cordial, or one or two additional glasses of wine. In this way matters went on pretty smoothly for some time, perhaps for some years, the stomach all the while becoming weaker and weaker from the very exertions which the stimulants called forth, just as a weak horse becomes exhausted by his own efforts when over-spurred. At last even stimulants failed to rouse your stomach into action; the oppression came on after breakfast as well as after dinner; after simple scarcely less than after rich food; your stomach and bowels were distended with wind; mouthfuls of food came up, half digested, and mixed with sour water; you had restless nights, morning head-aches, and, what was more intolerable than all, your spirits were oppressed with a load which you were unable to shake off; you sought the advice of a physician; he pronounced you bilious, and prescribed purgatives; you followed his advice; with how little advantage, your visit to me this day sufficiently proves. You have now no longer any doubt that those so called remedies are useless—worse than useless; you have resolved to abandon them, and have thus advanced the first step towards recovery—the first indispensable step, but not the only one which is required; you have yet to advance another step before your recovery is complete.

Patient. You mean that I should take air and exercise.

Physician. You are perfectly right; I mean that you should take exercise in the open air. Your symptoms having arisen from the inability of your stomach properly to digest your food, and air and exercise affording the natural, and certain, and well known means of strengthening the stomach and increasing its digestive power, it follows that if your stomach is not, as I believe it is not, already injured beyond recovery,

and if you are careful not to injure it in future, you have only to take sufficient exercise in the open air, in order to render your stomach equal to the digestion of your food, and so obtain the perfect recovery of your health. You have for many years lived an anxious, sedentary life; you have passed much of your time in close, badly ventilated apartments, and have taken but little exercise or healthful recreation; you must change your habits in all these particulars; you must give less time to business and sedentary occupations, and more time to exercise and recreation in the open air. If your circumstances do not permit you to ride, or hunt, or shoot, or course, you can at least afford some time for quick walking; if the middle of the day is engaged, you can rise early and walk before breakfast; or if that time also is devoted to business, you can take an hour's walk at night, just before bed-time, a practice quite free from danger to those who have not delicate lungs, and which has the advantage of warming the skin, and particularly the feet, before going to bed, and of composing and refreshing the mind after the fatigues and business of the day. This is a frequent practice of my own, and I have constantly observed not only that I fall asleep more quickly, but that I sleep more soundly after it; I do not allow even a wet night to interrupt this practice; but if you are too timid to go out at night in bad weather, you can practise dancing, or fencing, or sparring, or some other gymnastic exercise at home, or you can play with young people or children at some of their cheerful games, or you can read for an hour in a loud voice—an exercise celebrated even among the Romans for the cure of bilious diseases, but most unaccountably neglected in modern times, although it has the effect not only of strengthening the stomach, and assisting the action of the bowels, but also of bracing the chest and lungs, and improving the organs of voice and articulation, while, at the same time, it affords you an opportunity of directly cultivating the mind itself. I hardly know a more useful exercise, training and strengthening, as it does at one and the same time, both mind and body, and giving a command over the muscles of respiration, enunciation, and articulation, which is valuable to every one, but more particularly to those whose profession calls upon them to speak in public. Having myself practised this exercise to a

very considerable extent when a student at the university, I have had ample experience of its power to counteract the noxious influences of close confinement and sedentary occupation; and I have since remarked that those parts of the academic course which I thus read aloud are the parts which present themselves to my memory with the greatest freshness. Besides these exercises, which are particularly suited for bad weather, there are also the exercises of bathing or swimming, which if you practise, you should remember to walk from the bath, if not to it also; then you might make excursions into the country, or join a party going to travel either in England or Scotland, or on the Continent.

Patient. Your advice is excellent, but not so easily followed; my business is not only of a sedentary nature, but so engrossing as to leave me little leisure either for exercise or amusement; and even if I had the leisure, I fear that I have not sufficient spirits or energy to employ it as you desire.

Physician. I do not propose that you should use all the kinds of exercise which I have mentioned, or that you should sacrifice every thing to the improvement of your stomach; but you must at least do something to counteract the bad effects of close air, sedentary occupation, and anxiety of mind. Some one or more of the exercises and recreations which I have enumerated will be found practicable, and suited to your taste and disposition. There are but few who cannot take an hour from business either in the evening or morning. It is said, and I believe with a good deal of truth, that a man can always find some time for what he is fond of; and I have frequently observed that men who were much engrossed by serious business, could yet contrive to visit a race-course regularly, and even to spend whole days there; or could devote an hour or two hours to dinner, which seldom occupies me more than fifteen minutes; or could afford a reasonable share of time to music, or to politics, or to clubs, or to the theatre, or to light reading, or to literature, or, in short, to any thing to which they were strongly inclined by the natural bent of their disposition. If, however, you are unfortunately so circumstanced that you cannot, or will not, put into practice any of the measures which I have mentioned, there is yet another method to which you may have recourse, and from

which I can promise you very considerable benefit—a method, too, which is perfectly in your own power, and which does not involve any sacrifice of time or any expense.

Patient. You have only to tell me what it is, and I shall adopt it instantly. I am ready to do any thing which does not require me to leave or neglect my business.

Physician. As you find it impracticable to take those measures which are necessary to render your stomach equal to the work which it has to do, give it less work; do with it as you do with a weak horse; when you cannot strengthen the horse so as to render him equal to the work, you diminish the work so as to render it equal to the strength of the horse; do the same with your stomach.

Patient. You are mistaken if you suppose that I eat too much; I assure you that there are few who do not eat more heartily than I do.

Physician. You cannot take the stomach of another person as a measure for your own. The powers of the stomach differ as much in different individuals as the powers of other organs; one man will lift two hundred weight with ease, it will distress another to lift two stone; one man will walk twenty, or thirty, or forty, or even fifty miles in a day; another will be fatigued by walking five; one man will see at the distance of several yards a minute object, which another will scarcely be able to distinguish at the distance of as many inches; so it is with the stomach; one man will be filled, even to repletion, by a quantity of food scarcely sufficient to satisfy the cravings of another man's hunger. There is no rule so good, or so general in its application, as the feeling of the stomach itself; if, after a meal, you are light and cheerful, and without flatulence or acidity, you have not eaten too much; if, on the contrary, you are oppressed or flatulent, you have erred either in the quantity or quality of the food taken. We have seen that in your case the error is not in the quality, because the symptoms, although mitigated, continue when the quality is changed; the error, therefore, must be in the quantity; in the quantity, considered not absolutely, but relatively to the powers or present state of your stomach. You inform me that circumstances render it difficult for you to use the means necessary to strengthen the stomach; the conclusion is

obvious; you must diminish the quantity of the food. By so doing you will relieve yourself from the bilious symptoms; you will be no longer troubled with flatulence, acidity, and oppression after meals; your tongue will become clean, your spirits light, and your stomach, being no longer required to do more than it is able to do, will gradually improve in tone and temper. But this method, although calculated to cure your bilious symptoms, is still an imperfect method; because your sedentary, anxious, careful life—the original cause of the disorder in your stomach—will still exert its injurious influence, weakening and emaciating your muscles, shattering your nerves, and unfitting your stomach for the digestion of more than the smallest quantity of the plainest food. You will be improved indeed, because your stomach will be able to digest the diminished quantity of food, but this quantity of food being too small to impart full strength and vigor to your frame, you will still be an invalid, although no longer bilious. If you wish your cure to be complete, combine the two methods judiciously together. While your stomach continues weak, give it less work, but in the mean time do not neglect the means necessary to restore its strength. As it grows stronger, it will not only be able to do more work, but its work will be better done; it will digest its food better, and the food digested better will produce stronger muscle, bone, and sinew, by means of which you will be enabled to take an increased quantity of exercise without fatigue; the increased quantity of exercise will produce increased strength of stomach, and the increased strength of stomach, increased strength of muscle, bone, and sinew; and so the improvement will go on in a circle; your bilious symptoms will disappear as if they were charmed away; you will lose the fastidiousness of palate, and capriciousness of appetite, which a disordered stomach always generates; and you will restore to your dietary, with safety and even with advantage, various articles of food which are at present excluded from it; the bloom of health will adorn your cheeks, and vigor of body will accompany and promote vigor of mind and serenity of temper. Now compare the two methods one with the other, the purging method with the method by diet and regimen. Under the former the health is continually growing worse,

under the latter continually improving. The former method is expensive, disagreeable, troublesome, dangerous, debilitates your body, enervates your mind, and fills it with vain fears and apprehensions, especially on the subject of your health, which it teaches you to watch with a feverish anxiety, not far removed from insanity. The latter method is cheap, in as much as it requires neither medical attendance nor medicines; it is also simple, easy, safe, and agreeable; it will not only strengthen your body, but invigorate your mind, and fit it for the exercise of all its nobler faculties. You have tried the former method, tried it in every form and shape, and for almost your whole life; by domestic purgatives, by the prescriptions of physicians, by lavements, by every variety of quack medicine, Gregory's powder, antibilious pills, Hunt's pills, Morrison's pills, yet you are still bilious, as bilious, or even more so, than when you began. The principle on which you have hitherto acted must be false, for you have tried every possible modification of it without success; you have at last resolved to abandon it; go now, adhere to your resolution, and immediately enter upon the new method. I shall be glad to see you at the end of three months, or of six months if you please; if you are not then a healthier and a happier man than you are now, I shall submit to take Gregory's powder and Morrison's pills regularly, and to be a bilious man for the remainder of my days.

Patient. I will put the plan in execution at once, and return after a short time to make my report; in the mean time I beg to assure you that, whether the result of the trial be favorable or unfavorable to your opinions, I shall always remember your kindness with gratitude, and never cease to entertain the highest respect for your profession.

A DIALOGUE

BETWEEN A

BILIOUS PATIENT AND A PHYSICIAN.

PART SECOND.

Physician. I am glad to see you. At first sight I did not know you. You are greatly changed for the better.

Patient. Yes, and I have to thank you for it. I am a new man; you have been the means, under Providence, I will not say of saving my life, but, which is much more, of enabling me to enjoy it. The existence, that was almost a burthen to me, has become delightful; my mind and body are both at ease, and I am able to employ their energies for the advantage of my family, and the good of my fellow creatures; all this happy change has been effected in the short space of three months.

Physician. I need not inquire what you have done; I see it in your air and countenance.

Patient. I followed your advice as closely as possible. I left off the use of purgatives altogether, and have not taken even one single dose since I saw you. You will, perhaps, be surprised when I tell you that my motions have notwithstanding been as numerous as when I followed the purging system. There was, however, a difference in their quality, which at first caused me some uneasiness; they were always hard,

scanty, and dark coloured, and never of the yellow laxative kind. But the uneasiness which I felt on this account was not of long duration, for I soon perceived that I was in better health than I had ever been when my motions were of the opposite character. And I am now thoroughly convinced by my own experience that costive motions, so far from being evidence of a bad state of health, or of a necessity for opening medicine, are in reality the ordinary accompaniment of strength and good health. No bad result followed, even when my bowels remained entirely shut up for several days together; on the contrary, I felt strong and well all the time; and they never failed soon to come round again, either of their own accord, or from increased exercise, or some little change in diet; if they had not done so, I would have called on you to inquire what should be done.

Physician. And I would have advised you to wait a little longer, and if the confinement of the bowels had still continued, and no symptom of disease arisen, I would have recommended even further delay. At the worst, either colic or spontaneous diarrhoea would have given notice when the time had arrived for the interference of the physician.

Patient. However, the necessity did not arise, as my bowels always came round before the costiveness produced any inconvenience; and it seldom happened that the use of stirabout, or fresh vegetables, or ripe fruit, articles of diet which I had formerly regarded with all the horror of a bilious man, did not speedily produce a change in them. At first I found it necessary to be very cautious as to the quantity of food which I took, but the necessity for this caution became less in proportion as my stomach regained its strength; and I now can eat as heartily as I desire, and of all the usual kinds of food. The nature of my occupations did not permit me to take as much exercise and recreation as I should have wished, but, by a little management, I was enabled to take a great deal more than I had been accustomed to. I read aloud, as you desired, for nearly an hour every morning, and, if prevented by business from taking exercise during the day, I had always my resource in a smart walk before going to bed. If, for the sake of additional recreation and exercise, I sometimes encroached even upon the hours of business, I found by

experience that my business did not lose by it, as my increased strength of body and increased alacrity of mind, enabled me to transact my business not only in a shorter time, but in a more efficient manner. I had also at my disposal, either for business or recreation, the time which was formerly passed in illness, or in taking medicine, or in the necessary confinement after it. On the whole, therefore, I had more time for business, as well as more time for recreation. Even business itself, which had hitherto been so irksome to me, now that my strength was equal to it, became a recreation, and being better done than before, improved in proportion. I have thus, by following your advice, gained in every respect; in health of body and vigor of mind, as well as in worldly circumstances; in each and all of these respects I am a gainer, and, at the same time, your most thankful debtor.

Physician. If there are many disappointments in the practice of my art, there are also some elevated pleasures, not the least of which is the consciousness I at this moment feel that I have been the humble instrument by which a fellow man has been rendered a healthier, and happier, and more useful member of society.

Patient. An apprehension has this moment occurred to me, which I wish to mention to you before we part. Extremes are dangerous, and men are but too prone to run into them. I have suffered so much from the abuse of opening medicine, that I fear I shall now be likely to fall into the contrary extreme, and either neglect or decline to use that kind of medicine at the very time, perhaps, when it is most required.

Physician. You will not be likely to commit that error unless you renounce the guidance of common sense. There are only three cases which can by possibility occur. You will either continue in good health, as you are at present; or you will relapse into your former state of biliousness and nervousness; or some new kind of illness will arise. These three cases comprehend every possible future condition of your health. In the first of these cases—i. e., if your health continues good, as it is at present, purgative medicine cannot be required, because it is only to the state of disease, not to the state of health, that medicines of any kind are applicable. Remember the adage, "*Let well enough alone,*" and remember

also the inscription on the tomb of the Italian physician, "I was well, I would be better, and here I am." In the second of these cases—i. e., if you relapse into your former state of ill health, still purgatives cannot be required, because, having been injurious to you before, they must, under the same circumstances, be injurious to you again, according to the well known principle that similar causes always produce similar effects. There is, therefore, only one case in which it is at all possible that purgatives may be required, and that is, if symptoms of new disease arise.

Patient. That is the very case which I apprehend. Unless I am removed by sudden death, new disease will certainly occur sooner or later, and may possibly at this very moment be near at hand. That disease may require purgatives, and yet I may be deterred from using them by your former advice, and by my own past experience of their injurious effects.

Physician. Common sense will prevent you from applying either my former advice or your own former experience to a case of a different kind. The same medicine is at one time useful and at another time injurious, according to the disease in which it is administered. This is the nature of all medicine, and particularly of all purgative medicine, a single dose of which may at one time, and under one set of circumstances, destroy life, and at another time, and under another set of circumstances, afford the only means of saving it. As soon, therefore, as you have sufficiently ascertained that opening medicine is required in the case, you should have recourse to it with as little hesitation as to medicine of any other kind.

Patient. The difficulty is how I am sufficiently to ascertain that such medicine is required. The medical art is, as you must be aware, uncertain, and doctors disagree.

Physician. Absolute certainty is, of course, not to be had in medicine more than in any other department of human art, nor is perfect agreement to be expected amongst medical advisers more than amongst advisers upon any other subject of equal difficulty. If new illness should, as you apprehend, arise, you can have no greater certainty either as to the propriety of using purgatives in the case, or as to its general treatment, than that which is afforded by the advice of one or

more persons of intelligence, honesty and experience in the art of medicine. The degree of certainty so obtained may, indeed, fall far short of absolute certainty, but it will be sufficient for a reasonable man to act upon, and in no respect inferior to the greatest certainty which human advice affords upon any subject of a similar nature.

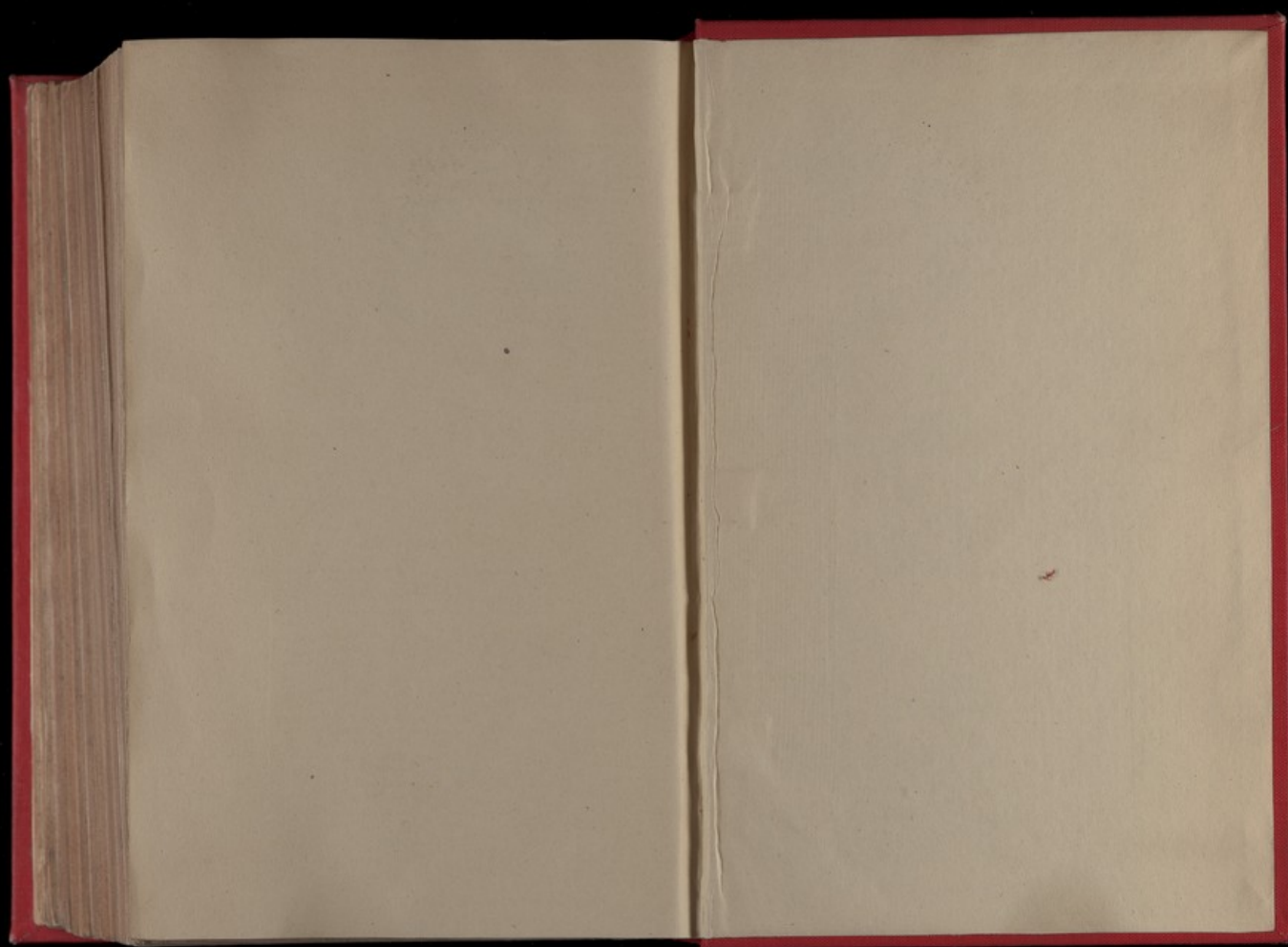
Patient. I feel the truth of what you say, Doctor, and beg once more to thank you for the kindness and patience with which you have listened to my questions and satisfied my doubts, and I now take leave of you, with the hope that if it please Providence at a future time to afflict me with illness, I may again be allowed the assistance of the kind friend to whom I already owe so much. I wish you all happiness: farewell.

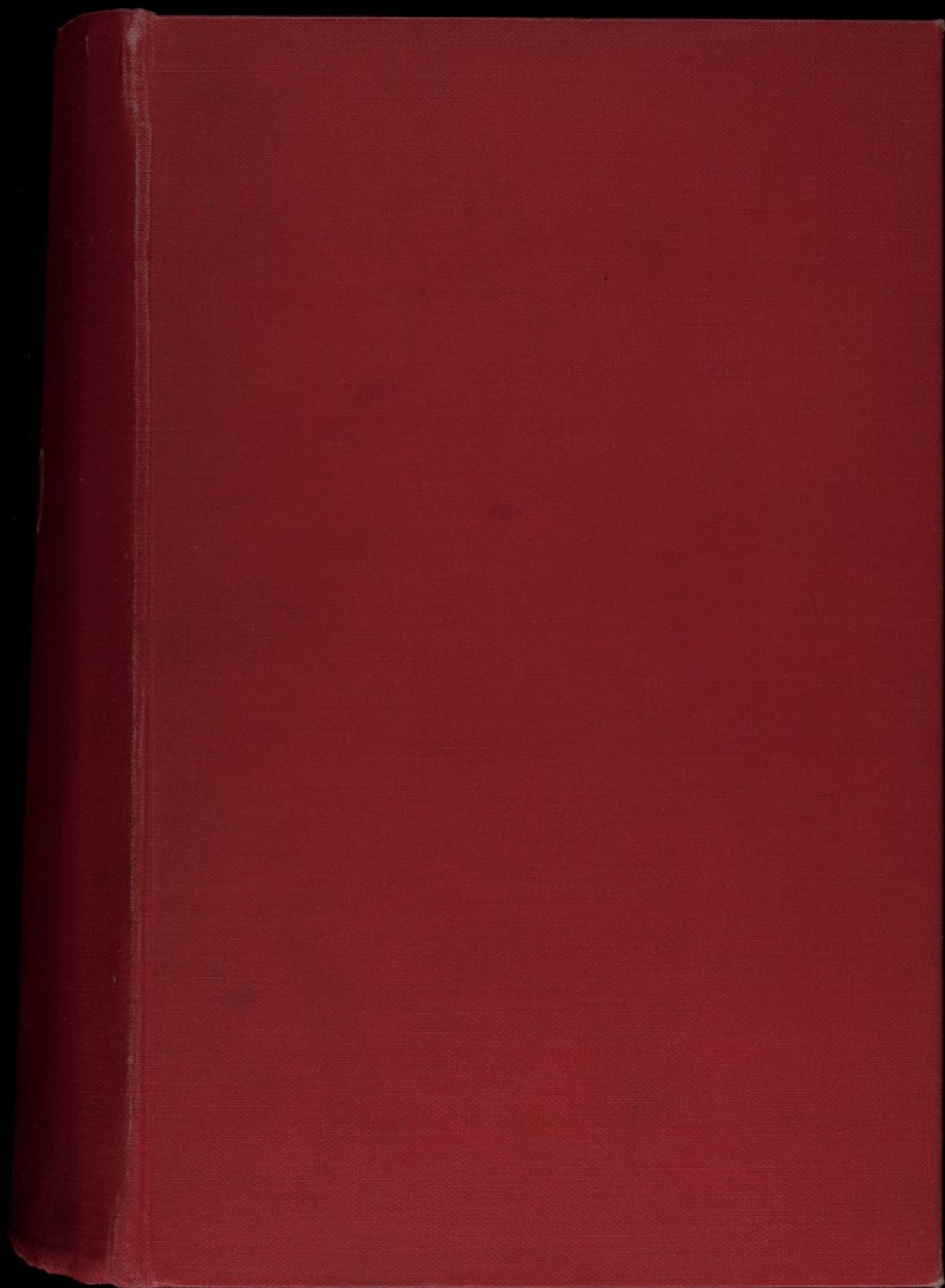
THE END.

COLTHEART. — There is a work mentioned by a person of this name, entitled *The Quacks unmasked*, London, 1727, 8vo. It would be very obliging if a full copy of the title of this book could be furnished, or a very brief notice of what it is about.

J. M.

[The title-page gives the contents of this work: "*The Quacks Unmasked: which detects, and sets in a true Light their Pernicious and Destructive Practice, with some Reasons why, it ought to be entirely abolished. By P. Coltheart, Surgeon. 'Sine me, liber, his in urbem.' Ovid. London, Printed for the Author, and sold by the Booksellers of London and Westminster, 1717.*" The author's protest will not be considered inapposite even at the present time. He says, "The fruits of encouraging such pretenders, whose advertisements fill the daily papers, may be observed from the wretched condition of those patients who have escaped out of their hands with life, and are a sad memento to those who look upon those subjects of their experiments, to be seen in the streets, like so many walking spectres, and whose looks seem to cry aloud, *Beware of Quacks!*"





PAMPHLETS

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