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MASS MEDICAL COLLEGE

# OBSERVATIONS

ON

MASS MEDICAL COLLEGE

# MENTAL DERANGEMENT:

MASS MEDICAL COLLEGE

BEING AN APPLICATION OF THE PRINCIPLES OF PHRENOLOGY TO THE ELUCIDATION OF THE CAUSES, SYMPTOMS, NATURE, AND TREATMENT OF INSANITY.

BY ANDREW COMBE, M. D.

[redacted]

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FIRST AMERICAN EDITION,
WITH NOTES AND BIBLIOGRAPHY,
BY AN AMERICAN PHYSICIAN.

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# ADVERTISEMENT

## *TO THE AMERICAN EDITION.*

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The merit of this work has been acknowledged both in Europe and in this country; and the publishers, in presenting a new edition to the public, feel that they are offering a book calculated to be eminently useful to the physician, and to all who are interested in the condition and improvement of man.

That the reader may judge, in a degree, of its character and value, the following notices are subjoined :

*From the Boston Medical Magazine.*

'To throw away figure, and speak in plain language and sincerity, we have read no production on mental derangement which we consider so valuable as the volume before us; none which unfolds, so much to our satisfaction, the philosophy of the disease, or leads to so rational a mode of preventing and removing it.'

'We have perused Dr. Combe's Treatise on Insanity with the deepest interest, and we can recommend it as one of the very best works that have appeared on the subject. Dr. Combe is a man of great natural talents, much cultivated by deep study; there is nothing loose, vague, or inaccurate, in the texture of his thoughts; he thinks with vigor and clearness, and communicates his own perceptions to the reader in language at once simple, concise, and perspicuous. In conclusion, we can most cordially recommend this work to the notice of our readers. It is, in every respect, excellent, and does Dr. Combe the highest credit.' — *Glasgow Free Press.*

'The clearness and force of reasoning, the cautious dread of overstepping the limits of positive knowledge, and launching into the dark and endless void of metaphysical speculation, together with the precision and *truth-like* simplicity of his views in regard to the symptoms, evidence, and treatment

of mental derangement, arising from their having a basis on natural science instead of metaphysical theory, cannot, we believe, fail to place this foremost in rank, as it is last in publication, of the works devoted to its subject.' — *Liverpool Albion*, 17th January.

'We have much pleasure in announcing the publication of this volume, which, in our opinion, deserves to be ranked among the very best monographs which have lately appeared on any medical subject.' — 'Indeed, we have no hesitation in saying, that it eclipses all the other works written on the subject of insanity; if original and scientific views of his subject, exactness and conciseness in his descriptions, either as regards symptoms or pathological alterations, judicious reflections on the causes of the disease, and a luminous detail of the curative means to be employed, entitle him to this praise.' — *Lancaster Herald*, 22d January.

'Our expectations, though high, seem to have been realized to a very considerable degree in the treatise, of which we are desirous to submit a brief notice to our readers.' — 'Although we will not pledge ourselves to espouse or defend his cause throughout, we readily confess that we never received such a quantum of information, nor such distinct and comprehensive conceptions of insanity, from any other author, treating it under the influence of another philosophical creed.' — *New North Britain*, 29th January.

'Nor are we led to a full notice of this work, so much even on account of its merit as a medical production, as because it contains throughout some very curious information, and sundry anecdotes of an interesting nature, the knowledge of which may furnish our readers with lessons of no small utility in ordinary life.' — *Edinburgh Evening Post*, 5th February.

*Boston, Oct.* 1833.

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# INTRODUCTION.

WHEN yet a student, I joined in the general burst of ridicule with which the phrenological doctrines were received at the time of Dr. SPRUZHEIM's visit to Great Britain, in 1816–17, a piece of conduct which is explained, though far from justified, by the circumstance, that I was then totally unacquainted with their nature and import. My attention was first seriously turned to the examination of these doctrines during my residence at Paris, in the autumn of 1818, when Dr. SPURZHEIM's *Observations sur la Phrenologie*, then just published, were happily put into my hands, at a time when, from there being no lectures in any of the Parisian schools, I had ample leisure to peruse that work deliberately. I had not proceeded far before I became impressed with the acuteness and profundity of many of the author's remarks on the varied phenomena of human nature, and with the simplicity of the principles by which he explained what had previously seemed contradictory and unintelligible; and, in proportion as I advanced, the scrupulousness of statement, sobriety of judgment, and moral earnestness with which he advocated his views, and inculcated their importance, made me begin to apprehend that to condemn without inquiry was not the way to ascertain the truth of Phrenology, or to become qualified to decide in a matter of medicine or of philosophy. I therefore resolved to pause, in order to make myself acquainted with the principles of the new physiology, and to resort, as he recommended, to observation

and experience for the means of verifying or disproving their accuracy, before again hazarding ano pinion on the subject.

In carrying this resolution into effect, int he following winter session, I had the advantage of being able to attend two Courses of Lectures delivered by Dr. SPURZHEIM, at Paris, on the Anatomy, Physiology, and Pathology of the Brain and Nervous System, during one of which rather a striking confirmation of his doctrine occurred. In the middle of the lecture of 1st December, 1818, a brain was handed in, with a request that Dr. SPURZHEIM would say what dispositions it indicated, and he would then be informed how far he was correct. Dr. SPURZHEIM took the brain without any hesitation, and, after premising that the experiment was not a fair one, in as far as he was not made acquainted with the state of health, constitution, or education of the individual, all of which it was essential for him to be aware of before drawing positive inferences; he added, that, nevertheless, he would give an opinion on the supposition that the brain had been a sound one, and endowed with ordinary activity. After which, he proceeded to point out peculiarities of development which it presented, and desired his auditors to remark the unusual size of the cerebellum, or organ of Amativeness, and the great development of the posterior, and of part of the middle lobes of the brain, corresponding to the organs of the lower propensities, the convolutions of which were large and rounded, forming a contrast with the deficient size of the anterior lobes, which are dedicated to the intellectual faculties. The convolutions situated under the vertex, and towards the top of the head, belonging to the organs of Self-Esteem and Firmness were also very large, while those of Veneration and Benevolence were small. These peculiarities were so well marked, thatDr. SPURZHEIM felt no difficulty in inferring that the individual would be very prone to sensual indulgences; that 'his natural tendencies would not be towards virtue;' that he would be what is familiarly expressed in French by '*un mauvais sujet*,' being a

very comprehensive term for every variety of bad dispositions, and that '*he would be one to whom the law would be necessary as a guide;*' but, not knowing the circumstances in which he had been placed, he could not say what his actions might have been.

At the conclusion of the lecture, a young man, an *élève interne* of the Hôtel Dieu, came forward and said, that the brain was that of a *suicide*, who had died in that hospital, and that the dispositions inferred by Dr. SPURZHEIM coincided perfectly with those manifested during life. As I was at the same time following the surgical clinique of the celebrated DUPUYTREN, whose patient he was, and as the case was interesting both in a professional and phrenological point of view, my attention had been particularly directed to this very individual, from the day of his entrance into the Hôtel Dieu, to that of his death, a period of about fourteen days; and I was thus better able to appreciate the perfect accuracy of Dr. SPURZHEIM's conclusions, than if I had merely trusted to the report of the *élève*. The man, it appeared, had been a soldier, and had, for some crime, suffered an ignominious punishment, and been dismissed from the army. He returned to Orleans, to resume his trade of barber, but every one shunned him; and, suspecting his wife to have been secretly his enemy, he attempted to kill her with a knife, and, being defeated in this, he stabbed himself in the side, was carried to the hospital, and died of the wound. As he lay in bed, the head sunk in the pillow, its size seemed to be small; but this arose from the anterior part, or the seat of intellect (which was very deficient) being alone visible, the whole bulk consisting of the organs of the propensities. DUPUYTREN, when commenting on the case, in his lecture, made daily complaints of the man's *mauvais moral, imperiousness, and violence of temper*, and represented these qualities as great obstacles to his recovery. So that, altogether, the close coincidence between the facts with which I was familiar, and the remarks of Dr. SPURZHEIM, who had never seen the skull, and judged from the brain alone, as it lay mis-

shapen on a flat dish, made a deep impression on my mind, as it went far to prove, not only that organic size had a powerful influence on energy of function, but that there actually were differences in different brains, appreciable to the senses, and indicative of diversity of function.*

In continuing the practical observations which I had begun to make on living heads, I met at first with many difficulties, partly from unacquaintance with the local situations of the alleged organs, and with the limits of their respective functions, and partly also from want of experience in observing; and thus, while the general result seemed to be confirmed, many apparent exceptions presented themselves, and gave rise to numerous doubts. In extending my observations, however, for the purpose of substantiating these objections, natural solutions so invariably presented themselves, one after another, in proportion as they were scrutinized, that, after two years' experience, the conviction of the truth of the fundamental principles, and of the correctness of the functions ascribed to many of the larger organs, became irresistible, while I still hesitated in re-

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* While writing the present pages (12th November, 1830,) I was invited to assist at the examination of another suicide, whose brain presented a remarkable resemblance to that of the Frenchman. In most instances of self-destruction, large Cautiousness is found in combination with deficient Hope, and there is a tendency to settled depression or gloomy anticipation of futurity. In the two cases now before us, however, this did not hold, and the deed was apparently the result of disappointed selfishness, having no moral sympathies on which to fall back, and thus generating recklessness rather than despondency. In the recent instance there was an unfavorable combination of powerful Secretiveness, Firmness, Acquisitiveness, and Self-Esteem, with a low moral, and deficient reflection; and, on opening the head, an effusion of whitish serum, and great vascularity of the pia mater, were found at the vertex, in the region corresponding to the organs of Self-Esteem and Firmness, as the centre, and extending laterally to those of Love of Approbation and part of Conscientiousness. These appearances were remarked by several medical gentlemen. The vascularity was not in the least like that from gravitation, and it diminished in proportion as we receded from the vertex, both posteriorly and anteriorly. The act itself, I need hardly add, was the result of disease.

gard to several of the smaller organs, the evidence of which I had not sufficiently examined. Actuated by the natural feeling of improbability that so much should have been discovered in so short time by only two individuals, however eminent their talents and felicitous their opportunities, I still expected to meet with some important errors of detail; and, so far from being disposed to adopt implicitly all the propositions of Drs. GALL and SPURZHEIM, I rather looked for, and expected to find, some hasty conclusions or unsupported assumptions; and my surprise was extreme to discover, that, in the whole extent of their inquiry they had proceeded with so much caution and accuracy, as, in all their *essential* facts and inferences, to have rendered themselves apparently invulnerable.

On finding their statements in regard to the conditions required for the healthy manifestations of mind, thus borne out, and aware that a true physiology of the brain should not only derive confirmation from its morbid phenomena, but that it was, in fact, the only basis on which an intelligible and consistent view of the pathological derangements of the mental faculties, and the means required for their cure, could rest, I resolved not to lose the favorable opportunity of prosecuting the inquiry, which then presented itself in the announcement of a Course of Clinical Lectures on Mental Derangement, at the Hospice de la Salpetrière, by the celebrated ESQUIROL, the friend, pupil, and successor of PINEL. This course I accordingly attended in the spring of 1819, being the first which was given; and, amid the numerous forms of disordered mind, congregated in so large an establishment, I felt great interest in tracing the consistency which still appeared to obtain between the phenomena and the physiological principles unfolded by the founders of the new philosophy. So closely, indeed, did the descriptions of the various forms and transitions of insanity, and the distinctive features of the numerous cases referred to by the Professor in illustration, (the subjects of most of which were then to be seen in the asylum,) correspond with the doctrines which I was engaged in studying, that I

very naturally supposed that M. Esquirol himself must be a phrenologist; and accordingly, in a letter to a friend in Edinburgh, written on my return from one of the lectures, after mentioning where I had been, I added, that on that day the Professor had finished the symptoms attending disorder of the intellectual faculties, and that, though he had made no allusion to Phrenology, yet he proceeded to discuss each separately, apparently, as Dr. Spurzheim himself would have done; and, after referring to some cases of lesion of particular powers, which Phrenology seemed to explain, I concluded by saying, as the result of the whole, that he appeared to lean much to the new views, although he had not spoken of them by name. This remarkable coincidence strengthened the impression already made on me in favor of Phrenology, but still many doubts remained.

Having met Dr. Spurzheim shortly after the letter referred to was despatched, I happened to express to him the gratification I felt in M. Esquirol's Lectures, and my belief that the latter must be a good phrenologist. My surprise, it may be conceived, was very great, when Dr. Spurzheim informed me, that, notwithstanding the remarkable coincidence which I had observed between all the facts and most of the opinions of M. Esquirol and those of Phrenology, the Professor was nevertheless opposed to the new doctrines. Nor was I long left in doubt on this point; for, in some of his subsequent lectures, that gentleman introduced Dr. Gall's opinions, merely to add that he totally differed from them; while every fact which he mentioned, and every case which he quoted, seemed to me to corroborate the fundamental propositions of the very philosophy, which, in the abstract, he unqualifiedly condemned. He mentioned objections, indeed, but these were either entirely founded on misconception, or they were the hackneyed and thread-bare assertions, which the slightest acquaintance with the subject enables every one to solve for himself, and which have already been refuted, times without number, in every country in Europe. He spoke also of instances in which

Drs. GALL and SPURZHEIM had gone wrong in their opinions of individual heads in the asylum, and of which he had preserved casts; but he neither stated precisely in what the errors had consisted, nor did he exhibit the casts; so that he afforded no means of determining whether a mistake had occurred, or, if so, whether the fault lay in the science, or merely in its individual application, in which last, as in chemistry or in natural philosophy, an error may be committed, without affecting the truth of the general law. But, as every observation which he made, and every case which he exhibited, appeared to be in harmony with Phrenology, and nowise to warrant the unfavorable conclusions which M. ESQUIROL had drawn from them, I could not attach very great importance to them as disproving the doctrines I was investigating; and accordingly continued my inquiry.

Feeling, at every step I made in the examination of Dr. GALL's discoveries, a deeper and deeper sense of their importance and practical usefulness, if they should prove to be true, and having made myself sufficiently acquainted with his principles to be able to follow their application, I then entered upon the perusal of Dr. SPURZHEIM's French work, *Sur la Folie*,* with much attention, and with constant reference to the cases and phenomena brought under review, in the wards and lecture-room of the Salpetrière; and, when thus employed, I became still more alive to the value of Phrenology as a branch of Professional knowledge, and lost no opportunity of testing its evidences by a comparison with nature. Shortly after this, viz. in 1820, a treatise, entitled *De la Folie*, made its appearance from the pen of M. GEORGET, and met in many quarters with much commendation, for the precision, consistency, and soundness of its doctrines. This work proved not only to be very ably written, but to be based throughout on the principles of Phrenology, and to be devoted, in its whole

* This admirable work, which was published in 1818, had appeared two years previously in English, under the title of '*Observations on Insanity*;' but I had not seen it.

substance, to the advocation of the same doctrines in regard to mental affections, which, with some slight differences, it was the sole object of that previously published by Dr. SPURZHEIM, to inculcate. Of the latter, however, M. GEORGET made no mention whatever, although he referred to GALL'S writings and lectures, as the sources of many of his ideas; and, so oddly are opinions biassed by preconceived notions, that it is said to have happened that the same critic, who expressed his disrespect for the views as published by the one author, bestowed his approbation upon them as coming from the other. I am uncertain whether this allegation be strictly correct; but I am quite secure in stating, that Dr. SPURZHEIM'S book, although in substance the same, met with a very different reception from that published by Dr. GEORGET.

From M. GEORGET thus openly proclaiming opinions on insanity and on the functions of the brain, coincident at least with those previously published by Dr. SPURZHEIM, it was to be supposed that he had received his professional education, far from the influence, and especially far from the alleged antiphrenological *facts* of M. ESQUIROL; as one would naturally imagine, that, if living within reach of that gentleman, any leaning towards Phrenology would have been instantly counteracted by his opposing evidence; yet it happened curiously enough, that GEORGET was not only in communication with, but that he was actually the friend and pupil of M. ESQUIROL, and, in his capacity of *élève interne*, resided for several years, '*vivant pour ainsi dire continuellement au milieu de douze cents malades*,' in the very hospital in which the other was physician, and spending the greater part of his time in studying and investigating the very cases and facts on which ESQUIROL founded his unbelief! And not only did he there obtain a conviction of the general truth of the phrenological discoveries, but, impressed with their importance to the farther advancement of our professional knowledge of mental diseases, he printed the work referred to, enforcing his conviction on the ground of its being supported by fact, and, with becoming

respect, dedicated it to his illustrious preceptors PINEL and ESQUIROL, who, by the services which they have rendered to science and to humanity, by the unwearied and benevolent exercise of their great talents in the vast field which they have dedicated their lives to cultivate, well merited the tribute.

Encouraged by the flattering reception which GEORGET met with, FALRET,* VOISIN,† and some other able French authors, speedily appeared, inculcating essentially the same views, and with still greater fearlessness, with so much good effect, that a large portion of the younger French writers and physicians now adopt GALL's anatomical and physiological expositions of the brain as equally sound with BELL's and MAGENDIE's expositions of the nerves. Few of them, it is true, are very conversant with the details of Phrenology; but of the fundamental principles, that the brain consists of an aggregate of distinct organs, each having a distinct function, and that power of function is influenced by organic size, they have not a shadow of a doubt. Under the guidance of these principles, a great advance has of late years been making in France, in the study and discrimination of nervous and mental diseases.

In our own country these occurrences have not been without their effect; for it seems to me indubitable, that to Dr. SPURZHEIM's labors and demonstrations, both oral and published, we are more indebted for the remarkable progress made of late years in our acquaintance with the anatomy, physiology and pathology of the brain and nervous system, than most of those who have profited by his researches only at second hand are at all aware of. Many, indeed, whose knowledge has come to them thus indirectly, and who have perhaps derived it through the unsuspected medium of some continental writer, who has adopted, without acknowledging, the phrenological principles, are persons, who, not knowing what Phre-

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* FALRET, De l'Hypochondrie et du Suicide.

† VOISIN, Des Causes Des Maladies Mentales.

nology is, and fancying it to be something extremely absurd and fantastical, positively dread being considered either as advocates of, or believers in, the new views. But the day is not far distant when such individuals may find reason to regret their continued inattention to the subject. While a doubt remains of nature and phrenology being identical, fear of the consequences of avowing belief in it is rational, because belief in error is always hurtful. But, when once a conviction, founded on evidence either of its truth or falsity, is obtained, we possess a shield more than fit to protect us against all the dangers of taking our stand on the result to which such evidence has led us. Acting in accordance with this position, on obtaining what I conceived to be demonstrative proof of Phrenology being founded in nature, I avowed my belief in it, and have ever since advocated its cause, and, so far from having had any reason to regret the course I have pursued, I have, on the contrary, to thank it for obligations as permanent and valuable, as the temporary ridicule which it brought along with it is evanescent and contemptible.

But, it may be said, even granting Phrenology to be the true physiology of the brain, and the latter to be the only sound basis of its pathology, is it not premature to seek to apply its principles to the improvement of medicine, seeing that so much is wanting to fill up its details? To this an answer may easily be given. False theories are now prevalent, which necessarily mislead and divert attention from the proper investigation of the subject, and beget confusion and uncertainty of practice; and, therefore, even if Phrenology only approximate more nearly to the truth than they, the assistance which it will afford must be proportionally more valuable; and, therefore, its leading principles, being already established on an irresistible induction of facts, we are authorized, by reason and analogy, to make use of them, so far as they are applicable, as freely and authoritatively as we do of the general principles of chemical and natural science, neither of which has yet attained any thing like the perfection which time and cultivation will one

day bring along with them. But, in speaking thus of Phrenology, it must be recollected that I refer to it as it exists in the minds of those who have actually studied it, and not in the crude and contradictory form in which it is presented to us by those who have never examined its pretensions. And, if this equitable rule be followed, it will be found, that both in its principles and in its facts, it is advanced far beyond what those who are unacquainted with it have the least conception of. We judge of Chemistry as it exists in the works and minds of its most eminent cultivators, and not as it comes forth from those of its half-initiated disciples; and, in like manner, we form our opinions in regard to Natural Philosophy, and the applications of its principles, not as unfolded to us in the pages of a newspaper, or in the hastily got up articles of a review, but as they come from the minds of a LAPLACE, a PLAYFAIR, a LESLIE, or a GAY-LUSSAC. No good reason can be given why a different and less equitable rule should be applied to Phrenology; on the contrary, from its being a new science, candor and justice would rather require that a more liberal allowance should be made for its real and supposed deficiencies.

There is yet another reason which amply warrants the earliest possible application of the new doctrines to the elucidation of mental affections; and that is, the importance of general principles to the successful direction of inquiry, which has been too much overlooked by several late experimental physiologists. Disgusted with the visionary theories which once maintained a mischievous ascendency over the minds of men, and led them from the observation of the phenomena occurring in the great laboratories of nature, we have passed, in our aversion, almost to the opposite extreme, and, discarding general views, we cry aloud for *facts*. And as facts are the only basis of accurate knowledge, it is fortunate for mankind that the present mode should be attended with so much practical usefulness. But facts alone are not sufficient; and, unless they be collated, and their relations to each other and to general laws

be deduced by a careful induction, they lose the greater part of their value, and become, to use the apposite illustration of an able writer on political economy,* little better than the undigested erudition of an almanack-maker, and afford no means of judging of the truth or falsehood of a principle or rule of practice. Apparently impressed with this conviction, the eloquent Professor of Medicine in the London University, in recommending the study of mental philosophy, as necessary to enable medical practitioners to perform with credit the important part of their duties connected with mental diseases, remarks, that without it 'even experience, supposing that they had opportunities of acquiring it, which they have not, would merely impart to them a little practical dexterity, very limited, and very likely to fail them in the greatest need; *it is the acquisition of principles of practice which can alone prepare them for the various, the sudden, and the alarming phenomena, which demand their attention in this department of medicine.*' † Even to observe accurately, requires a degree of intelligence and acuteness, a freedom from prejudice, and a patience of investigation, which can be found united only in a mind constantly alive to the influence of general laws, and ardent in the pursuit of every difficulty and of every anomaly to their origin in some previously unperceived condition affecting the production of the expected result. So that, if we take it for granted that he who confines himself to simple observation, will be the most successful in the collection of trust-worthy facts, and in the discovery of important natural truths, we shall infallibly fall into error. So prone, in fact, is the human mind to go back to principles, that scarcely any thing can be perceived without some relation to general laws, or to some other better known phenomena suggesting itself; and, in this way, as has been acutely remarked by Dr. Cullen, 'the simplest narra-

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* Say, as quoted in Macculloch's Potitical Economy, p. 21.

† Conolly on the Indications of Insanity, p. 37.

tive of a case almost always involves some theories,' and our mode of observation being thus insensibly affected by our previous views, it becomes a point of primary consequence that these should be correct; and, accordingly, hypothetical notions are found to prevail and to satisfy the mind, in exact proportion as the intellectual powers are weak, and education and knowledge are incomplete; and well has it been said by the same author, that, in this state, 'in what is commonly called experience, we have only a rule transferred from a case imperfectly known, to one of which we are equally ignorant. Hence that most fertile source of error, the applying deductions drawn from the result of one case to another case, the circumstances of which are not precisely similar. *Without principles deduced from analytical reasoning, experience is a useless and a blind guide.*' *

In medicine, perhaps, more than in any other department of science, a knowledge of, and reference to principles, wherever practicable, is indispensable, for nowhere does the mere sequence of events, the *post hoc ergo propter hoc* mode of argument so often lead into error. Even in the simplest act of the animal system, a combination of causes and circumstances is at work, the failure of one of which, in itself apparently insignificant, may vitiate the expected result, and if this source of error be not guarded against by sound directing principles, the inferences deduced may happen to be at direct variance with the truth; and it is in the habitual watching and just appreciation of all collateral conditions and differences, that an observer who is acquainted with, and acts under the direction of, established principles shows his superiority over one who proceeds without any such guidance. The former not only collects facts for his basis, but he is more scrupulous in subjecting them to examination before admitting them to be facts, and is more careful in investigating modifying influences, in comparing results, and endeavoring, by tracing their previously un-

* Cullen's MS. Lectures, quoted by Macculloch, lib. cit. p. 21.

perceived relations, to arrive at the discovery of general truths, which may be useful, not only in directing him in new emergencies, but also in amending his practice on more common occasions; while the latter may equally treasure up facts, but from want of attention to the peculiar circumstance under which they are met with, from not comparing their resemblances or distinguishing their differences with sufficient minuteness, he can never advance with certainty, or, by a fair logical inference from the facts, deduce general rules by which to provide against new or unexpected events.

Moved by such considerations as these; aware, in common with all medical men, that a knowledge of the condition required for the healthy performance of functions, must not only precede, but direct the completion of our acquaintance with their morbid alterations; and convinced, from long observation and often repeated experience, that Phrenology is the true physiology of the brain, I feel perfectly justified, and am assured, that the candid and unprejudiced reader will join me, in applying its principles, so far as they will go, to the farther advancement of our knowledge of mental affections, without waiting to lose the benefit within our reach for the distant prospect of a greater good, which we may never live to reap, and the arrival of which, the very attempt in which we are engaged, is the best calculated to hasten.

Before concluding, I must be allowed to express my gratitude to Dr. Spurzheim for the great amount of useful information, derived either directly from his works, lectures, and friendly conversation, or suggested indirectly by the admirable applications of principle to the relief of human suffering, and to the acceleration of human improvement, of which his works exhibit so many examples. My aim in the present work is usefulness, and not novelty or originality; and to Dr. Spurzheim, accordingly, I willingly own myself indebted for the largest portion of what will prove to be the most important ideas contain-

ed in the present pages. To the writings of PINEL, BROUSSAIS, Dr. BURROWS, GEORGET, and some others, I am also indebted not only for numerous cases in illustration, but for many valuable practical remarks. And had not the greater part of this work been actually in print, and the whole of it written, before I could obtain access to a copy of Dr. CONOLLY's late publication on the same subject, I should have had to express my obligations to him for many important suggestions, of which I cannot now avail myself, but for which I must refer the reader to his pages. While thus mentioning him, however, I cannot help expressing the gratification I experienced from the liberal and philosophic spirit in which he refers to the subject of Phrenology. His sentiments, indeed, are so well calculated to disarm prejudice and recommend inquiry, that I cannot do better than subjoin what he says. In alluding to a singular inequality of understanding which gives rise to indecision of character, Dr. CONOLLY adds, in a note: 'This is not the only variety of character, of which it may occur to some of my readers that the phrenological system affords the best apparent explanation. *The facts alluded to in the text, many of the phenomena of disease, and* THE OBSERVATION OF ALL MANKIND, *seem to me to prove that the first principles of Phrenology are founded in Nature.* On these, it is very probable, that many fancies and errors may have been built; but now, that anatomy and physiology have together penetrated so far into the separateness of structure and functions of the nerves, of the spinal marrow, and even of certain portions of the cerebral mass, *I can see nothing which merits the praise of being philosophical in the real or affected contempt professed by so many anatomists and physiologists, for a science* which, however imperfect, has for its object the demonstration that for other functions, the existence of which none can deny, there are further separations and distinctions of hitherto unexplained portions of nervous matter.' * What a contrast between the philosophic candor of such sentiments,

* CONOLLY on the Indications of Insanity, p. 135.

and the unworthy criticism of another justly celebrated Professor of the same university, who, in his late work on the Nervous System (p. 222,) is pleased to affirm, that 'the most extravagant departure from all the legitimate modes of reasoning, although still under the color of anatomical observation, is the system of Dr. GALL.' And yet so irresistible is the force of truth to unprejudiced minds, that, notwithstanding the weight of the Professor's well-earned reputation, and the natural influence exercised by a talented Teacher over the minds of his pupils, in enforcing his own opinions, and retarding the progress of those which he combats, he has actually to complain of the 'popularity' of the phrenological doctrines, and of the difficulty he has felt, 'during their successive importations, to keep his pupils to the examples of our own great countrymen,' and to the completion of the structure, 'commenced on the labors of the MONROS and HUNTERS, and which the undeserved popularity of the continental system has interrupted.' The unprejudiced inquirer will probably discover another reason for the difficulty the Professor experiences in preserving his pupils from the contamination of Phrenology, and be disposed to believe that, in a contest for truth, no man, however great his talents, or extensive his acquirements, has any chance for success when Nature is arrayed against him.

EDINBURGH, *November*, 1830.

## NOTE.

As the present work may fall into the hands of some of my brethren, who, either from not having yet completed their medical studies, or from want of opportunity, or other reasons, have never had the doctrines of Phrenology, brought seriously under their notice, it may be worth while to advert to a prevalent misconception in regard to them, which, if left uncorrected, may deter many of my readers from devoting that attention to their examination which their importance and utility undoubtedly demand.

From now hearing much less of Phrenology in ordinary conversation than formerly, some intelligent persons have hastily supposed that the new doctrines were fast hastening into that vale of oblivion which had been assigned them by more than one eminent critic, and have therefore concluded, that it was needless for those, who had any thing else to do, to occupy their time in verifying or confuting their truth. This inference, however, is entirely erroneous, and proceeds on a false view of the facts from which it is deduced. A few years ago we heard a great deal concerning Phrenology, because it was then a constant theme of discussion in medical and literary societies and journals, and at every convivial board; and its merits and demerits were canvassed with a warmth and acrimony which, on both sides, arose too often from imperfect information and exasperated personal feeling, rather thau from a philosophic search after truth. Now we hear less of it, not because it is forgotten, but because the feeling is becoming general among candid and enlightened men, that the subject is of too grave and important a nature to be so lightly disposed of; and it has accordingly ceased to be the subject of idle gossip or table-talk, and is rarely mentioned, except with the seriousness due to rational science; and, in proportion as it is examined in this spirit, the progress and diffusion proceed, unobtrusively no

doubt, but with the steady certainty characteristic of truth. Phrenology has been not many years before the public, and already it can boast of many active and intelligent adherents in all parts of the globe, and of numerous societies devoted to its advancement, not only in Great Britain, but in the chief cities of the United States of America, viz. Philadelphia, Washington, Boston and Baltimore, to most of which the medical profession has furnished the ablest and best-informed members. It can boast also of a Quarterly Journal, published at Edinburgh, now in the eighth year of its existence; and of a Danish Quarterly Journal, published at Copenhagen by Dr. Otto, who is well known by his medical writings; and a few months ago a prospectus by an American Bookseller, for reprinting the former regularly on its arrival, was received by Mr. G. Combe, of this city. In addition to these proofs of its progress, two of Mr. Combe's phrenological works have been reprinted in America by medical men; and Professor Caldwell, of Lexington University, has lately published Elements of the Science for the use of his students, at their own earnest request; and the subject forms no small portion of the regular physiological course which it is his duty to deliver. It is not less incorrect to suppose that the students of medicine in our own country are indifferent spectators of what is going on around them. For proof to the contrary, I may refer to the unquestionable testimony contained in the concluding paragraph of the prefixed Introduction; and if further corroboration be required, I may cite the eagerness with which the students attending Dr. Mackintosh's Lectures on the Practice of Physic, and the numerous strangers who crowded his classroom last spring, availed themselves, for a succession of evenings, of the opportunity which, with great liberality and zeal for the interests of truth, that gentleman procured for them of hearing a phrenological exposition of insanity given by Mr. G. Combe, chiefly from the manuscript pages of the present work, which, imperfect as it was, excited a degree of interest in the audience strongly indicative of their sense of its inherent soundness and practical value. Indeed, the anxiety expressed on that occasion to obtain, in a more permanent form, the views then unfolded, had no small share in inducing me to venture on the present publication.

In the text I have mentioned GEORGET, FALRET, and VOISIN, as having written on phrenological principles; and were it necessary I might refer to others whose opinions are entitled to weight. The celebrated BROUSSAIS, for instance, in his work *Sur la Folie*, p. 426, speaks of Dr. GALL, as having '*acquired an eternal right to the gratitude of mankind* by his valuable works on the brain.' ADELON, also, a man whose talent and judgment are well known, in his *Physiologie de l'Homme*, perhaps the best modern work on Physiology, devotes a large portion of one volume to the exposition, of GALL's discoveries; and bestows high praise on him for what he has himself discovered, and for putting others in the way of successfully prosecuting the inquiry. In like manner, Dr. LONDE, in his *Nouveaux Elemens d' Hygiène*, published in 1827, makes use of the phrenological division of the cerebral organs and mental faculties, and discusses phrenologically the means of influencing and educating each to the best advantage; and, lastly, Professor UCELLI of Florence has boldly dedicated a volume of his *Compendio di Anatomia-Fisiologico Comparata* to the defence of Phrenology, although he was pretty certain that it would cost him the loss of his chair, which it did. These examples do not prove Phrenology to be true, but they suffice to show that it is silently and unobtrusely gaining ground in the medical world, and that its princples are advocated by medical writers of no mean talent and reputation; and whilst no instance has yet occurred of any one who had really studied its evidences in a fair spirit, having come to the conclusion that it is untrue, several have occurred in which a careful examination has overcome even the strongest and most determined prejudice against it. Professor CALDWELL candidly admits that this was the case with himself; and that he allowed himself to be persuaded to attend some of Dr. SPURZHEIM's Lectures in Paris, solely in the expectation that he would bring away with him more materials for ridicule, when the result, as we have seen, was exactly the reverse. Dr. VIMONT, also, after attending Dr. GALL's Lectures, thought he could easily refute Phrenology; and, with that aim, began what afterwards proved to be the most extensive and varied collection that has ever been made, amounting to upwards of *six thousand* specimens, of the

skulls, brains, and casts, of both men and animals. Instead, however, of thereby undermining Phrenology, as he expected, Dr. VIMONT found his scepticism gave way in proportion as his knowledge increased, and, with commendable candor, he, who began his labors with the intention of subverting the new physiology, is continuing them as one of its most zealous supporters, and is at this moment engaged in preparing for the press lithographic delineations of his collection, for the purpose of diffusing more widely an acquaintance with a science, which now seems to him to be of paramount interest, not only to the improvement of medicine, but to the moral and intellectual advancement of the human race.

# OBSERVATIONS

ON

# MENTAL DERANGEMENT.

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## CHAPTER I.

### GENERAL REMARKS ON THE FUNCTIONS OF THE BRAIN AND NERVOUS SYSTEM.

Plain and self-evident as the proposition may appear, it begins only now to be admitted as an axiom in physiology, that every organ in the animal economy performs a separate and appropriate function, and, as a necessary consequence, that, *vice versa*, every separate function is executed by a distinct and independent organ, so that wherever a plurality of distinct functions is found in connexion with any part, that part may unhesitatingly be pronounced to be compound, however simple and homogeneous it may at first sight appear. Granting this principle to be true, it follows, that whenever we discover in any animal, either a new organ, or an addition to one we are already acquainted with in other animals, we may safely conclude, that a new function, or some modification of, or addition to, one already known, remains to be ascertained; and that, on the other hand, when we meet with a new function, or a modified state of an old one, we may rest assured that a corresponding organ or additional part exists,

by which it is executed, and with which we must become acquainted, before our physiological conceptions regarding it can be considered accurate and complete.

Many years have now elapsed since Dr. Gall began, by an overwhelming amount of evidence, to demonstrate the truth of this principle, as applied to the complicated, important, and admirably protected nervous masses contained within the cavity of the skull, and proved, by his own gigantic discoveries, how successfully it might have been employed in elucidating the anatomy and physiology of the brain. But it is of late only, since Mr. Charles Bell, Magendie, and others, have, under its guidance, carried on their investigations into the functions of the nerves with signal success, and brought its practical value more prominently into view, that it has received that share of public attention, to which Drs. Gall and Spurzheim were the first to prove it to be pre-eminently entitled.

After having made the discovery, that the functions of the different cerebral organs could be ascertained during life, by comparing the development of individual portions of the brain with the manifestations of individual mental powers, Dr. Gall, keeping the above principle in view, proceeded to demonstrate, by an incontrovertible deduction from facts, observation, and analogy, that the brain, although apparently constituting an unit, every part of which concurred in fulfilling a single function, consisted in reality of an aggregate of parts, each strongly resembling the others in structure and appearance, but each being still essentially distinct, and endowed with a different function ; and that the obstacles which had so long retarded the discovery of this fact, arose chiefly from preceding inquirers having grouped together a variety of parts as one, and looked for a function common to them all ; a research in which, in the very nature of things, it was impossible to succeed. In precise accordance with this most philosophic procedure of Dr. Gall, we find Mr. Bell, in his first publication, wisely preparing the way for the unprejudiced reception of his discoveries, by establishing the same principle as

his guide, and under its influence bringing forward facts, arguments, and analogies, to prove that the nerves of motion and of sensation, although running blended together in a common sheath, and in appearance constituting a single nerve, all the fibres of which served for the same purposes, were also, in reality, distinct organs, one serving for sensation and the other for motion, each capable of acting independently of the other, and each separately liable to disease; and showing, by a parity of reasoning, and with equal success, that most of the difficulties which had prevented the earlier discovery of their separate existence and uses, had arisen from blindness to the principle of a single organ being able to execute only one function, and the having constantly confounded together as single, what more accurate observation proved to be double alike in structure and in function.

The analogy between the discoveries of Dr. Gall and Mr. Charles Bell goes even farther than this, and affords additional presumptive evidence of the accuracy of both. Many circumstances, in health and in disease, had concurred to render it more than probable, that the apparently homogeneous nervous bundles were of a compound nature, each elementary part having a separate use; and the suspicion had accordingly been long entertained by reflecting men, before its truth was placed beyond the reach of contradiction by Mr. Bell. In like manner, similar reasons had concurred to induce a general belief, before Dr. Gall appeared to demonstrate the fact, that the cerebral mass was an aggregate of many independent parts, each having its own separate use. Even the different organs of what are called the *cerebral* or encephalic nerves, when properly considered, seemed alone sufficient to prove a diversity of functions in the different parts of the brain. Mr. Bell has shown, for instance, that each distinct nerve, or system of nerves, has its root in the spinal marrow, medulla oblongata, or brain, a nervous mass, performing a function corresponding to that executed by the nerve to which it gives origin. Thus all the nerves arising from the posterior column

of the spinal marrow being for sensation, that part also serves for sensation : those proceeding from the anterior column being for voluntary motion, it serves for motion ; and those from the middle portion being to combine the respiratory movements, it serves for respiration. So that, if we know the origin of a spinal nerve, even without knowing how or where it is distributed, we can tell what its uses are; and, *vice versa*, if we are acquainted with its distribution and uses, we can tell from which of the three portions of the spinal marrow it has proceeded. Carrying the same principle into our examination of the cerebral nerves, it is obvious that the parts whence they arise must each have a separate function, corresponding to the uses of each of the nerves. Indeed, were it otherwise, and were all parts of the brain alike for this purpose, we should never see nervous filaments making long circuits, and coming from particular parts with a regularity and care indicative of express design, when every understood arrangement in the animal economy shows that Nature is sparing of means, and takes always the shortest and the safest mode of accomplishing her end. We may conclude, therefore, that every nerve, or class of nerves, the functions of which are distinct, have, in the nervous mass whence they originate, a corresponding part, performing a function similar to their own.

In accordance with this law of distinct functions, it is observed, that every nerve possesses a constitution adapted with an express relation to the objects which it is destined to fulfil. The optic nerve is constituted to perceive *light*, and light alone ; the acoustic to take cognizance of atmospherical vibrations, and of these alone; the gustatory nerve, of tastes, and of tastes only ; the sensitive nerves of sensations, and the muscular nerves to direct voluntary motion ; — but no single nerve can serve for any other of these purposes than the one which has been assigned to it. The optic nerve, if placed in the ear, would remain insensible to sounds ; and the acoustic, if ramified on the eye, would remain insensible to light ; and, in the same way, the nervous filaments, which, distributed to the

heart, render it sensible to the presence of duly oxygenated blood, and cause it to contract for its propulsion, would cease to act, were they brought in contact with a fluid not possessed of the requisite properties; and accordingly, when venous or unoxygenated blood, which is not fitted to give the nerves of that organ their peculiar stimulus, finds its way into its cavities, the heart remains insensible to its presence, and ceases to contract; and the same rule holds with the stomach, the lungs, the liver, and every other living part; the nerves of which respond only to the stimulus for the special cognizance of which they were constituted.

Obvious and rational as this principle seems to be, so rude were our notions of physiology, that it was long conceived that all nerves were essentially the same, and differed in their functions only, because they were ramified on different structures. It was held that a nerve of sensation, if distributed on a muscle, would become a nerve of motion; that a nerve of taste, if ramified on the skin, might become a nerve of touch; although, in manifest contradiction of such a supposition, parts were seen to receive particular filaments from distant sources, when they might have been supplied from the *adjacent* nerves with a profusion of branches, had the latter been equivalent in power to the former. But now it is proved and admitted, that every nerve *has* a function peculiar to itself; and, accordingly, when more than one kind of nervous filaments is distributed to the same organ, it is invariably found to have uses assigned to it, proportioned in number to the nerves which it receives; and the variety of combinations into which some organs enter in the ordinary operations of life, is the true cause why they are so abundantly supplied with a variety of nerves.

The brain being the centre to which all external or internal impressions must be conveyed before *sensation* can take place, and from which all volition must proceed, every nerve, which serves to convey these impressions to, or to transmit the commands of the will from the mind to a distant organ, necessarily requires to be in free communication with the brain, either by

direct origin from some one of its constituent parts, or by the medium of the spinal marrow, with which some parts of the brain are closely connected, both in structure and in function. And, accordingly, if we destroy this communication by artificial means, by dividing or tying the nerve, for example, the progress towards the brain of the impression arising from irritation of its extremity is interrupted, and the action of the former being requisite for perception, no sensation takes place. And, in like manner, if we divide the muscular nerves going to a limb, they lose the power of transmitting the commands of the will to the parts beyond the obstruction; and, however urgently the mind and brain may require their activity, they remain perfectly motionless. To effect sensation, therefore, or the perception of impressions made on the sentient extremities of the nerves, a consentaneity of action, and a freedom of communication between them and the brain, are indispensably requisite.

These remarks apply to all the nerves of animal life, *internal* as well as external. It is always the brain, and not the nerve itself, which feels the irritation, of which the nerve is only the recipient and conductor. And, on this account, the action of the brain is modified by every change in the condition of the nervous fibres, ramified on every part of the body. If a piece of ice be put into my hand, an impression is made on the nerves, which, transmitted to the brain, and exciting a particular action in it, gives to my mind a sensation of cold, which I refer to my hand. But suppose that the action of the brain were suspended for a little, by a faint, or by stunning, and that a heated bar of iron were substituted for the ice, the nerves remaining equally entire, no sensation would reach me, till by the returning action of the brain, consciousness returned; and then a very different excitement taking place, would give to my mind the feeling of intense heat. The brain, therefore, is always modified in its action by the state of the nerves, so long as the natural communication between them remains uninterrupted. But if this be cut off, the consentaneity of action

ceases. Thus the nerves which, ramified on the stomach, and excited in a peculiar way by certain conditions of that organ, give rise in the brain to sensations of hunger (referred by the mind to the stomach itself), cease to originate any such mental state when their connexion with the brain is destroyed. In the same way, the irritation produced by the ingestion of acrid substances into the stomach, and which is conveyed by the stomachic nerves to the brain, there to give rise to sensations of heat, pain, and sickness, also referred by the mind to the stomach, ceases to induce any such consciousness when the nervous channel of communication is intersected; so that the stomach may then be actually eroded, without the mind being aware of its condition. And, *vice versa*, certain mental emotions, and certain states of the brain, which, when the communication is unimpaired, affect the stomach, invert its action, and cause it to evacuate its contents by vomiting, produce no such effect when the nervous chain is completely divided, and the transmission of the nervous influence prevented. The reciprocal communication and influence are therefore essential to the exercise of the functions of both brain and nerves.

The joint action of that part of the brain which takes cognizance of the impressions made upon the extremities of the nerves being requisite for sensation, or, in other words, the brain being truly the seat of Sensation, it happens, that if, by any internal cause, such as disease, that part of it which is in correspondence with a nerve be excited in the particular way in which it is acted upon by the natural stimulus from without, the same sensation will arise in the mind as if the external stimulus were actually present, and making its usual impression on the nervous filaments, and a belief of its real existence will accordingly take place, unless the mind be informed by other faculties of the source of the error. Such, accordingly, is the origin of the many odd feelings, — of the cravings of hunger without real want of food — of the creepings under the skin — of the voices constantly whispering into the ear — of the deceptions of sight — and of the all-pervading smells and tastes so

commonly complained of in madness, and sometimes also by persons in sound mind; the only difference being, that the former believe in the existence of an external cause to excite these sensations; and that the latter perceive their morbid origin, and refuse to obey their impulses.

In the state of health, the stimuli to which the nerves are adapted, and of which they transmit impressions to the brain, are so perfectly in harmony with their constitution and structure, that their action is carried on almost unconsciously. But if disease attack the organ or part on which they are ramified, the state of things instantly changes. The nervous filaments, stimulated perhaps to excess by great irritation in the part diseased, then transmit to the brain the same excess of stimulus which they receive, and rouse the cerebral part with which they are more immediately connected into inordinate action. And if the irritation be of long continuance and considerable severity, and the organ be one strongly connected with the brain by a multiplicity of nerves, or the importance of its function, the inordinate cerebral action thus induced may so far affect the structure and functions of the brain itself, as to excite in it a morbid action, which will go on independently of the cause which produced it; and this, as we shall afterwards see, in treating of Digestive Derangement, is in reality one of the sources of cerebral and mental disease.

As, then, every single part is capable of performing only one function, and every system of nerves arises from corresponding nervous masses performing functions analogous to its own; it follows, that the higher we rise in the scale of living beings, and the more numerous the functions with which each is endowed, the more perfect and the more complicated will their organization become. So that, when we consider the number and perfection of the senses, and the numerous propensities and powers which man possesses in common with many animals, which have distributed among them what are united in him, and the various high moral and intellectual faculties of which he is exclusively in possession, — the natural

and irresistible inference is, that he must have a brain and nervous system, complicated and perfect in structure, in exact proportion to the higher perfection and more numerous endowments which the Creator has bestowed upon him. And accordingly, on resorting to observation, we discover that, in precise proportion as we ascend in the scale, and the animal acquires a sense, a power, or an instinct, do its nerves multiply, and 'its brain improve in structure, and augment in volume, *each addition being marked by some addition or amplification of the powers of the animal, until in man we behold it possessing some parts of which animals are destitute, and wanting none which they possess,*' so that '*we are enabled to associate every faculty which gives superiority, with some addition to the nervous mass, even from the smallest indications of sensation and will, up to the highest degree of sensibility, judgment, and expression.*'*

The brain being at once the seat of intellect and of instinct, the centre of sensation, and the chief fountain of nervous energy, and therefore a complex organ, is thus admitted, by anti-phrenologists as well as by phrenologists, to receive successive additions in different animals as they rise in the scale of creation, and become endowed with additional instincts. Those of the lowest class, which manifest no traces even of sensation, have neither brain nor nerves; but wherever a *will*, a *rational will*, so to speak, depending upon a choice between different impulses or motives, exists, there a brain exists also, which becomes complicated and perfect, in proportion to the number of instincts or faculties with which the animal has been endowed.

It appears, indeed, that some of the lower creatures have individual parts of the brain more highly developed than man, but they have, at the same time, individual senses more acute, and individual instincts more powerful, to correspond to these parts. But, then, no animal has a brain consisting of so many

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* Edinburgh Review, No. xciv. p. 442–3. Who could have expected to find such doctrine in such a place?

parts, or so fully and perfectly developed, as that of man; and no animal, it is well known, possesses so many powers of intellect and of feeling as he does. The small size of the anterior lobe, and the contracted coronal surface of the middle lobe, in them, show that their deficiency of organization corresponds with the deficiency of those moral and intellectual powers, the possession of which constitute the superiority of man. And the simple fact of mind being unable to manifest itself, except through the instrumentality of brain, is, in one sense, logically sufficient to settle the question; for, if the human brain did not possess parts which are not to be found in animals, it would be able to manifest those qualities only which man and animals have in common; just as, without eyes, man could not enjoy vision, or, without ears, execute hearing, however perfect the internal or immaterial constitution of his mind might be.

For demonstrative evidence of the brain being an aggregate of parts, each serving for the reception of particular sensations, or for the manifestation of a primitive mental power, and for an exposition of the individual functions of each, so far as yet ascertained, I must refer to the works of Drs. GALL and SPURZHEIM, and to those of the British phrenologists. All that I can do here is, to allude shortly to a variety of physiological and pathological phenomena, which are utterly incompatible with the notion of the brain being an unit performing a single function,—and which, therefore, although they may not be sufficient to prove, afford, at least, strong presumptive evidence in favor of the phrenological principles.

I need hardly remind the reader, that a multitude of well-known facts have forced the conviction upon most physiologists, that the brain is the organ of the intellectual and moral faculties, and of the various animal appetites,—and that none of these can act, or be acted upon, except through the medium of a corresponding change in their cerebral organs, just as the eye must always be affected before sight can transmit its impressions to and from the mind. But it is noticed that different passions and intellectual powers appear in succession, and,

therefore, each must have a part of the brain or organ of mind appropriated to its own operations; for, if one organ served for all, the immaterial principle remaining the same, all ought to arrive at maturity equally early, which we know not to be the case. Thus, hearing, sight, taste, touch, and smell, having each an appropriate organ, may be conceived, and indeed are known, to appear, in some animals, at one time — and, in others, in succession, according to the simultaneous or successive development of these organs. But if we suppose them all to act through the medium of a single organ, it then becomes impossible to conceive how perfect vision should be possessed a month or a year before the senses of hearing or of taste are developed. The case of the mind and brain is perfectly parallel. We see the perceptive powers, for instance, so invariably in full activity long before those of reflection begin to operate, that no rational man would seriously address an infant in the language of abstract reasoning; and, accordingly, the art of the teacher consists in adapting his instructions to the expanding powers of the pupil's mind; and he who would follow the same method with all children, or with the same pupil at different ages, would be justly held as greatly deficient in talent and in judgment. The same remarks apply to the successive appearance of the propensities and sentiments. Plurality of organs will alone explain the difficulty, and hence reason authorizes its belief.

Pathology is equally abundant in demonstrative proof of the plurality of cerebral organs. Partial idiocy, — partial injuries of the brain, which do not affect all the mental faculties, — insanity, affecting only one or two faculties, — cases of apoplexy, followed by loss of memory of names, without apparent deficiency in other respects, — and the occasional development of new powers by disease, — are all at variance with the unity, and in harmony with the plurality, of cerebral organs.

Some object to the brain being considered as an aggregate of parts performing distinct functions, — that this is impossible

because there is no visible partition separating them from each other; but the same objection having been erroneously urged against nerves, now demonstrated to be compound, shows how little weight ought to attach to our notions of what ought to be, when placed in opposition to what is. If we knew intimately the structure of the brain, and were minutely acquainted with the capabilities belonging to such a structure, and, founding on these, could show that two parts of the brain lying in contact with each other, *could not possibly* perform distinct mental functions, then the objection would have weight. But if experience shows that the *fact* is the reverse, we are, with due submission to Divine wisdom, bound to believe that the respective organs *are* duly fitted for the perfect performance of the functions for which they were destined. There is, in point of fact, also, a greater similarity between the different mental functions than between sensation and motion; and yet we find the nervous fibres performing the latter inextricably intermixed in apparently a single bundle. Again, although long disputed, it is now generally acknowledged, that the three nerves of the tongue subserve taste, motion and touch; and the difficulty is not greater, in regard to the brain, than it is in regard to them, or to the spinal nerves; for it was inability to distinguish any boundary between their consituent parts that alone prevented their separate functions being sooner demonstrated. But the reasons which led to their being viewed as compound, existed in all their force long before the fact was ascertained, and were felt by many, and by none more than Dr. SPURZHEIM, to be as conclusive then, as they are proved to be now, that is universally acknowledged.*

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*I cannot refrain from mentioning here, in justice to Dr. SPURZHEIM, that on the strength of this kind of evidence, which his logical mind felt to be irrefragable, he advanced, years before the publication of Mr. BELL's discoveries, very nearly the same doctrine in regard to the functions of the nerves, which Mr. BELL has the high merit of having established by the conclusive evidence of facts. The passage I refer to occurs in his work on Insanity, and is so intimately connected with the subject before us, that I shall venture to give it entire.

The same train of reasoning from existing phenomena, and the same strong presumptions which led Dr. SPURZHEIM, in common with almost all eminent physiologists, to believe in

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'It has been observed,' says Dr. SPURZHEIM, 'that in palsy, voluntary motion, and the sense of touch, were generally both destroyed at the same time; but that sometimes the one ceased while the other remained. From this it has been inferred that there are two sorts of nerves. *Anatomy has not yet demonstrated them; but I believe that they exist, and for the following reasons. The same nervous fibres do not go to the muscles and to the skin, and each of these parts has a distinct function. The nerves which are necessary for voluntary motion cannot propagate the impressions of the sense of touch*, nor the latter the impressions of movement. The muscles receive their impressions from within, but the sense of touch from without. The nerves of motion feel fatigue and pain in general, in the same way as other parts of automatic life, but they experience no sensation of temperature or of humidity. The sensation of fatigue is not in connexion with the nerves of touch; for one may be greatly fatigued, and have at the same moment very acute touch. On the other hand, touch bears no relation to the muscles. The functions of touch are assisted by the muscles like those of the other senses; that is to say, if the internal facuities employ the five senses, to receive external impressions, they also excite the muscles to serve the senses.

'For these reasons, we may say that the tongue is provided with three sorts of nerves, one to move it, another for touch, and the third for taste. In adding to this the pathological observations, which show that the functions may be diseased separately, *we have every reason to admit the difference of nerves*, AND ANATOMISTS OUGHT TO CONTINUE TO SEEK OUT THEIR DEMONSTRATION.'

'It may be objected,' continues Dr. SPURZHEIM, 'that the nerves of motion and of sensation arise from the same pair, and that, consequently, they must be the same. That inference is erroneous; for the fifth cerebral pair of nerves shows the contrary. In fact, the functions of the nervous fibres of that pair are evidently different, and accordingly a difference in their fibres is admitted. The pairs of the spinal nerves are divided into different fasciculi, and in a more distinct manner than the fifth, and, consequently, these divisions may also have different functions.'*

If Mr. BELL himself had penned the preceding pages, after having made his discoveries, he could scarcely have been more clear and forcible in his exposition, or alleged stronger grounds for the soundness of his views; and, therefore, when we recollect that the Physiognomical System in which (p. 23) the substance of the above quotation first appeared, was before the public in 1815, several years before Mr. BELL's experiments were heard of, we cannot but feel the highest respect for the sagacity, penetration, and accuracy of observation and of judgment, of Dr. SPURZHEIM, both as a physiologist and philosopher.

* Observations sur la Folie, par G. SPURZHEIM, p. 26-7. Paris, 1818.

the independent existence and separate functions of two sets of fibres in the spinal nerves, long before their actual existence was demonstrated, apply, *mutatis mutandis*, to the case of the brain, and as irresistibly compel us to believe that it consists of a plurality of parts of organs, each performing a distinct mental function; and, in point of fact, attention to these has forced upon the minds of a great majority of physiologists, ancient as well as modern, the firm belief of the brain being a complex organ; and the opposite doctrine, indeed, is so much at variance with reason and with common sense, that even FODERE', than whom no one was ever more averse to admit any thing favorable to phrenology, after recapitulating a great many reasons similar to those already mentioned, which had been employed by philosophers antecedent to GALL and SPURZHEIM, for believing in a plurality of mental organs, is constrained to admit that 'this kind of reasoning has been employed by the greater number of anatomists, from the time of GALEN down to those of our own day, and even by the great HALLER, "*qui eprouvait le besoin* d'assigner une fonction à chaque department du cerveau,'" &c. PINEL also, (in the article 'Manie,' in the Encyclopedie Methodique,) after relating some cases of partial insanity, asks, 'si *tout cet ensemble de faits peut se concilier avec l'opinion d'un siège ou d'un principe unique de l'entendement.*' The plurality of cerebral organs is, therefore, properly speaking, not a matter of doubt. It is only the number and uses of the component parts that remain under discussion; and physiologists still differ on these, because, previous to the appearance of Dr. GALL, no adequate method of investigation had ever been discovered. But, now that he has put us in possession of a powerful and infallible instrument of research, greater certainty and unanimity of opinion begin to obtain.

Were it not foreign to the present inquiry, it would be useful here to discuss at length the modes of investigation employed previously to the time of Dr. GALL, and to expose the sources of their inadequacy. But the fact that nothing has

been accomplished by their employment, and that, after the labors of two thousand years, the functions of the brain remain, except so far as explained by phrenology, enveloped in mystery, is itself more than sufficient to prove their inefficiency. Anatomists have failed in their attempts by dissection, because structure alone does not reveal function; and, even if it did, that of the brain is almost as little known as the uses which it subserves. All the nerves, for example, presents an analogous structure and sameness of appearance, and yet all, we have seen, have uses totally different; and, on the other hand, we are familiar with the structure of the spleen, of the thyroid gland, and of many ganglia, for which we cannot, I do not say discover, but even imagine, a suitable use. Metaphysicians have made the attempt in another way, but they have failed to trace the connexion of the mind with its cerebral organs, because Consciousness, from which they drew their information, does not even inform us that we have a brain at all, much less what are the number and uses of its parts. Medical men have failed in the same inquiry, because injury or disease of any part of the brain, however small, stirs up morbid sympathies and constitutional disturbance, in proportion to the original irritability of the patient, and not to the extent of the local injury; and, besides the ability to observe what mental faculties suffer from disease of particular cerebral parts, *presupposes* an acquaintance with the number and nature of these powers, and with the situation and limits of these parts, or, in other words, with the very things we are in quest of. Physiologists have failed in their experiments on the brains of the lower animals from precisely the same cause. And Dr. Gall professes to have succeeded to a great extent, by observing what particular manifestations accompany great endowments of particular cerebral parts, or, in other words, by studying the relations of organ to function. This is the method by which physiologists have ascertained the uses of other parts of the body; and, whatever it may be capable of affecting, as applied to the brain, it certainly cannot be more unsuccessful than those which have preceded

it; and, therefore, were it only to advance us *one* step farther than they have done, it would still have strong claims to general adoption. It is true, that a prejudiced misrepresentation of isolated results has connected with it, in the minds of many, a rooted impression of its absurdity; but it will not be difficult to show, that, so far from being absurd, it is in perfect harmony with some of the best established and most universally received principles of physiology, philosophy, and of common belief; and accordingly, on a fair examination, our surprise is rather to discover that it can still be conscientiously doubted by any rational inquirer, than to find it resorted to, and preferred to all others, by men of decided talent and extensive acquirements.

The fundamental principles of the new physiology of the brain, are,

1. That the mind is endowed with a plurality of innate faculties.

2. That each of these faculties manifests itself through the medium of an appropriate organ, of which organs the brain is a *congeries*.

3. That the power of manifesting each faculty bears a constant and uniform relation, *cæteris paribus*, to the size of the organ, or part of the brain, with which it is more immediately connected.

4. That it is possible to ascertain the relative size of these different organs during life, by observing the different forms of the skull to which the brain gives its shape.

The first of these propositions is almost universally admitted. Of the second we have, in the preceding pages, adduced the strongest *probable* evidence, and we can obtain the demonstrative only by observation in nature. The fourth is also admitted by the most eminent living physiologists, and may be most easily established by an extensive examination of specimens, so that the third alone remains to be discussed; and as its truth not only directly affects the truth of phrenology, buthas a very important practical relation to the pathology

and treatment of Insanity, I shall, without scruple, enter somewhat largely into its direct and analogical evidence; and I shall do so with the less reluctance, that the subject is well calculated to diminish the force of those prejudices, under the influence of which the phrenological doctrines are, I regret to say, still so generally viewed by the medical profession.

## CHAPTER II.

### INFLUENCE OF ORGANIC SIZE ON ENERGY OF FUNCTION, PARTICULARLY AS APPLIED TO THE ORGAN OF THE EXTERNAL SENSES AND BRAIN.

Were the physiology of the brain as accurately and widely known as that of other organs of the body, I should not now be obliged, in treating of its diseases, to enter upon a discussion of any of the conditions which influence the performance of its functions. But in the state of ignorance which unhappily prevails, it seems to me impossible, consistently with clearness and utility to avoid calling the attention of the reader to the effects of organic size upon energy of function. The phrenological doctrine of the connexion of individual powers of the mind with individual portions of the brain, itself of extreme importance in its applications to the pathology of insanity, rests on the truth of this principle, as a *sine qua non*, and is still so little understood or attended to by the profession at large, as to render it imperative on those who have satisfied themselves of its consistency with nature, and numerous practical advantages to recommend it most strongly to the candid examination of their brethren ; and nothing seems so well calculated to effect this end, and so likely to diminish the prejudices, and to remove the indifference with which Dr. Gall's discovery has to contend, as pointing out, as I shall thus have occasion to do, the perfect harmony subsisting between the

facts which he has brought to light, and those already gathered from the other departments of the same wide and rich field of animated nature. Because, if we find the same laws and conditions regulating and affecting function in all other parts of the animal economy, which Dr. GALL shows to preside over the functions of the brain, it becomes impossible longer to stigmatize, as absurd and unfounded, the very principles which elsewhere we characterize as marked by divine wisdom and power; or to pass over with contempt, that theory of the philosophy of mind, which has almost evolved itself from the mass of facts and observations, collected by the genius and industry of the indefatigable GALL; and which, for simplicity, truth, and practical utility, never has been, and never can be, equalled by any system derived from a different source.

Familiarity with the principle of size of organ giving energy of function, is also essential to the complete understanding of a numerous class of existing causes of mental derangement, the agency of which, as we shall afterwards see, depends chiefly on the tendency to greater and more frequent action of individual powers of the mind, which always accompanies disproportionate size in individual parts of the brain; and is, at the same time, of great practical utility in regulating the moral treatment; and, therefore, when we find that, so far from being *expressly* admitted, the principle of Size has, from want of consideration, and consequent rashness of judgment, been the grand stumbling-block in the way of many able and estimable men, who have not only been prevented by its apparent absurdity from attending to the inferences to which, as applied to the brain, it directly leads, but have exerted their influence in deterring those with whom their opinion had weight, I trust that no farther excuse will be deemed necessary for submitting to the reader the following outline of the evidence by which it is supported, before entering directly upon the subject of diseased mind.

Even to those who are acquainted with physiology, but whose attention has never before been directed to the obser-

vation of the mutual connexion of mind and matter, and who are not aware of the actual extent to which the mental manifestations are affected by every change in the condition of the brain, no part of the phrenological doctrines seems at first sight so 'inherently absurd' and destitute of foundation, as that fundamental principle which affirms power or energy of function to be always, *cæteris paribus*, in exact relation to the size of the organ; and yet, so far is this from being 'contrary to the analogy of all our known organs,'* as is generally supposed by the unthinking, and taught even by men of no mean reputation, that *on careful examination, it is found to be, in reality, a general law of nature, pervading all created objects, animate and inanimate,* and, consequently, affecting the brain in common with every other part of the body.

The principle of Size, as maintained and demonstrated by the phrenologists, it must be observed, is, not that organic Size is the *only*, but that it is ONE condition, *and a most important one, in producing energy of function;* and that hence, WHERE ALL OTHER CONDITIONS ARE EQUAL, there increase of Size will invariably indicate increased intensity of function. Now, it is no small presumption in favor of the inherent truth of this proposition, that no one has yet ventured either to deny or to dispute it, without having first misstated or misrepresented its meaning. For, instead of fairly grappling with it, as laid down in all the phrenological writings, those of the writers against phrenology, who have ever attacked it, and the Edinburgh Review among the number, have chosen uniformly to represent it as affirming, that organic size is the *only* and *exclusive* condition of energy of function, and have brought wit, fact, and argument into play, to upset, not Dr. GALL's statement, but this their own absurd misrepresentation; and, having succeeded in this very easy attempt, they have done their best to make the world believe that they had actually withdrawn the prop which alone supported the phrenological edifice, and that,

* Edinburgh Review, No. 88, p. 301.

of course, the latter was fast crumbling to its fall. How much they have erred in this proceeding, and how little of consistency and of truth is to be found in such statements and opinions, as, in support of their cause, they have hazarded, in regard to the organs of sense and animal nature in general, will presently appear, when I shall have shown that the principle in dispute, instead of being contrary to, is in reality in strict harmony with, 'the analogy of all our known organs.'

In physics, the relation between Size and Power is universally acknowledged, and is susceptible of mathematical demonstration; for it is nearly synonymous with the hitherto undisputed axiom of a whole being greater than a part. Every large organ is, *cæteris paribus,* made up of a greater number of integrant parts than a small one; and if, in the small one, each of these parts is equivalent in force to a given quantity, it necessarily follows, all other circumstances being equal, that the force of the large will exceed that of the small organ, by the united quantity of all the additional individual parts; and no way of escaping this conclusion can be got, except the unfair one of keeping the *cæteris paribus* out of view. If this were not the case, we would as soon expect to see a breach effected in the massive walls of a fortification, by a rapid and sustained discharge of musketry, as under the reiterated blows of heavy artillery. But it is the animal kingdom which chiefly concerns our present argument, and to it I therefore proceed.

It will scarcely be disputed, that the strength of the bones is always, *cæteris paribus*, proportioned to their size; and the slightest consideration will satisfy every one, that the same principle applies equally to the muscular system, which, indeed, its structure sufficiently demonstrates. Muscles are composed of a great number of nearly parallel fleshy fibres, each equal in itself to a given force. If, then, the bulk of the muscles be increased either by a greater thickness, or by an additional number of such fibres, it is physically certain, even *a priori*, that the amount of force which they are capable of exerting will be increased in exact proportion; and, accordingly, the left

ventricle of the heart, which sends the blood to the remotest parts of the body, is at least double the thickness of the right, which requires only force enough to send it through the lungs. But, although muscular, like cerebral size, is, *cæteris paribus*, a measure of strength, still it is by no means the *only* condition. There are circumstances in which vigorous motive powers are required in combination with as small muscular bulk as is possible to be attained ; and there are others where bulk is of no consequence. To effect the former modification, a beautiful arrangement is made by Nature, and in strict accordance with the principle we are now proving.

Motion is the result of muscular contraction, but muscular contraction takes place only in consequence of the stimulus of the will conveyed by the nerve, whose ramifications form a part of the muscle itself. Hence strong contraction may arise either from large muscle and moderate stimulus, or from moderate muscle and strong stimulus. Thus, in fishes, which live and move in a medium almost in equilibrium with their own bodies, and which, of course, require no active effort to support themselves in a position different from that given by the ordinary laws of gravitation, and in which, consequently, increased bulk is attended with no material disadvantages, the power of motion depends, in a high degree, on the great size of muscle, and, in a small degree, on nervous excitement or size of nerve. But, in man and other animals, who require a constant effort to preserve their upright position, and in whom increase of muscular bulk would add directly to the sum of the difficulty, by adding to the weight, the same end is accomplished by an increase in the supply of nervous excitement, or, in other words, by a relatively much larger nerve, in proportion to the muscle which it is destined to supply. In birds, again, where the disproportion between their own gravity and that of the air is so strikingly great, and where, consequently, every additional muscular fibre would but add, by its weight, to the difficulty of rising from the ground, the same relative increase of nerve over muscle is carried to a still

greater degree. But, in this arrangement, the law of Size is still in force; for, in all these instances, wherever the supply of nervous energy and other conditions are found to be equal, there size of muscle invariably indicates the degree of power. Had the power of motion in birds depended on Size of muscle *alone*, and these organs been proportionally as large as in fishes, they must of necessity either have remained forever chained to the surface of the earth like man, or they must have perished, from absolute inability to fill the place which Nature had destined for them in the scale of creation; and Size in one part of the organ has thus been given to obviate the disadvantages which it would have entailed, had it been possessed by the other.

It may be objected, that the biggest men are not always the most powerful in bodily strength; and that a maniac, or an individual in the delirium of fever, is often able to overcome the united efforts of several persons to restrain him. But this is still in strict accordance with our principle; for the other conditions are not the same. In these instances, there is intensity of nervous excitement, giving intensity of action to the muscles; and, it is quite certain, that, if a big muscular man were subjected to a proportionate amount of excitement as the smaller, he would display an energy of motion greater than the other, in exact proportion to the greater size of his muscles; and it is no exception to this, to produce a bulky individual of a weak lymphatic constitution, made up of water and fat, rather than of muscle, and to say that he has less bodily energy than another individual of smaller size, but of a bilious and firm habit, and in whom the muscular system is at its highest pitch of perfection. The very contrasting of such individuals, without attending to the *cæteris paribus*, is a total departure from the principle which we are advocating, and, consequently, need not now occupy our attention.

That the law of Size holds in regard to the blood-vessels and heart, is self-evident to every one who knows that a tube of three inches diameter will transmit more water than a tube

of only one inch. And the same may be said in regard to the lungs, liver, kidneys, and every other part. If a liver, suppose of four square inches, can secrete four ounces of bile, it is perfectly manifest, that one of eight square inches will be able, all other things being equal, to secrete a quantity greater in proportion to its greater size. If this law did not hold true, what would be the advantage of large and capacious over small and confined lungs? There could be none.

In regard to the nerves or organs of sensation also, which in function and structure approximate more closely to the brain, the disputed proposition of Size being a measure, or element of power, is easily demonstrable.

Speaking generally, there are, as already shown, two classes of nerves distributed over the body, those of motion and those of sensation or feeling. In accordance with our principle, the nerves of motion are, in most instances, greatly smaller than those of sensation, and for this reason; in producing motion, the muscle is the essential or chief apparatus, and the nerve is required only to communicate to it the impulse or stimulus; but, in sensation, the reverse is the case; the nerve itself is the chief instrument, and the part on which it is ramified is merely a medium for putting it in relation with the specific qualities which it is destined to recognize. Thus the eyeball is merely an instrument constructed in accordance with the laws of light, by means of which the proper impression may be made on the optic nerve, and thence transmitted to the mind. In accordance with this principle of Size being a chief element in power, we find that the olfactory, the optic, and other nerves of sensation, have a constant and often enormous excess of volume over the muscular nerves, or those of motion, in the same animal; and that, as a general law, the nerves of sensation are always proportioned in size to the extent to which sensation is possessed. It is stated by a late very able writer,* that in the spinal nerves of man, for exam-

* Desmoulins, Anatomie des Systèmes Nerveux des Animaux à Vertèbres, p. 775.

ple, the dorsal roots, or those belonging to sensation in the nerves supplying the arm, have at once an excess of volume and of surface at least *five times greater*, both for each individual fibre, and for the bundle resulting from them, than the anterior roots, or those belonging to motion. And the rationale of this is evident; for it is in the hand that the greatest power of touch resides, and it is by these nerves that the hand is supplied.

Another fact, mentioned by the same author, shows clearly the universality of the disputed principle. The roots appropriated to sensation in the spinal nerves going to the arm, are about five times larger than the corresponding roots at other parts of the spinal cord, which, it must be observed, are distributed to parts where touch is imperfectly possessed. He adds, that, comparing the size or mass of each kind of nerve, with the extent of the skin and muscle on which each is ramified, the nerve of sensation will be found in the mammalia often more than a hundred times more voluminous than that of motion: and that, allowing for the greater thickness of muscle, this disproportion will be enormously increased. And, as an instance, he mentions that the single nerve of feeling ramified, on the tactile extremity of the proboscis of the elephant, exceeds in size the united volume of all the muscular nerves of that organ.

Having just shown, that, in animals possessed of acute sensation, the corresponding nerves greatly predominate over those of motion, I may now add, in corroboration of our principle, that in other animals, in which muscular power greatly predominates over feeling, the balance between the nerves becomes changed. In the horse and the ox, for example, which from the nature of their covering, have very imperfect touch, with great bodily strength, the sum-total of the muscular roots in the nerves going to the four limbs, exceeds, by at least one third, that of the sensitive roots, where, in man, the proportions were inversely as five or six to one. In like manner, in birds and reptiles with scaly skins and limited touch, the same

preponderance of the nerve of motion over that of sensation obtains. And, what is curious enough, wherever nature has given a higher degree of sensation or touch to any particular part, there the corresponding nerve is invariably increased. This is observed, for example, in the nerves of the tail in some species of monkeys, in those of the wings in some bats, and in those of the claws of some species of birds, and the increased Size is confined exclusively to the part possessed of the increased function.

We come now to consider particular modifications of sensation exhibited in the organs of the external senses; and here, also, we shall have little difficulty in establishing the existence of the law of Size.

In studying the influence of Size on the functions of the external senses, we must take especial care not to confound accidental with essential circumstances, or to mistake a part for a whole. Thus every external sense is composed of, first, an instrument or medium, on which the impression is made; and, second, a nerve to conduct or to transmit that impression to the mind and brain. But, as these two conditions are variously modified, and not at all necessarily proportioned to each other in different animals, it follows, that if we take one part as a type of the whole, and argue from it under this supposition, we shall inevitably err. And here, as we shall presently show, is precisely the source of the notable blunders, committed by those who deny the principle of organic Size having relation to functional power.

All the external senses being modifications of general sensation, depend primarily and essentially on the presence and activity of a special nerve for the exercise of their functions; but, besides this, something more is required, by which the special nerve of each sense may be brought into communication with the particular qualities of external objects which it is destined to feel. This medium is what is generally called the *organ* of that sense. Thus, the external ear, the tympanum, the vestibule, and the canals of the internal ear, are the parts

by means of which the vibratory properties of the atmosphere from which sound arises, are brought into relation with the auditory nerve. These parts, then, are the seats of the impressions made by the atmospherical undulations, but they are no more. It is the *nerve* that is ramified on them which alone feels the impression, and transmits it to the brain. In like manner, the eye, with all its humors and membranes, is merely an apparatus formed in relation to the properties of light, and on which the luminous image may be depicted, and its qualities brought under the cognizance of the *nerve* of vision. The ear, the eye, the membrane of the nostrils, the tongue, and the skin, are thus only *media*, or instruments, in a great measure passive, having natural relations to the different properties of sound, light, &c. by which the respective *nerves* ramified on them may become acquainted with their own objects; and they differ from each other in structure, only because light, sound, and sapidity, differ from each other so essentially, that light might shine on the ear or on the nose, or the air vibrate upon the eyeball, to the end of time, without conveying an image or suggesting a sound to the mind. The nerves are thus the true organs of the senses, as they are of sensation in general; and, consequently, if the principle of Size applies to them, extent, acuteness, and power of function ought to be looked for, *cæteris paribus*, in connexion with size of nerve, more than with mere size of the passive part of the apparatus. Such, accordingly, is the uniform and invariable fact; and, when the real functions of the other component parts of the respective organs are kept in view, there also increase of Size will, *cæteris paribus*, be invariably found accompanied by increased energy of function. To show this, let us examine each sense in detail, and begin with the mechanism of smell.

The organ of Smell consists in man and in most other animals of three distinct parts, each performing a distinct function, and each contributing to the perfection of the united whole. These are, 1st, The external projecting part, known

familiarly as the nose ; 2d, An internal cavity communicating with this external appendage, and containing what are called the spongy or convoluted bones, over which is spread the thin fine membrane on which the odoriferous particles make their impression, and which, from its discoverer, or, rather, its describer, is called the Schneiderian membrane ; and, 3d, The olfactory nerve, which is ramified over that membrane, and which receives and transmits the impressions of smell to the mind. All of these concur in increasing the intensity of the sense, and each concurs with an energy or power, *cæteris paribus*, exactly proportioned to its size ; and the opposite of this can be maintained, only by confounding one part with another, and by viewing the external appendage as the real seat of the function. A moment's reflection will demonstrate what has been said.

The external nose adds to the energy of smell only by directing a greater volume of air loaded with odoriferous particles into the nasal cavity than could otherwise have reached it. Its situation, form, and size, relatively to the internal nostrils, fit it admirably for this purpose, as, from their lightness, odors tend to rise, and in their progress are thus intercepted by the broad base of the nose opening downwards. It is quite certain, then, that this offers no exception to the phrenological principle of Size being a condition of power ; for it is indisputable, that, according to all physical laws, a larger funnel will receive and concentrate a greater sum of atmospherical particles than a smaller one. And it is observed that, in accordance with this, those who have the external nose flattened, small, or destroyed by disease, have a corresponding inferiority of function ; and it has been noticed, that individuals in whom the sense of smell had been impaired by the destruction of the external appendage, have regained their former state by assuming noses of wax, pasteboard, or silver, for the sake of ornament only ; and as neither wax, pasteboard, nor silver, are naturally endowed either with nerves or with any power of sensation, it follows of necessity that both the original and

the substitutes act not from any special quality, but merely as physical agents under physical laws, or, in other words, that they are not themselves the seat of smell, but passive conductors leading to the latter.

The true seat of smell, or part on which the odorous particles make their impression, is the pituitary membrane lining the internal nares; and, so far as it is concerned, nothing is more certain than that, *cæteris paribus*, it is always proportioned in surface and extent to the intensity or power of function. Even in the different tribes of man, this coincidence is so remarkable as often to have arrested attention. BLUMENBACH speaks in his Decades of the internal nares of the North American Indian being of an extraordinary size; and adds, that he has observed the same excess, though to rather a less degree, in a number of Ethiopian skulls, which differed from each other in almost every other respect. SŒMMERING makes a similar remark, and adds, that these anatomical observations are in perfect harmony with the wonderful acuteness of smell possessed by these savages.

In animals, in like manner, the intensity of smell depends greatly on the extent of surface presented by the internal nares and Schneiderian membrane; and a curious mechanism is observed in many of them, whereby this condition may be carried to an enormous extent, without adding much to the bulk of the head or face. Among the Mammalia, man and monkeys present the smallest extent. The dog, the wolf, the bear, the elephant, and even the cow and horse, present a very large surface, formed by an immense number of convolutions or folds in the spongy bones, and by a great variety of cells and sinuses in the other adjoining bones, and all of which are lined by the pituitary membrane. Dr. MONRO *primus* states, that most quadrupeds have the spongy bones large, and divided into a great number of excessively fine thin lamellæ; 'and that the sensibility seems to increase in proportion to the surface in this and in all the other senses,' we conclude, he says, not only *à priori*, but from actual experience. In many

fishes, the same predominance of the organ and power of smell is remarkably conspicuous; while in animals of feeble smell, the moderate extent of the nasal cavities is in equal accordance with the more imperfect function.

The influence of Size on the function of the third part of the apparatus is not less palpable. I allude to the olfactory nerve, which perceives and transmits to the brain the impression made on the membrane. As a general rule, it bears a fixed relation to the extent of surface over which it is distributed; and it was long since proved by Drs. Gall and Spurzheim, that its size is always proportioned in the different species to the power of smell. Hence it is small in man and in the monkey tribe; scarcely, if at all, perceptible in the dolphin; large in the dog and horse; while in some animals the ganglion whence it arises is so large, as to have been mistaken for the brain itself. In the mole it is of extraordinary size, while the optic nerve is very small. In the eagle the reverse is observed, the optic being very large, and the olfactory small.

The organ of Hearing, like that of smell, consists of three distinct parts: 1. An external ear, auricle, or instrument for collecting and concentrating atmospherical vibrations; 2. An internal ear or apparatus, destined to receive the mechanical impressions of sound; and, 3. An auditory nerve to perceive and transmit these to the brain and mind. Like the external nose, the auricle or external ear is an accessory only, and not an essential part, and in many animals is not to be found. Where it does exist, however, it invariably executes its peculiar function with a force, *cæteris paribus*, proportioned to its size, and, therefore, forms no exception to the general law. Each of the other parts, also, when considered in relation to its own uses, invariably presents an intensity or power of function proportioned, *cæteris paribus*, to its size, and is thus in strict harmony with the phrenological principle alluded to.

Thus it can be physically demonstrated, that, all other things being equal, the external ear or auricle will receive, concen-

trate and transmit to the internal organ a number and mass of atmospherical vibrations exactly proportioned to the extent of its development. A beautiful and apposite illustration of this is to be seen in the enormous development of that part, said to equal in size that of a section of the whole body, in some species of bats, which are known to possess extraordinary delicacy of hearing. The principle is, in fact, practically acknowledged, and daily acted upon, even by men who theoretically deny it; and who, when they become dull of hearing, do not scruple to lessen the defect by artificially increasing the size of the despised auricle by means of the hand placed behind it, or by the still more methodical use of an ear-trumpet, which is neither more nor less than a large auricle of a peculiar shape and great dimensions. But as the auricle is not an essential part, so neither is the power of hearing, in every instance, proportioned to its size alone; for in some animals it is altogether wanting, and in many others, possessed of acute hearing, it is scarcely perceptible. Where it does exist, however, it adds to the perfection of this sense in exact proportion to the extent of its development; and it is on this principle that Dr. MONRO *primus* states, that the 'external ear, in different quadrupeds, is differently framed, but always calculated to the creature's manner of life;' and that 'thus hares, and such other animals as are daily exposed to insults from beasts of prey, have LARGE ears directed backwards, their eyes warning them of danger before,' &c.

The internal ear, or true receptacle of sonorous impressions, obeys the same law of Size; but it is so complicated and variously modified in structure, to suit the wants and habits of different kinds of animals, and the uses of its numerous constituent parts are still so imperfectly known, that it would take up too much room to prove the reality of the relation between its size and energy of function. But here, as in every other instance, if we keep in view the *cæteris paribus*, the rule will be found invariable; and it is, in fact, admitted on all hands, that, in many animals, whose superiority of function is prover-

bial, the vestibule and semicircular canals are both much larger and more perfect than the corresponding parts of the human ear.

In regard to the auditory nerve, or part which perceives and transmits the impressions made on the ear, it is equally certain that size is, *cæteris paribus*, a measure of intensity. In accordance with this, we find DESMOULINS declaring, that its proportion increases in exact relation to the difficulties of the medium in which the animal lives, and to the feebleness of the impressions which it requires to recognize; and that it is for this reason that the auditory nerve is *twenty times* more developed relatively to the size of the animal in fishes than in the mammalia or birds. It has long been known also, that most of the mammalia far exceed man in the acuteness of their hearing, and that they equally excel him in the proportional size of the auditory nerve. This is generally admitted, and may be readily verified by comparing the great size of the nerve in the sheep, the cow, or the horse, with its moderate size in man. So far, then, as hearing is concerned, the phrenological principle of Size is clearly unexceptionable.

We come now to the sense of Taste, and here also we must distinguish existing differences. The tongue and palate are merely the surfaces on which the impressions are made, and the gustatory nerve is the real organ of this sense. Dr. SPURZHEIM, then, was quite in harmony with the soundest physiological laws, when he stated, that 'the *principal condition* to an acute taste is certainly *large gustatory nerves spread over a considerable surface*;' and inferred that, therefore, the acuter taste of many animals was sufficiently accounted for by their larger nerves spread over a larger surface. Comparative anatomy, indeed, puts this proposition beyond doubt, and shows that the nerve of Taste is proportionally much larger in most animals than in man. The nervous papillæ disseminated over the pharynx, the palate, the tongue, the interior of the cheeks and the lips, are both much larger and more numerous. And

in many animals, on purpose to extend the surface of the organ of Taste, the palate is lined with a membrane disposed in furrows, and sown with nervous papillæ; and, generally speaking, the apparatus which serves for eating is larger in them than in man. And when we reflect that, in accordance with this, their chief enjoyment arises from the unceasing gratification of this sense, it will not be easy to deny them a corresponding superiority of function.

The fact, that many birds possess a very acute taste, shows that it is not to the tongue alone that we must look for its seat. The palate of some birds of prey is very copiously supplied with nervous filaments in exact conformity to their known acuteness of sense. Blumenbach has found in the duck the organs of taste very largely developed, more so than in the goose; and it is quite ascertained that the former possesses the power to an exquisite degree.

The same observation of greater size giving greater power of taste, has been noticed by physiological writers even in man himself. Thus Rullier assigns the excess of the development of the mouth and its contents in Negroes, as the condition which confers on them the acuteness and extent of taste for which they are remarkable *; and it is, moreover, perfectly ascertained, that the abridgment of this extent of surface by disease, by the loss of the tongue, for example, is followed by a corresponding diminution of function; and the sense is not altogether destroyed, only because the tongue is not alone the seat of its operations. It must, however, be remembered, that the tongue is an organ of motion as well as of taste, and that it is as essential for deglutition as for the reception of sapid impressions; and hence that it is, properly speaking, the relative size of the gustatory nerve, and not the absolute size of the tongue, that regulates the intensity of taste.

Again, the venerable quadruped Grandmamma Wolf, whose physiological opinion is so contemptuously treated by the Ed-

* Dictionnaire de Medecine, vol. x. p 309

inburgh Reviewer, was equally sound when she affirmed that she had large eyes to *see* the better; and the error which the reviewer advocates in denying this, has obviously arisen from confounding distinct parts as a common whole. Wherever the general plan and structure of the organ of vision are at all analogous, there increased size invariably indicates increased function. The scarcely perceptible eye of the mole, and the scarcely more evident eye of the bat, are in exact harmony with their imperfect vision; while the large eye of the cat, the eagle, and the falcon, and of most fishes, are remarkably in unison with the strong visual powers of these animals. But here also the *cæteris paribus* must never be lost sight of in estimating the influence of organic Size.*

Considered physiologically, the apparatus of vision must be divided into two distinct parts — the eyeb-all, or recipient of luminous rays and impressions, and the optic nerve and retina, which perceive and transmit these impressions to the brain and mind. The former, like the corresponding part of the

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* Not to do the Reviewer injustice, I shall quote his own words. In alluding to the principle of Size, he says, 'In the next place, however, the proposition is *no less contrary to the analogy of all our known organs than to general probability*. The Grandmamma Wolf, in the fairy tale, does indeed lean a little to the phrenological heresy, when she tells little Riding Hood that she has *large eyes to see her the better*. But with this one *venerable* exception, we rather think it has never been held before, that the strength of vision depended on the size of the eye, the perfection of hearing on the magnitude of the ear, or the nicety of taste on the breadth of the tongue and palate.' — No. 88. Ed. Rev.

Overlooking the contempt of the condition *cæteris paribus* manifested by the Reviewer, the predicament in which he has placed himself is by no means enviable, as his statement is at variance with all authoritative testimony. 'Large eyes,' says, for example, a celebrated Florentine Professor of Comparative Anatomy, '*generally indicate, that the animals which possess them can see well in the dark. In fishes, also, we almost always find large eyes, to fit them for living immersed in water.*' — Uccelli, Compendio di Anat. Fisiol. Compar. vol. v. p. 9.

Here, then, the Reviewer is fairly beaten by Grandmamma Wolf, who, in virtue of her *large mouth* and *wide throat*, makes but one mouthful of him. All the allies on whom he depended turn out to be *her* supporters, and not *his*.

auditory apparatus, is, in a great degree, a passive instrument, which fulfils its function, not from any vital properties, but in consequence of the physical qualities of its component parts, and therefore in obedience to the ordinary laws of matter. Its function is to receive and refract the luminous rays directed upon it, so as to form a distinct image upon the retina; and the proof that it is purely passive in doing so is, that the eye of an ox, or of any other animal, will, after death, and after being separated for some hours from the head, form an image on the retina almost as perfectly as during life; and consequently the eye-ball comes strictly under the general physical law of increase of size, all other things being equal, giving increase of power.

Keeping in view, then, its peculiar function, it becomes an undeniable proposition, that a large eye will, all other circumstances of convexity, structure, and proportion of parts being equal, admit a greater quantity of luminous rays than a small one, and thus contribute to the perfection of vision by taking in a *wider field* at one time; but to add *acuteness* or *intensity* to extent, something more is required, as I shall now show.

To feel, or to perceive, as we have already pointed out, is a function of the nervous system; and hence all the external senses require, as their *essential* condition, the presence and operation of a special nerve. In the case of vision, this is the optic nerve. Now, if the phrenological principle applies to all the senses without exception, *acuteness* or *intensity* of vision ought to be indicated, *cæteris paribus*, by the size of the optic nerve. Accordingly, the most extensive investigation proves this to be the case. The eye-ball being constructed in relation to the physical properties of light, serves merely to place the nerve or real organ of sensation in communication with the luminous rays; and thus, while the *passive* or *recipient* power is proportioned to the size of the eye-ball, the *active* or *percipient* bears an uniform relation to the size of the nerve and of its expansion in the retina.

When, for instance, we compare the organs of vision in the

falcon, the eagle, or the vulture, which perceive at a glance, and from the greatest conceivable altitudes, and in a horizon of several miles, a hare, a partridge, or a reptile, often, from its color analogous to that of the soil, invisible to us at half-gun shot, with those of other birds, as some species of geese and swans, which rise to equal heights, but which, like man, do not distinguish minute objects, but are guided in their flights by general outline, by rivers, mountains or plains; we find the difference of function in the former to depend chiefly on an enormous preponderance of the nervous apparatus belonging to the eye, and the regular gradation of which in relation with the function is very remarkable. In the Stryx flammea, or screech-owl, for instance, whose sight is imperfect, the ganglions, from which the optic nerves arise, are estimated by Desmoulins as not exceeding in size one-twentieth, while in the eagle the same parts represent at least one-third of the whole encephalic mass, the nerves themselves being in the same ratio.

In like manner, according to Desmoulins, in the gallinacea, which see little more than the surface with which they are in actual contact, the eye is proportionally much smaller, the nerve thinner and longer, and the optic lobe also much smaller than in the duck tribe, whose sight is proportionally more acute; and in the falcon, the organ, nerve, and power of vision, all reach their maximum of development. In birds of prey, with piercing sight, the optic ganglions are said to exceed in size those of birds of ordinary vision by at least five or six times. Indeed it was the great size of these very ganglions in birds in general that led to their being mistaken for the optic thalami, until Gall and Spurzheim pointed out the error and its cause.

I have heard the celebrated ornithologist, M. Audubon, give an account of the habits of the vulture, which accord precisely with the doctrine here laid down, in regard to the influence of organic size both on sight and smell. It has been a very commonly received opinion, that vultures, and other birds of prey, are attracted to the carrion by the smell which it emits. But

nothing, said M. AUDUBON, could be more erroneous than this, as the power of smell is in these animals extremely imperfect, while vision is as remarkably acute. To prove this, M. AUDUBON had repeatedly left dead animals under a sort of shed, by which they were screened from sight, but to which any bird could have easy access; and although they remained till the stench became perfectly intolerable, no vulture or other bird ever approached them; but if in this state the carrion was exposed to view, it invariably happened that in the course of a few hours it was attacked and devoured.

To prove that it was vision alone that enabled these birds to distinguish their prey, M. AUDUBON next made a train from the shed to a little distance with fresh blood, and although no smell was perceptible, it invariably happened that, in a very short time, the bird was attracted to the spot, and, following the line of blood, entered the shed and devoured the flesh, still too recent to emit any odor. But if any considerable space was left between the visible trace and the concealed object, however strong the odor which it emitted, the bird never seemed to suspect its presence. And in accordance with these facts, and with the law of size giving energy of function, M. AUDUBON mentioned, and indeed it is generally known, that these predatory birds are almost as remarkable for deficiency in the size of the nerve of smell, as we have shown them to be for excess in that of vision.

To effect the purpose of increasing the size of the optic nerve in these animals, without adding injuriously to that of the eye itself, an admirable contrivance has been resorted to. Instead of forming a single membrane lining the inner surface of the posterior chamber of the eye, as in man and animals of ordinary vision, and, consequently, only equalling in extent the sphere of the eye to which it belongs, the retina in these quick-sighted birds of prey is found to be composed of a great number of folds, each hanging loose into the eye, and augmenting, in an extraordinary degree, not only the extent of nervous surface, but the mass of nervous matter; since, according to the

estimate of Desmoulins, from whom I take this account, the actual thickness of the membrane of the retina is, with few exceptions, equal in all animals, from man and the ox, to the eagle and the duck; and, consequently, the nervous mass in the eye of the eagle, for example, exceeds in proportion that of man, by the quantity which goes to form the folds already alluded to. This structure exists at its maximum in eagles, vultures, and falcons, and surely this is in harmony with their noted acuteness and intensity of vision.

The utility of disposing this increase of nervous matter in folds is obvious enough. Had the additional mass gone merely to add to the thickness of the retina, great part of it would, from its opaqueness preventing the transmission of the luminous rays, have existed in vain; but, by being thus disposed in folds, formed of layers sufficiently thin and transparent to allow of the passage of the rays of light through to their ultimate extinction in the choroid coat, every nervous point is brought into direct contact with the light, and from the sum of the whole arises the intensity. Desmoulins calculates, that in the royal eagle, four folds exist in a space that in an ordinary eye may be counted one; and, as each fold consists of a membrane folded on itself, and thus presents in reality four sides, consequently every ray of light comes in contact with sixteen points of nervous surface instead of *two*, where the retina is, as in man, a single membrane. This calculation may be erroneous, but it is more than sufficient to establish the relation existing between size of organ and energy of function, which it is our present object to prove.*

In further corroboration of the same principle, it may be mentioned, that, when these quick-sighted animals are deprived of the exercise of the sense of vision, in so far as regards ob-

* In regard to this and some of the other illustrations, I beg to say, that although I am satisfied of their general accuracy, I do not wish to be considered as vouching for the perfect correctness of all their details. To do so would require a more extensive and minute acquaintance with comparative anatomy than I can pretend to.

jects placed at great distances, and for the perception of which alone strong vision is required, the nervous folds begin to diminish, and ultimately disappear, leaving the retina single, as in animals of ordinary vision. M. DESMOULINS observed this diminution in the otherwise healthy eyes of a royal eagle, which died at the menagerie in Paris; and in another, which became blind before death from ophthalmia, he found the retina quite smooth, and without a vestige of any fold, and the optic nerves reduced in size by two-thirds. That this atrophy resulted from the diminution and privation of function was proved by MAGENDIE producing the same phenomena in the eye of a pigeon, by simply excluding it from the light for twelve consecutive days; and, this being the case, can the relation between size and energy of function be for a moment reasonably doubted?

Not only, indeed, has organic size been generally regarded by physiologists and anatomists as a measure of energy of function in the case of the five external senses, but, what is more to our purpose, the same principle has been virtually if not expressly admitted and acted upon in all ages, by the most celebrated authors, as applicable to the brain itself, and has never yet been called in question, except for the interested and prejudiced purpose of opposing Dr. GALL. For the sake of those, however, who, like the Edinburgh Reviewer, consider it as much too rediculous to be received by philosophers, I may subjoin a passage from a Report, by the celebrated CUVIER, to the French Institute, in 1822, in which it is broadly recognized. Speaking of the cerebral lobes being the place 'where all the sensations take a distinct form, and leave durable impressions,' he adds, 'l'anatomie comparée en offre une autre confirmation dans *la proportion constante du volume de ces lobes avec le degré d'intelligence des animaux:*'—Thus admitting the influence of *size* of the cerebral organs upon the power of manifesting the mental faculties, as distinctly as Dr. GALL himself can do. And it must farther be remarked, that CUVIER here speaks the sentiments of PORTAL, BERTHOLLET,

Pinel, and Dumeril, who, along with himself, formed a commission to examine and report upon the experiments of Flourens. This statement, however, taken in detail, is not sufficiently precise; for, in point of fact, the degree of intelligence is not in relation to the size of the *whole* hemispheres, but only to that of their anterior lobes: when I quote it, therefore, in support of the *principle*, it is not because it makes the fact either clearer or stronger to those who had observed for themselves, but because it has been much the fashion to refer to, and hold up the *opinions* of eminent men against Phrenology, even although thay had not studied it, as deserving of far more weight than the *observations or facts* of those who had; and because many are willing to yield to authority, in order to save themselves the trouble of consulting nature. Had this testimony of Cuvier, and his learned associates, been merely an *opinion*, I would not have brought it forward; but as it contains the expression of unbiassed fact, the result of extensive observation, under the most favorable circumstances, I do think it merits attention.

Nay, so generally is the principle virtually recognized and acted upon, that, on examination, it appears that all the methods of investigation hitherto thought of for discovering the functions of the brain, which have succeeded in arresting for a moment the attention of philosophers, or which have led to the establishment of any general or important truth, rest on the basis of size alone. But, as this is a point of some consequence to our argument, I shall add a few remarks in proof of my statement.

The first proposition of this kind which I shall notice is that which, admitting the brain to be the organ of mind, affirms the intensity of its functions to bear a direct relation to its general or absolute size. Thus man has a larger brain than most animals of much greater dimensions than himself; and, from observing this fact, Aristotle, Erasistratus, Pliny, Galen, and also many modern writers, inferred that superiority of function, and consequently of intelligence, depended always on the

*absolute size* of that organ. And although this rule holds in a general manner, it is still liable to many exceptions, the elephant and some cetaceous animals having larger brains, but much more limited intellect, than man. The dog and the monkey also have a smaller cerebral mass than the horse, the ox, or the ass, and yet the former greatly excel the latter in point of intelligence. Here then, is one method, which recognizes distinctly the phrenological principle of Size, and, as will readily be understood, it fails in leading to individual truth, only because, as was done with the nerves, it erroneously takes for granted the singleness of structure and function of the cerebral apparatus, and attempts to find *one* general function proportioned in intensity to the size of *one* supposed general organ, without considering that, if this were the case, the only possible difference that could exist between animals with large brains and animals with small brains, would be simply *a greater or less degree of the same qualities of intellect and of propensity;* and that thus a sheep, whose brain is nearly the same size as that of the tiger, ought necessarily to possess the same ferocity and energy which distinguish the latter. Here, then, the fault lies not in the principle, but in its erroneous application.

Other physiologists, perceiving the palpable objection to the first method, have recourse to a second, still founded on the principle of Size, which they hope will be found without any exceptions. They propose to measure the extent of intelligence and instinct by comparing the proportion which the mass of brain bears to that of the whole body; and here, again, the general, but not the individual results, are in harmony with the experience. Thus, although the brain of the elephant is absolutely larger than that of man, yet, when compared to the bulk of its body, the proportion becomes infinitely smaller, and this difficulty is got over. But, unfortunately, Sœmmering, Blumenbach, and Cuvier, soon found that the sparrow, the redbreast, the wren, the canary, and some species of monkeys, have brains much larger in proportion to their bodies

than man himself. This rule, therefore, would not do, and its fallacy arose from expecting to find an uniform proportion existing between parts totally dissimilar, and of totally different functions. Its failure, therefore, so far from forming any objection to the principle on which it is founded, serves only to show, that the *cæteris paribus* have been lost sight of in its application.

Sœmmering, and some other physiologists, finding this rule fail, thought they had found out another still in accordance with the principle of Size. It was, that the volume of the brain, compared with that of the nerves, would give an exact measure of the degree of intelligence; and, generally speaking, man has certainly greatly the advantage of most animals, in the excess of proportion to his cerebral mass compared to that of the nerves. But this is again instituting a comparison between distinct and independent parts, and therefore it is not without many exceptions; for, in the monkey, in the dolphen, and in many birds, the proportion is higher than in man, and the intelligence is infinitely less. Besides, as each nerve performs a distinct function, there is no sort of proportion between the size of different nerves in different animals, and therefore no just standard of comparison. In one animal, for instance, the optic, in another the auditory, in a third the nerves of motion, and in a fourth those of sensation, greatly predominate, without any necessary proportion between any or all of them and the brain; and hence this method is not satisfactory, although it was, and I believe still is, patronized by Cuvier.

Cuvier, Sœmmering, and Ebel, however, regard the proportion between the size of the brain and that of the spinal cord as the most infallible measure of intelligence; because, they say, it is by this proportion that we estimate how far the organ of mind prevails over the external senses; but, as these two parts are perfectly distinct, and perform independent functions, it often happens, that the proportion does not indicate the truth, and hence it cannot be used as a correct measure. Cuvier himself acknowledges exceptions, and cites the dolphin as one;

but, in proposing this rule, the principle of Size is again admitted as a measure of function.

Other physiologists, as Richerand, Dumeril, and even Cuvier and Sœmmering too, have recourse to another modification of the same principle, and affirm, that intelligence is in exact proportion to the degree in which the size of the brain preponderates over that of the face: Man is, according to them, at the top of the scale; and the most stupid and ferocious animals, from their enormous jaw-bones and small brains, are at the bottom; and this arises, they add, from the whole existence of these animals being concentrated in the exercise of the senses of taste and smell, whose organs are thus extensively evolved. Cuvier, indeed, tells us, that the ancients had perceived this rule, and, on this account, gave to their heroes, sages, and demigods, large and prominent foreheads, in combination with moderate-sized faces. This idea has even been very generally received among the public; but it is not strictly in harmony with experience. For it is not in reality the large brain in proportion to the small face that gives the superiority of intellect, but the large anterior cerebral lobe itself; and it is a matter of perfect indifference to the corresponding mental functions, whether the adjoining face be large or small, Leo X., Montaigne, Racine, Mirabeau, and Franklin, had all large brains, joined with large faces. Bossuet, Kant, and Voltaire, had, on the contrary, the same large size of brain, but with proportionally much smaller faces. The small size of the face in the latter would indicate an inferiority in the functions which are executed by its component parts; but it would certainly neither add to, nor detract from, the energy of the cerebral functions, the brain itself remaining the same.

The celebrated facial angle of Camper, which some affect to consider as very superior to the method of Dr. Gall, is itself founded on the obnoxious principle of Size being an indication of energy, — and it would be well for those who object to the groundwork of Phrenology to recollect this fact. Camper's angle is formed, as is well known, by drawing one line

from the incisory teeth in the anterior part of the upper jaw, to the meatus auditorius, and prolonging another from the same part to the most elevated part of the forehead. The more nearly the angle formed by the junction of these two lines approaches to a right angle, or, in other words, the larger the anterior cerebral mass, the higher will be the degree of intelligence; and *vice versa*, which, as a general rule, is quite true; and LAVATER has formed a scale of perfection in conformity with it, from the frog up to the Apollo Belvidere. As nature affords numberless facts in accordance with it, the facial angle has been almost universally received, even by anatomists and physiologists; and, in spite of opposite facts, many philosophers still feel very averse to abandon it; and CUVIER furnishes a long list of animals in its support. But, although this method leads, in many instances, to accurate results, and is in perfect harmony with the principle of Size, still, from overlooking obstacles to its universal application, it occasionally fails.

In the *first* place, it measures only the prominence, without the breadth, of the anterior parts; and takes no cognizance whatever of any of the dimensions of the upper and back parts of the brain. *2dly*, From the small size of the jaw in the infant, the facial angle is then, according to CUVIER, one of 90 degrees, while in decrepit old age it dwindles to 50 degrees; it therefore changes at different periods of life, without indicating a corresponding change in the degree of intelligence. *3dly*, The mass of brain being the same in two individuals, one with a large projecting jaw, like a negro, and another with a small jaw like VOLTAIRE, the angle will indicate a difference of 10, 15, or 20 degrees, where no difference of intelligence really exists. *4thly*, According to BLUMENBACH, three-fourths of the animals known to man have the same facial angle, *with every possible difference in the kind and degree of faculties which they possess.* *5thly*, The external table of the skull is, in many animals, at such a distance from the internal, as to afford no index whatever to the size of the brain. The elephant is a familiar example. Hence, and for many other

reasons, CAMPER'S invention is inapplicable, and does not offer results in harmony with experience.

The last method which I shall mention as founded on the principle of Size, is that which proposes to compare the size of the brain with that of the cerebellum. But the same objections apply to this as to all the preceding plans; and the mention of them here is valuable, only from demonstrating, that the fundamental phrenological principle of Size being, *cæteris paribus*, a measure of power, instead of being a new or an unfounded proposition, emanating from the fancy of an enthusiast, is one of the oldest, best established, and most universally received in the whole range of modern physiology, or of modern science; and, consequently, that when any of the opponents of Phrenology, more zealous than enlightened, think proper to dispute its truth, it is incumbent on them to adduce evidence in support of an opinion, which is in direct opposition to that which observation has led mankind in all ages to adopt. The only question which remains for us to answer, is the very natural inquiry, how does Dr. GALL, in *his* application of the universally acknowledged principle, contrive to surmount the obstacles which have hitherto impeded the course of all his predecessors? — and it is this we shall now attempt to explain.

We have already seen, that the error of supposing the external senses not to be influenced by the size of their organs has arisen, not from any fault in the principle itself, but entirely from overlooking the existing distinction of parts, and from confounding functions in themselves separate and independent, and, therefore, not necessarily proportioned to each other, or, in other words, from the *cæteris* not being *paribus*. Now this is precisely the rock on which the successive attempts at discovery of the cerebral functions have also split, and by, at first accidentally, avoiding which Dr. GALL has been so peculiarly successful. The brain is not a single organ performing in all animals a single function; it is an aggregate of parts, like the compound nerves so often referred to, appropriated to different

uses; and, consequently, unless we distinguish these from each other, and apply the principle of Size to each separately, it will be utterly impossible to discover any method, which will be susceptible of universal application. Thus, before we can expect to arrive at a true and invariable result, by comparing the absolute size of the whole brain of one animal with its absolute size in another, it will be necessary to show, — 1*st*, That the brains of all animals are composed of analagous parts performing similar functions; and, 2*dly*, That these parts invariably bear the same proportions to each other; or, in other words, 1*st*, That all animals are endowed with precisely the same faculties of instinct, of propensity, and of intelligence; and, 2*dly*, That they all possess these in the same invariable proportion to each other, which is the same as to say that a tiger and a lamb have kindred qualities, or to announce a proposition at variance with all surrounding nature.

Again; if even in the same species, as in man, different parts of the brain perform different functions, and differ in every individual, in their relative proportions to each other, can it reasonably be expected that absolute size, in *whatever part* it may chiefly exist, should indicate absolute intensity of *intellect?* Thus it is not rare to meet with a brain which, from the great size of the posterior lobes, or organs of the propensities, surpasses in absolute size another brain, of which the chief development is in the anterior lobes, or organs of intellect. Now, the rule of absolute Size, applied here to the neglect of the palpable difference of parts, would rate the former as the highest in point of intelligence, when experience would prove the reverse to be true; and the apparent discrepancy might lead the experimenter to doubt the infallibility of the principle of Size, where a little more knowledge would have shown the fault to lie only in the mode of its application; and it is here that Phrenology has been eminently successful, from comparing intensity of *individual function with size of individual organ*, instead of grouping together distinct and independent parts, and expecting a general and invariable

result to spring from every variety in the proportions of these parts.

The same insuperable objection lies against comparing the mass of brain with the mass of nerves. The former is not homogeneous, and, as a whole, it bears no proportion to the size of the nerves, because the functions of the latter are quite different from those of the former. In one animal, for instance, the anterior or intellectual part of the cerebral mass is considerable, while in another, whose brain as a whole is perhaps larger, the posterior part, or organs of the propensities, is the most developed, the mass of nerves being nearly equal in both, and yet the former, with the smaller brain, would unquestionablybe the more intelligent ; but the latter, on the other hand, would excel in intensity of passion and propensity.

Camper's facial angle, and the other methods already mentioned, fall to the ground from the same defect. The anterior part of the brain measured by the angle is not a single part with a single function, as is taken for granted ; and hence, the proportions of its component parts being neglected, error unavoidably arises in drawing general inferences, just as the Edinburgh Reviewer falls into error, by mistaking the external nose for the whole organ of smell, and the external ear for the complete organ of hearing, and inferring, from the senses not depending for their acuteness on the size of these parts alone, that therefore Size does not add in any degree to the intensity of their functions.

With these sources of error clearly in view, and with the principle of Size for our guide, it may seem an easy matter to proceed a step further, and, like Dr. Gall, at last to unfold the true uses of the brain. But plainly as these principles *now* open to our view the path of knowledge, it was not by tracing them to their consequences that Dr. Gall actually made his discovery. He never thought of this any more than did those who preceded him. It was the casual and repeated observation of the concomitance of great energy in a particular mental power, with great size of a particular and individual

part of the brain, that first arrested his attention, and forcibly directed his notice to the inquiry, whether these facts were connected in the relation of cause and effect, and whether other mental powers might not also depend for their energy on the size of other individual parts of the brain; and it was not till years after he had satisfied himself by the most extensive and varied experience, that the energy of several, at least, of the mental qualities bore an uniform relation, *cæteris paribus*, to the size of particular parts of the brain, that the idea occurred to him of tracing the relations of these parts to the general principles of physiological and natural science. This, then, while it proves, that, let Phrenology be what it may, still it is NOT the offspring of theory, affords also strong grounds of probability in favor of its truth, from the circumstance of all its doctrines, picked up as it were piece-meal, being in perfect harmony with the best established principles of science, and, consequently, offers a strong inducement to every reasonable and inquiring mind, to enter upon its serious and candid examination.

Supposing, then, that the new physiology of the brain shall ultimately prove to be true in all its essential points, however much it may require correction in some of its details, it follows, that the encephalic mass consists of numerous parts, each executing an appropriate function, and that a knowledge of these, and of the conditions under which they operate, will, if ever obtained, throw great light on the history and treatment of Insanity, and of all the other diseases to which the nervous system is liable; and that every primitive mental power being manifested by, and subjected to the influence of, a distinct cerebral organ, an acquaintance with the morbid changes to which that organization is liable, must in reality constitute a knowledge of what are erroneously termed Mental Diseases. Such, accordingly, is the fundamental proposition of the present publication.

## CHAPTER III.

### MENTAL DERANGEMENT IS ALWAYS SYMPTOMATIC OF CEREBRAL DISEASE.

Moliere, and many other very witty men, have made themselves merry at the expense of the medical profession, and have most successfully ridiculed the uncertainty of opinion and inconsistency of doctrine for which medicine has long been proverbial; but, when their own lives have been in danger, most of these satirists have nevertheless had recourse to professional assistance, with an alacrity that testified to their serious belief, that the medical art has at least a partial foundation in the nature of things, and that its professors are in possession of an extent of ascertained knowledge, which, if well applied, would give their patients a better chance for their lives, than they would have if left to themselves. The conclusion to be deduced from this is worthy of attention; for it leads to important practical results. It is, that the inconsistency complained of does not arise from the absence of invariable and permanent principles, according to which the various functions of the human body are carried on with the same regularity and precision with which the phenomena embraced by other sciences occur, and according to which they ought to be treated when diseased, but springs entirely from our imperfect acquaintance with these principles, and with the numerous modifications which they undergo from the action of the many opposite influences to which the body of man is, in

the course of life, exposed; and that, consequently, in proportion as our knowledge shall become more extensive and accurate, from more careful observation, we may reasonably expect to see the contradictions and inconsistencies of opinion, which have hitherto thrown obloquy upon medicine as an entirely conjectural art, gradually disappear, and give way to sounder and more useful views.

In pursuing medical inquiries, it is encouraging to know, that the difficulties by which we are surrounded are ascribable chiefly to this latter cause, and to feel assured, that the mental and bodily constitutions of man did not come from the hands of the Creator undefined or imperfect; and that all the animal functions are regulated by fixed and determinate laws, and have fixed and determinate relations to every class of external objects. Because, if this view be correct, and if the causes of disease, and the agents employed for their prevention and removal, have thus definite properties, and act upon a system regulated by definite laws, then medical science must necessarily advance in proportion to the progress made in the discovery and appreciation of these, and of their relations to each other; and every new error into which we may fall, instead of deterring us from pursuing our investigations, becomes a new beacon to guide us past some of the dangers to which we were formerly exposed. Whereas, if medicine were, as the unthinking are fond of asserting, an art without principles, permanent as Nature herself, its advancement would be as hopeless a task as ever attracted and deluded the ingenuity of man, and its cultivation ought to be abandoned forever, like the dreams of the alchymists, and their searches after the elixir of life and the philosopher's stone.

A conviction that medicine rests upon fixed principles, which only require to be ascertained and applied to raise it to its proper place among the sciences, is nowhere more valuable than as applied to the subject of the diseased manifestations of mind, — an application to which, since the discovery of the true physiology of the brain by Dr. Gall, we are now fortu-

nately competent. It is, for instance, an established principle in pathology, that every derangement of function is always accompanied by a disorder either in the structure, or in the mode of action, of the organ which performs it, and without the removal or cure of which the function cannot be restored to its healthy state. Acting on the faith of this law of the animal economy, we almost instinctively, on being called to examine a patient, begin by finding out what functions are chiefly vitiated, and through them go back to the organs which execute them, and there, by local and other symptoms, seek the kind of disease which has caused the aberration of function; and in a great variety of cases, by following this procedure, we succeed perfectly in determining the seat, nature, and method of cure of the disease which we are called upon to treat.

But when we look to the notions and the modes of proceeding which have long prevailed in regard to insanity, and which are even yet too frequently met with, we see a melancholy reverse of the picture. From ignorance of, or want of confidence in the fact, that the principles of medicine are immutable and permanent in their operation, our predecessors were contented to look upon the disjointed phenomena of mental derangement as the inscrutable consequences of an affection of the immaterial principle of mind, or as a particular dispensation of Providence, which they could not be expected either to understand or to remedy; and, accordingly, while this view continued to influence their practice, all sorts of incongruous and barbarous measures were adopted against the miserable patients, and the short fit of frenzy was too often converted into permanent mania, or hopeless fatuity. While, had the law already referred to, of the constant connexion between the state of the organ and the mode of its function, been familiarly known, and the universality of its application confided in, it would at once have led the medical observer to investigate the condition of the organ whose function it is to manifest the mental faculties, to look to it for the seat of the morbid

action, and thence to determine its nature and treatment on rational, experimental, and consistent grounds. But phrenology having at last demonstrated that the brain is the organ in question, and that the true pathology of insanity is to be sought in the history of the various diseases to which the cerebral structure is liable, we may now hope for the dawn of a brighter day.

Knowing nothing, and, in this world, having no means of knowing any thing, of the nature of mind, as it exists independent of and separate from the organization with which we observe it to be connected during life, we can only study the capacities and modes of action which it exhibits to us in its combined or compound state; and to attempt any thing beyond this would be not only unnecessary, but utterly useless labor. We cannot reach the principle of mind to modify its qualities or manner of being. We can reach it only as acting through the medium of and influenced by its material instruments; and consequently all attempts to improve its powers, and to extend its limits, must be conducted with a constant reference to the organic conditions under which it acts, otherwise they will to a certainty fail of success. During life, indeed, the closest relation obtains between the mode of action of the various mental powers and the condition of their respective organs, every change in the state of the one being always accompanied by a corresponding change in the state of the other. All the faculties of thought and of feeling are feeble and inefficient in infancy, not from any defect in the immaterial principle of mind, but simply from the imperfectly developed condition of the organization which in this life is required for their adequate manifestation. Some animals see distinctly immediately after birth, but hear very imperfectly; others hear, but do not see; and others again are almost insensible alike to sounds and to vision. Every body knows the explanation of these facts. In one animal, one organ of sense is early developed, and in another a different organ is first matured. And, in like manner, in infancy, some internal

faculties, the organs of which are early developed, precede in maturity others, the organs of which are not fully developed till much later in life. In youth, the observing powers preponderate in energy and activity, and the corresponding cerebral organs bear a visible predominance over those of the reflecting faculties which come later to maturity; thus demonstrating at every step the intimate connexion between the mode of action of every faculty and the condition of its own material organ.

If we look at the mind as a whole, we shall find it following the same rule of progression. In infancy the mental powers are feeble and vacillating in their exercise; quick, variable, and active in youth; vigorous and enduring in manhood, and again deficient in energy and vivacity in old age, in exact correspondence to the progressive changes in the organization of the brain from that of very imperfect structure in infancy to that of progressive maturity and decay, as occurring successively in youth, in manhood, and in old age.

The effects of fatigue also, and the necessity of sleep for recruiting the mind as well as the body; the changes in thinking and in temper caused by the corporeal states of repletion and of hunger; the effects of wine, opium, and alcohol; the changes, the almost total abolition at one time, and astonishing excitement, force and irregularity of action at another, of the different powers of the mind, in consequence of bodily disease, or of accidents, show incontestibly the never-ceasing dependence of mind on brain in this world.

Not only, however, do the mental powers follow the regular and comparatively durable changes thus brought about in the condition of their respective organs, but, as already alluded to, they are also affected in an equally evident manner by every change, however slight, and of however short duration, to which the organization is subject, either from external or internal causes. The touch of a hair upon the skin, the falling of a single ray of light upon the eye, or of a single atmospherical pulse upon the ear, are sufficient to cause corresponding

changes in the state of the mind. Sudden compression of the brain is well known to deprive the patient of all mental power; and it has even happened again and again, that where an opening existed in consequence of a fracture of the skull, by pressing the brain with the finger, consciousness was destroyed, to be restored on the removal of the pressure; and the repetition of the experiment was attended with precisely the same results.

A morbid state of any part may be induced either by causes acting directly upon its function, or by causes immediately affecting the substance of which the part is composed. Thus inflammation of the eye may be excited either by stimulating its function by too much light; or by sand, or lime, or cold air coming in contact with its surface. The brain offers no exception to this rule; and it is proper to notice the fact, as it explains how derangement of the mental faculties came to be considered apart from their corporeal cause. One person, from a reverse of fortune, great affliction, disappointed love, or intense study, becomes insane, or falls into delirium, with all the symptoms of an affection of the brain; and another, from an injury, from a *coup de soleil*, or from intoxication, falls into the same state. The former presents a marked example of excitement of function inducing disease of the organ; and the latter is an instance of the same result being consequent upon direct application of an external influence to the part itself. And the true relation between the two states was not sooner perceived, because it was always forgotten that the function of the brain is to manifest the mind, and that, in so far as the manifestations of the mental powers are concerned, the agency of the brain is as indispensable as if it were the mind itself.

The bearing of the above facts upon the subject of the imperfect or diseased manifestations of the mind will be sufficiently obvious. Hitherto a singular and unfortunate distinction, for which there is no real ground, has been made by medical men, as well as by the vulgar, between the morbid derangements of the external and those of the internal faculties of the

mind. The organs of external sense having been long known, every disturbance of their functions has been justly ascribed to an affection of their material organs, and the efforts of the physician have been directed to the discovery of the nature of the particular affection then existing; and by this the treatment has always been regulated. But when an internal faculty of feeling or of thinking has been deranged, instead of having followed the same rational course, and ascribed its aberration to an affection of its cerebral organ, we have hitherto generally contented ourselves with the simple but vague affirmation, that the mind was deranged, and have not cared to inquire what was the particular organic cause of the disturbance of function. And yet there is really no greater difference between the external and the internal faculties, as they are called, than between one external sense and another. All are equally powers of the mind, and differ only in having different functions to perform, and in each being connected with an apparatus fitted for its specified function. The mind requires an optic nerve with an external eye to enable it to see, because light is an external existence with which it must be connected; and it requires an internal cerebral organ to feel the sentiment of justice, because justice is not an external quality, but a mental or internal relation. The mind requires an external organ to enable it to hear, because the vibrations of the air are external existences with which it must be connected; and it requires only an internal organ to feel the sentiment of pity, because pity is not a quality of matter, but simply a mental state or relation. The organs of the five senses are therefore merely parts added to the other cerebral organs, in order to connect the faculties of Color, Form, Tune, Size, Number, &c. with the external world; and the powers of Seeing, Hearing, Tasting, Touching, and Smelling, are neither more external to, nor less intimate parts of the mind itself, than any other power, whether of thought or of feeling; and the well-being of the brain is alike necessary to the exercise of all. If, then, the manifestations of the mental faculties, in a state of health, de-

pend on the healthy condition of their organs, external and internal, and a change in the state of the mind attends even the slightest alteration in that of the brain, it follows that a morbid condition of the organ of mind must be attended with morbid manifestations, or, in other words, with mental derangement, and that, without the previous removal of this organic cause, the mental health can never be re-established.

The time has been, and, we fear, is scarcely yet gone by, when such a doctrine, however much recommended by observation, and enforced by experience, would have been denounced by the unthinking or prejudiced as dangerous to religion. It would have been, and indeed still is argued, that to trace the dependence of insanity upon a bodily cause, is to confound together mind and matter, and to teach that the brain is the mind, and thereby to destroy the strongest proof of the soul's immortality. But, happily for humanity, truth and reason are as imperishable as mind; and now that, under their influence, prejudices are fast giving way, it is more and more widely acknowledged, that it is the old and false doctrine of the *mind* being subject to disease, which is justly chargeable with the apprehended danger; and that, if the immortality of the soul can be proved in any way by reason alone, it is only on the grounds which we are now advocating, since on them only can a rational and safe theory of mental derangement be successfully established. The relation which we have shown to exist between the state of the mind and the condition of its material organs, explains easily why, the immaterial principle remaining essentially unchanged, the mind develops its powers as we advance from infancy to maturity, and again declines from maturity to old age; why it falls asleep in the night, or loses consciousness from a blow on the head; why its manifestations are disturbed by intoxication, or deranged by disease; why it is characterized in one by the weakness of idiocy, and in another by the strength of genius. And in the fact, that the mind never manifests itself in this world except through the instrumentality of corporeal organs; and that the condition

of these organs influences the quality of the manifestations, we have an easy explanation of the origin of mental derangement, and of the possibility of its occurrence, without endangering the principle of mind. The mind *sees* through the medium of the eye, just as it *thinks* or *feels* through the medium of the brain; and as changes in the condition of the eye deteriorate or destroy the power of vision without any affection of the principle of mind, the obvious inference follows, that in like manner may changes in the condition of the brain derange or destroy the power of feeling or of thinking, and yet the mind itself, or soul, remain essentially the same.

But if we refuse to admit the influence of the organization, and ascribe the varying mental states to variations in the immaterial principle, unconnected with any corresponding bodily cause, then we must also hold that the defective mind of the idiot, from birth, has been purposely created thus mutilated and limited in power; that it is the mind itself, and not the body, which is disordered by wine, set to sleep by opium, and apparently annihilated by a blow on the head; that it is the mind itself, and not its corporeal organ, which is weak in infancy, strong and active in maturity, and again feeble and decrepit in old age; that it is the mind itself, and not its bodily instrument, which is subject to delirium in fever, and to the thousand other forms of disease which impair, derange or suppress the mental faculties. And if we admit all this, at what point are we to stop? If the *soul*, the immaterial principle be thus subject to disease and to *apparent* annihilation, and to changes which, whence once begun, no one can tell where they are to stop, it becomes impossible for a moment longer to draw any evidence of its immortality from reason alone, because every presumption would then be against it. But, on the other view, that it is the organ which suffers disease and disturbs the mind, no difficulty whatever presents itself; and the doctrine remains open to every proof which can be urged in its favor.

Mental derangement, then, properly speaking, is a disorder-

ed state of the functions of the brain, arising from some existing morbid action in that organ, which may or may not involve at the same time the functions and organs of the external senses, but which frequently exists without any such complication, and which must be remedied before the alienation can be removed. Ignorance of the physiology of the brain has alone prevented this great truth from being generally perceived and acted upon; but now at last, thanks to the genius, intrepidity, and unwearied industry of Dr. GALL, this obstacle has been almost surmounted, and a light thrown upon the subject by his discovery of Phrenology, which promises to lead to the most beneficial results, and which has already divested the subject of madness of much of its obscurity, and, let us hope, of some of its terrors. Years must no doubt pass on before our knowledge of the functions of the brain will be complete, and before an adequate conception can be formed of the advantages which will ultimately accrue to medical and moral science from their discovery; but the great principles are already firmly established, and already, by the simplicity of their application to the elucidation of the morbid states of the human mind, they give evidence of their foundation in truth, and of their incalculable superiority to the mere speculations and groundless theories which have so long usurped their place.

By constantly drawing attention to the connexion subsisting between the power of manifesting every mental faculty, and the condition of its particular cerebral organ, Phrenology places derangements of the internal faculties in the same relation to the organic affection producing them in which Physiology places the derangements of the five external senses. Sight is never impaired, nor hearing destroyed, unless the organs which execute these functions are diseased; and, in like manner, thought and feeling are never deranged, unless the cerebral organs by which they are manifested have undergone some morbid change. And as sight is injured by a great variety of morbid alterations in the eye or its nerves, so are the internal faculties of the mind deranged by a great variety of

diseases affecting the brain. Even if we had not direct proof of the dependence of mental derangement on various cerebral affections of a different nature, the force of analogy is still so strong as of itself to establish the fact, and to satisfy the most sceptical inquirer that insanity is not a single and unvarying disease. Every affection to which an organ is liable may derange its function, and therefore disturbance of the functions of the brain may attend a variety of different cerebral states, each characterized by its own symptoms, and requiring its own mode of treatment. The eye, for example, is the organ of vision, and any affection of the eye, *whatever its nature*, may derange its function, and impair sight. The eye may be inflamed, or it may be distended with water, or opacity may cover its convex surface, or the optic nerve may be paralytic; and, as a consequence of *all* these states, impaired vision or blindness follow. Impaired or destroyed vision is therefore not a specific disease, but merely a proof or symptom of the existence of some affection, having its seat in the organ of sight, the real nature of which must be determined by other means. The ear is the organ of hearing, and all affections, of whatever nature, which have it for their seat, may injure its function. The ear may be inflamed, or the tympanum may be ruptured, or the acoustic nerve may be paralytic, and, as a consequence, hearing be destroyed; also showing that impaired hearing and deafness are not diseases, but merely symptoms attending maladies which have their seat in the ear. The lungs are the organs of respiration, and all causes, of whatever nature, affecting them, may derange their function, and impede breathing. The lungs may be inflamed, or may be the seat of an extravasation of blood, or they may be compressed by water or air in the chest; and, as a consequence, in all these cases, respiration may be impeded; so that dyspnœa, or difficult breathing, is not a disease by itself, but merely a symptom attending diseases which have their seat in the lungs. And, in like manner, the brain is the organ of mental faculties; and any affection, of whatever nature, having it for its seat, may disturb its function, or the mental

manifestations. The brain may be inflamed, or it may be excited by wine, or compressed by water, or by a fracture ; and, as a consequence in all, the mind be disturbed. Derangement of the mind, therefore, is not a specific disease, but is a symptom attending many different affections, which may agree only in the single point, of having the brain for their seat.

Many of my readers may think that I am taking a great deal of trouble to prove what is either self-evident, or of very little value even when proved. But it is not so ; for many physicians have regarded madness as always the same disease, and either as altogether unconnected with corporeal illness, or as depending on abdominal derangement ; and yet, were any physician to propose to treat disordered action of any other functions without regard to the state of the organs which executed them, his proposal would excite astonishment. Were any one, for example, to prescribe for *difficult breathing*, without an attempt to discover the organic or pulmonary affection whence it originated ; or for impaired vision, without examining what was the particular disease of the eye that gave rise to it, he would be regarded as disgracefully ignorant of the first principles of his profession ; and yet this is precisely what has been done and recommended by those who have studied the pathology of the mental functions apart from that of their material organs, and have regarded insanity as always the same disease, requiring the same medical treatment,—and who, when experience has presented it to their notice under widely different aspects, arising from obviously different causes, and demanding opposite modes of treatment, having no clew to lead them back to the real difference of disease or of organic affection, have contented themselves with expressing wonder and surprise at its Proteiform character, and at the mystery in which the operations of the mind are enveloped.

But had the fundamental principle, that the brain is the organ of mind, and consequently the fact that insanity always depends on a corporeal and cerebral cause, been recognized and kept in view, it would have been at once perceived, that

as every departure from health in an organ must necessarily disturb its function in a greater or less degree, and as the function of the brain is to manifest the mind, mental derangement could not be a specific disease, but must be one of the effects of whatever morbid causes disturb the action of that organ, and could therefore no more be considered as an individual disease than impeded respiration, or impaired vision, or vitiated secretion of bile. And had the attention of the observer been closely directed to the study of the relations subsisting between the mental faculties and their cerebral organs, so many centuries could not have elapsed, and so little been added to our knowledge of a subject in which mankind at large is so nearly concerned. Had insanity been recognized to be a symptom of a cerebral disease, the insane would never have been rejected and excluded from our sympathies as the detested of Heaven, nor would they ever have been tortured by the lash or chain, or exposed to public derision. Had a glimmering of its true nature reached the public mind, we would as soon have thought of loading the gouty or the paralytic with reproaches and obloquy, and of curing them by the application of the bastinado, as of treating the maniac with the neglect and often positive cruelty which he once met with. The moment we know that madness is an effect of disease in the material organs with which the Creator has connected the principle of mind, and that to this infliction alone are to be ascribed the waywardness, violence, and impetuosity, which often characterize that state, our feelings towards the unhappy patient, and our attempts at cure, will be very different indeed from what they would be, were we still ignorant of its true nature.

The affections of the brain which disturb the manifestations of the mind may be divided into two great classes; the *first* comprising those which are acute in their character, rapid in progress, and dangerous to life; and the *second* those which are chronic in their nature, slow in progress, and compatible with a prolonged existence. Of the first kind, fevers, phrenitis, hydrocephalus acutus, and apoplexy; and of the second,

the various affections which give rise to insanity, are familiar examples. In the former, which are attended by local symptoms of too great intensity to leave their seat for a moment in doubt, the derangement of the feelings and intellectual powers is universally and at once ascribed to morbid changes going on in the brain or organ of mind. But in the latter, where the local symptoms are not so severe, and where the disturbance of the mental operations is equally manifest, though sometimes differing in character, the same connexion of the phenomena with their cause in the brain is frequently not only unperceived, but resolutely denied. As, however, it is of the utmost importance in practice to be aware of the relation subsisting between the two classes of cerebral affections, that the obscurities of the one may be relieved by the lights afforded by the other, and that our attention may be directed in both to the local cause of the disturbance of function, we shall keep the connexion in view throughout, and thus seek to advance the pathology of insanity in the same way as that of other diseases, particularly as, in chronic affections of most other organs, we have greatly improved, if not altogether derived, our principles of treatment from observing the progress and means of cure of their acute diseases.

Having thus seen that mere disturbance of function is not a specific disease, but an effect of various and often opposite affections of the organ which performs it, and that mental derangement is not a specific disease, but a symptom of an existing cerebral affection, it follows that although the terms mania, melancholia, insanity, idiocy, &c. may be used to designate the particular mental forms assumed by the symptoms, they ought to be entirely discarded as *names of diseases*, since their use serves to perpetuate the error, which has long been the bane of medicine, of supposing them really to belong to and to designate specific states, requiring in all cases a specific treatment. And in their place, we ought to speak of the various diseases of the brain which disorder the mental functions or faculties; just as in the case of the lungs, instead of speak-

ing of dyspnœa as a specific disease, we constantly go back to the local or organic affection, and speak of pneumonia, of pleuritis, of phthisis, or as we speak of ophthalmia, cataract, &c. and not of simple blindness or obscurity of vision, which, as a disturbance of function, must necessarily be common in a greater or less degree to all diseases affecting the eye, whatever their nature and whatever their causes.

It is quite true, that, in attempting to apply this principle to those affections of the brain which give rise to mental derangement, we shall at first, from the excess of our ignorance, make a very poor appearance; but, even in the attempt, there will be the superlative advantages of keeping the very limited extent of our knowledge constantly before our eyes, and of stimulating us to unremitting exertion in the only path calculated to improve or increase it; whereas it is not less true than melancholy, that the only use of our present nomenclature is to make us deceive ourselves, and rest satisfied with a word in the absence of an idea; for, as already hinted, the method generally pursued, of naming the disease after the prominent symptom, without regard to the nature of the organic cause, lies at the root of all the confusion and contradiction that have encumbered the investigation of the cerebral affections productive of insanity; and we have, unhappily, only to look at the last systematic work published in this country to find the most ample proof of our position. I allude to Dr. Mason Good's 'Study of Medicine,'—a book which, with all its imperfections, has met with the most favorable reception from the profession and the public, and the authority of which it becomes on that account the more necessary to dispute where its doctrines, are as in this case, assuredly unsound.

Phrenology has proved, and indeed it is scarcely disputed, that the brain is an aggregate of many distinct organs, each manifesting a distinct mental power. It proves that one or more of these organs may be injured or diseased, and their functions impeded or altered, without necessarily affecting the remainder; and thus explains how a man may be insane on one

feeling or faculty, and sound on all the rest; and, consequently, how, when a different organ is diseased, the faculty or feeling that is deranged may be different, and yet the disease itself remain exactly of the same nature. Inflammation affecting the eye disturbs *vision*, and, affecting the ear, disturbs *hearing*, because vision is the *function* of the one, and hearing is the *function* of the other; but still it is *inflammation* in both, and requires in both the same kind of treatment. Phrenology shows that, in like manner, morbid excitement of the cerebral organs of Combativeness and Destructiveness may produce raving, violence, and fury; and a morbid excitement of the organ of Cautiousness produces fear, apprehension, despondency, and melancholy; not from any difference in the *kind* of excitement, but simply from the function of the one being to manifest the propensities first named, and from the function of the other being to manifest feeling of caution; and that hence both cases may require the same medical treatment for their removal, modified only by the difference of function; and, in so far, it affords a simple and consistent explanation of all the various forms which insanity assumes, and leaves us free to observe with care the nature of the organic derangement on which each depends.

Widely different from this is the mode of proceeding of those who ridicule the plurality of cerebral organs, and maintain the brain to be an unit, every part serving equally to manifest all the faculties. On this principle it is impossible to explain how it happens that, in a majority of instances, a few only of the mental powers are deranged, while the others remain sound and untouched. For if the whole brain were the single organ of mind, every part of it ought to concur in every mental operation, and all the faculties of mind, of which it is said to be the instrument, ought *in every case* to be equally deranged, and the patient ought to pass in one moment from an abyss of despondency to the abodes of bliss, or from a state of listless apathy to that of demoniacal furor. We may be told that this is sometimes found actually to be the case, and no doubt it is so; but it is far more rare than that in which the

mental affection is partial, and retains its characteristic features unchanged. The idiot, who to-day manifests the faculty of Tune, the feeling of Benevolence, of Veneration, or of Self-Esteem, will not to-morrow, nor in a year, change the nature of his predominant manifestations. In like manner, the monomaniac, the feature of whose insanity is to fancy himself a king, or possessed of boundless power and wealth, will not to-morrow believe himself a slave, or in wretchedness and want. Nor will the rich lunatic, whose fear is of dying from starvation, manifest the gaiety and lightness of one who fancies himself the favorite of some supernatural power, as might have been expected had the brain been as an unit the organ of all the faculties. Sometimes, indeed, heterogeneous manifestations and rapid changes from one class of ideas to another, take place; but then, the whole brain, including, of course, *all* the organs, is diseased. This state, therefore, affords a true picture of the nature of insanity, such as it would *necessarily* be in every instance, if the organ of mind were single.

To account for the variety of forms which derangement of so many mental faculties and organs may assume, the advocates of the unity of the organ of mind are constrained to create a new malady for every change in the appearance of the mental symptoms, and, following the wide variety thus presented, they conjure up a list of mental diseases numerous and complicated enough to damp the ardor of the most diligent and determined student, and at the same time running so much into each other as to defy all attempts at discriminating or describing them. Dr. Good's classification is an example of the utter inability of talent and industry to avoid falling into confusion and absurdity when not guided by sound principle, which in this instance could only have been supplied to him by that doctrine of the cerebral functions for which, in his ignorance of its nature, he has expressed so much contempt. The table, long as it is, is too instructive not to be given entire.

Dr. Good first establishes the order Phrenica, diseases affecting the intellect, and this he divides into six genera:—

The *first* Genus, is Ecphronia, or insanity, including two species, Melancholia and Mania.

2*d* Genus, Empathema, includes three species:—1. Entonicum, or impassioned excitement; 2. Atonicum, impassioned depression; 3. Inane, harebrained passion.

The *first* species (Entonicum) is subdivided into six varieties:—1. Lætitiæ, ungovernable joy; 2. Philautiæ, self-love, self-conceit; 3. Superbiæ, pride; 4. Gloriæ famis, ambition; 5. Iracundiæ, anger; 6. Zelotypiæ, jealousy.

The *second* species, Atonicum, includes five varieties: 1. Desiderii, ungovernable love; 2. Auri famis, avarice; 3. Anxietudinis, anxiety; 4. Mœroris, heartache; 5. Desperationis, despondency.

The *third* species, Inane, has only one variety.

3*d* Genus, Alusia, is divided into—1. Elatio, sentimentalism, mental extravagance; 3. Hypochondriasis, low spirits.

The *first* species, Elatio, is divided into four varieties:—1. Heroica, chivalry, romantic gallantry; 2. Facetosa, crack-brained wit; 3. Ecstatica, false inspiration; 4. Fanatica, fanaticism.

The *second* species, Hypochondriasis, into three varieties:—1. Antalgica, vapors; 2. Pertæsa, weariness of life; 3. Misanthropia, misanthropy, spleen.

4*th* Genus, Aphelxia, is divided into three species:—1. Socors, absence of mind; 2. Intenta, abstraction; 3. Otiosa, brown study.

The *second* species, or Aphelxia Intenta, is subdivided into two varieties; 1. A pathemate, from some ungovernable passion; 2. A studio, from intense study.

5*th* Genus, Paroniria, is divided into—1. Ambulans, sleep-walking; 2. Loquens, sleep-talking; 3. Salax, night-pollution.

6*th* Genus, Moira, into—1. Imbecillis, imbecility; 2. Demens, irrationality.

The *first* species, Imbecillis, is divided into four varieties: — 1. Stupiditas; 2. Amentia, forgetfulness; 3. Credulitas; 4. Inconstantia.

The *second* is divided into three varieties: — 1. Stultitia, folly, silliness; 2. Larema, dotage, superannuation; 3. Anœa, idiotism.

Here, then, we have the very formidable number of six genera, fifteen species, and twenty-seven varieties of mental diseases, each of course held to be different from the other, and to require some difference of treatment; and yet when, with the aid of Phrenology, we examine them a little more closely, we perceive that most of them are symptoms not peculiar to one form of disease, but common to many, and depending, not on different kinds of affections, but chiefly on the particular part of the brain which is in fault; and that, in short, they are symptoms which may change into others, or even disappear entirely, and yet the disease remain active and unchanged. On the phrenological doctrine of the plurality of the cerebral organs and mental faculties, however, the explanation of this is self-evident. Inflammatory excitement of the organ of Self-esteem, for instance, by exalting its natural function, will produce, according to its degree, Dr. Good's two diseases, called '*Self-love*' and '*Pride*.' The same inflammatory excitement, affecting and exalting the function of the organ of Love of Approbation, will give rise, according to its degree, to the two kinds called '*Gloriæ famis*,' or 'Ambition,' and the '*Heroica Elatio*,' or '*Chivalry*.' That of the organ of Acquisitiveness will give the '*Auri famis*;' that of the organ of Cautiousness, the "*Anxietudo*, *mœror* (*heartache*), *despondency*, *vapors*, *weariness of life*, *and low spirits*,' and so on: in all these the character of the disease would be the same, viz. that of inflammatory excitement; and in all, consequently, however different in appearance, would the same general treatment be required, modified only to suit the diversity of function in each particular case. But then a similar exaltation of function from

over-activity of the organ may arise from states which are not inflammatory, and which consequently would require treatment of a different and often of an opposite kind; and, therefore, if, as Dr. Good has done, we erect each such case into a distinct disease, and treat it accordingly, we shall inevitably run into a wild and inextricable confusion, from which nothing but a true knowledge of the cerebral functions can ever save us.

The natural method, then, to avoid falling into error, is to investigate the chronic affections of the brain in the same way as we study the more rapid and acute. Viewing the delirium or mental derangement attending the latter in the light of a symptom, and a most important one in its indications, we make use of it and all other means to detect the *nature* of the organic affection, and *by this last* are guided in the application of our remedies. Let us follow the same course with the mental aberration, which forms so striking a feature of the chronic affection, and ultimately our success will convince us that we have at last entered upon the right road to improvement. Instead, therefore, of erecting every form of insanity into a distinct disease, I shall examine the causes, symptoms, and mode of action of the remedies generally employed, in the cure of mental affections, and see whether they throw any light upon their nature. I shall begin with the *Causes*.

## CHAPTER IV.

### PREDISPOSING CAUSES OF MENTAL DERANGEMENT.

THERE are very few persons in whom all parts of the body are equally proportioned, and in whom all the functions go on with that complete harmony of relative force and activity which constitutes health. In almost every one some organs are either in excess or in deficiency, attended with an undue predominance of some functions over others, and giving rise in the former case to susceptibility of excitement, and in the latter to a corresponding depression of vital power, which places them almost on the brink of disease. The natural consequence of this state of the constitution is, that the same external causes do not always produce the same diseases, but, acting most powerfully on those organs which are the farthest removed, either in strength or in weakness, from the standard of healthy proportion, induce diseases, differing in their seat and in their nature according to the situation and condition of the disproportioned organs; and it is for this reason that we find the same physical cause, exposure to cold and wet, for example, give rise in one person to pneumonia, in another to consumption, in a third to diarrhœa, and in a fourth to ague or to croup. In investigating the causes of diseases, therefore, it is as necessary always to keep in view the peculiar qualities of the constitution to which the cause is applied, as the nature and mode of action of the cause itself.

When any organ, from predominance or weakness, or some

peculiarity of structure, is constitutionally prone to disease, it is, in medical language, correctly enough said to be *predisposed;* and the qualities which constitute the predisposition are called the *predisposing causes*, in opposition to the others, which are named the *exciting* or *occasional* causes. The predisposing causes, therefore, first demand our attention.

An examination of the predisposing causes of any disease is necessary to enable us to understand its origin, nature, and treatment, including in the latter the means of its prevention. When accurately known, they generally indicate the seat of the malady, as must at once be obvious on recollecting that a predisposition is a *local* condition or weakness of the part in which the morbid action is afterwards excited by the external or occasional cause; and unless the predisposing causes be found out, and removed, or modified, we can neither hope to prevent the accidental accession of the disease, nor expect to bring about a permanent cure.

That predisposition, consisting in the existence of some peculiarity, either natural or acquired, in the constitution of the brain, rendering it unusually susceptible of morbid action, is very influential in the production of mental derangement, is generally admitted, and is apparent from every circumstance ushering in and attending its occurrence. We are told by Esquirol, for example, that he is now 'more convinced than ever that the exciting causes, whether moral or physical, never act suddenly, except where a strong predisposition exists *;' and that, on account of the liability to disordered cerebral action, engendered by preceding attacks, there are many 'lunatics who can be cured only to a certain point. These individuals *retain so lively a susceptibility*, that the slightest causes provoke a relapse, and then their health can be preserved only by remaining in an asylum, where *no moral shock, no anxiety, and no event can occur* to throw them into their former state:' (Lib. cit.) And for the same reason, a very slight cause will suffice to produce derangement in a person whose brain has, from previous disease, accidental injuries, or strong and continued

* Dictionnaire des Sciences Medicales, Art. *Folie*, p. 195.

excitement of mind, either in passion or in study, become unnaturally irritable, and prone to irregular action.

In one sense the distinction between predisposing and exciting causes is not strictly philosophical; because most of the former, if sufficiently continued and intense, will give rise to the disease without the concurrence of the latter; and the latter, on the other hand, if not very violent, will produce only that inferior degree of disturbance which itself constitutes a predisposition. Practically, however, it is useful; because, *in general*, either class, taken singly, fails to produce the effect, the disease being in almost every instance the result of an accidental cause, co-operating with an existing predisposition. But, for all useful purposes, it is fortunately unimportant to which division any particular cause may be referred, provided its mode of operation be properly understood.

All causes of disease may be considered as infringements of one or other of the laws or conditions of health; and hence, in investigating the morbid history of the brain, and of every organ, it becomes essential to ascertain what these conditions are; or, inother words, to know the laws by which the healthy exercise of its functions is regulated. For if any of these be departed from, either on the side of deficiency or excess, the health of the part must suffer in proportion; and, accordingly, we find, in the case of the brain, that almost all the causes of its diseases derive their power from the relation in which they stand to its healthy action. It would therefore be a decided improvement in the practical value of our physiological works were this principle more attended to in the exposition of functions; for, were the chief circumstances which influence the due performance of each to be specifically stated, it would not only insure their more careful observance during health, but would lead to their more efficient adaptation to the removal of disease. But the present not being a physiological work, I cannot enter upon this subject here, in the way its importance deserves, and must content myself with making a few explanatory remarks, when treating of the class of causes to which each condition is related.

The *first* condition required for the healthy action of the brain is, I need hardly say, a *sound original constitution.* In this respect the brain is like every other part of the body. If it possess from birth a freedom from all hereditary taints and imperfections, and have acquired no unusual susceptibility from injudicious treatment in infancy, it will withstand a great deal in after life before its health will give way. But if, on the other hand, it either inherit deficiencies, or early mismanagement have subsequently entailed upon it an unusual proneness to morbid action, it will give way under circumstances which would otherwise have been perfectly innocuous; and, accordingly, in conformity with the physiological view given above, it may be truly said, that the most powerful of all the causes which *predispose* to cerebral disease and mental derangement, are the transmission of a *hereditary* tendency from parents to children, producing in the latter an unusual susceptibility of the same maladies under which the parents have labored; and the existence of great irritability of the nervous system, as a permanent quality acquired in early life, either from mismanagement or from the accidental occurrence of other diseases which leave behind them unusual susceptibility of external impressions. On both of these I shall offer a few observations.

1*st*, Authors who differ on every other point, agree in acknowledging that a condition of the brain, rendering it unusually susceptible of those diseases which are attended by mental derangement, is hereditary; and this truth is recognized by the vulgar (often the best judges in matters of observation), who speak of insanity being in the family, or in blood; and it is practically acted upon even by Life Assurance Societies, who hold the occurrence of derangement in a family as an obstacle to insuring the life of an individual who is himself perfectly sane. By the hereditary transmission of insanity it is not meant that the actual malady is conveyed from parent to child, and that, after lying latent for some years, it will inevitably appear in the child, in whatever circumstances he may be placed. The meaning is simply, that some quality of brain is

communicated to the offspring, rendering them more prone than other people to undergo cerebral disease, and thereby to become insane; and in consequence of which, causes will produce mental derangement in them, which, in any one not so predisposed, would have proved perfectly harmless.

The testimony of almost universal experience establishes the hereditary transmission of a predisposition to mania as one of the most fruitful sources of that terrible disease. PINEL justly observes, that, when we remark in all places, and in successive generations, several members of certain families lapsing into insanity at the same period of life, without any adequate exciting cause, it becomes exceedingly difficult to dispute the influence of hereditary qualities; and it becomes, he adds, altogether impossible, when we know that the fact is incontestably proved, not only by popular observation, but by notes regularly taken in numerous public and private establishments, and by collections of cases published in France, in England, and in Germany, from which, if required, numerous and conclusive examples might easily be quoted. But it may be sufficient to add, that the predisposition, like all other qualities of body and mind, becomes stronger in proportion to its previous duration and prevalence in the family, so that the disease attacks a greater number of the children where both parents are descended from tainted families, than where either parent is from a pure stock; and seemingly, for this reason, the hereditary predisposition is a more active cause of mental derangement in the higher classes, who intermarry more with each other than in the lower, who have a wider choice. The prevalence of insanity and of mental imbecility among the royal families of Europe, and of the former among the Quakers, who, from their habitual moderation of passion, and quiet domestic lives, ought otherwise to be unusually exempted from its attacks, is to be ascribed to the same cause of too frequent intermarriage occasioning the wide transmission of hereditary taint. The accuracy of this remark is indeed manifest on comparing the returns from the higher and lower classes of

society. In the Salpetiérre at Paris, for instance, which is an hospital for paupers, out of 321 female lunatics, only 105 were ascertained to belong to families in which madness already existed; while, out of 264 of the higher classes, 150, or *more than one-half*, were in this predicament. The experience of Dr. Burrows is still more decisive, as he assures us that he clearly ascertained the existence of a hereditary predisposition in six-sevenths of all his patients in private practice. These results deserve every attention on the part of the philanthropic and enlightened physician, through whom alone the public can be made acquainted with the magnitude of the evils resulting from acting in opposition to the principles on which they depend.

The operation of hereditary tendencies is well exhibited in the families of parents who have become insane from accidental causes without any previous predisposition. The children born *prior* to the existence of the disease in the parent remain as safe from its attack as those of parents who have never been affected; while those born *subsequent* to that time, and who may be thus supposed to have inherited the impaired constitution of their progenitor, are observed to be much more liable to its invasion than untainted children. And when madness does show itself in the offspring, it is generally at the same age and in the same form in which it appeared in the parent.

Nearly allied to the above in its mode of operation as a predisposing cause, is the condition of the mother during gestation, which has often a striking effect on the future mental health and constitution of the offspring. M. Esquirol has had many opportunities of noticing this in his practice; and he tells us, that, for this reason, it is often in the maternal womb that we are to look for the true cause, not only of imbecility, but also of the different kinds of mania. He observes, that, during the agitated periods of the French Revolution, many ladies then pregnant, and whose minds were kept constantly on the stretch by the anxiety and alarm inseparable

from the epoch in which they lived, and whose nervous systems were thereby rendered irritable in the highest degree compatible with sanity, were afterwards delivered of children whose brains and nervous systems had been similarly affected to such a degree by the state of the parents, that, in future life, as children, they were subject to spasms, convulsions, and other nervous affections, and in youth to madness, imbecility, or dementia, almost without any exciting cause. The extent to which the temporary state of the mother during gestation may influence the whole future life of the child may be conceived from a single fact recorded by the same author. A pregnant woman, otherwise healthy, was greatly alarmed and terrified by the threats of her husband, when in a state of intoxication. She was afterwards delivered, at the usual time, of a very delicate child. The child had, however, been so much affected by its mother's agitation, that up to the age of eighteen it continued subject to panic terrors, and then became completely maniacal.

I have had occasion to observe the same results in more than one instance. In one, a young lady, whose nervous system has, from infancy, been in a highly irritable condition, and who has suffered much from many forms of nervous disease, this constitutional susceptibility has been either produced or greatly increased by the intense excitement to which her mother, while yet pregnant, was exposed in circumstances of great danger, anxiety, and alarm in a storm at sea, during which she spent several days half immersed in water, and in hourly expectation of shipwreck and death.

When we see the offspring of consumptive parents afterwards displaying the same defective formation of thorax, the same susceptibility of cold, and the same difficulty of sustained vigorous respiration that distinguished their parents, we say at once that their lungs are constitutionally weak, and that they will require every care to preserve them from becoming consumptive; and, in every instance of hereditary transmission of disease, we say that the children are born with a

peculiar weakness in that part in which the affection has its seat. In like manner, we ought never to forget that, when insanity runs in a family, the primary cause is a *peculiar constitution of the brain;* that it is not a defect in the immaterial principle of mind, but a defect in the brain through which the mind operates, that is thus inherited from the parent. From losing sight of this relation of the mind to the condition of its material organ, the most lamentable consequences have resulted, and will continue to follow, so long as the true cause of insanity is overlooked.

The second form in which departure from the first condition of cerebral health produces liability to cerebral disease and insanity, is that in which, from an unusual severity of some of the diseases incidental to infancy, injudicious training, confinement to warm and ill-ventilated apartments, over-feeding, too early and too great straining of the mental powers, too ready gratification of all the passions, inclinations and caprices of youth, and a variety of other similar causes, an unusual susceptibility has been impressed upon the nervous system, laying the foundation for the subsequent occurrence of cerebral and mental affections often from very trifling causes. The predisposition thus produced is by no means unfrequent; but as, when once existing, its mode of action is the same as that of the hereditary tendency, it is unnecessary to discuss it at any length. In youth it is often a chief cause of the appearance of hysteria, epilepsy, or some other form of common nervous disease. But in mature age, particularly in persons of a peculiar temperament, with proneness to excessive and involuntary excitement of the nervous system, it more frequently leads to mental derangement. It is well known among medical men, that fevers, for example, in which the head has been much affected, wounds of the brain, indulgence in the abuse of wine or spirits, apoplexy, palsy, and a variety of other morbid states, occurring at that period of life, often leave the brain in a condition not of absolute disease, but of extreme susceptibility. Sometimes even a single fit of drunkenness will so far overstimulate

cerebral action, as to throw the individual into violent madness of short duration; and it can easily be conceived, that a frequent repetition of the same stimulus, to a smaller extent, may at last produce a permanent state of irritation, which it may require only a slight cause to convert into disease. For the same reason, blows and injuries frequently leave behind them unusual susceptibility of impressions. Spiculæ of bone in the interior of the skull, keeping up a slight but constant irritation, operate in the same way, increase natural action, and are therefore not unfrequent predisposing causes of some form or other of cerebral and mental disesae, and particularly of epilepsy and monomania. Certain temperaments also, as already said, predispose more than others to those forms of cerebral disease which are attended by insanity. The purely lymphatic are not often the victims of mental derangement. The sanguine and the nervous, both [illegible] endowed with great acuteness and vivacity of feeling, or irritability of nervous fibre, are perhaps the least capable of withstanding the action of any continued exciting cause. But the subject of temperament is so closely connected with that of hereditary descent, that it is unnecessary to add any thing to what has been already said on the latter in the preceding pages.

The *next* condition of health is a well balanced proportion of all the parts of the brain, so that none shall possess an undue ascendency over the rest. We have seen to what extent organic size influences energy of function; and when it is recollected that, as a general rule, the largest organs are also relatively the most prone to activity — that, when once excited, they are the most imperious in their demands for gratification — and that habitual over-activity of function is attended with habitual excess of action, closely bordering on disease in the vessels and structure of the part itself, — we cannot fail to attach much importance to a just proportion in the development of the different parts of the brain, and can have no difficulty in believing that *excess of endowment* in some organs, with corresponding excess of functional activity, is a very common predisposing cause of mental derangement.

However much the reader may demur to this proposition, as applied to the brain, its importance as regards other parts of the body is too well known to admit of being successfully disputed. Health and good constitution arise from an equal balance between all the parts and functions of the body; because, whenever any part predominates too much, it is accompanied by a corresponding excess of energy and activity of function; and when, on the other hand, any part is too little developed, it is attended with a weakness and inactivity of function which, as well as the former, place it on the very verge of disease; and the principle on which this happens is apparent enough. The effect of exercise is to increase the action of the blood-vessels and nerves of the part, and to augment its power of function. A larger supply of blood, and a greater flow of nervous influence, take place towards it, and its whole condition is that of excitement. If the stimulus be withdrawn in time, and an interval of repose be allowed, strength and nutrition are improved, and the superfluous excitement gradually subsides. But if the intervals of action be either too short to admit of this subsidence, or the activity and excitement be too long kept up, or too frequently repeated, the vascular and nervous excitement go beyond the limits of health and the control of the will, and the part continues to act with disproportionate violence, till either by proper medical treatment the excitement is subdued, or by its very continuance it brings on morbid changes of structure, which nothing can remedy. Now it seems to be almost a law of nature, that the larger an organ is, the greater will be its energy, and the more irresistible its tendency to action. On this principle, we find the individual, such as the gladiator, the boxer, or the sportsman, whose muscularly robust frame contrasts with the smallness of the intellectual organization, *delighting* in active *muscular* exercises, and recurring to them with increasing pleasure, but showing no tendency to seek gratification in any intellectual pursuit, for which his organization is less adapted; and, for the same reason, we find the man of powerful brain, and weak muscles,

delighting in the sedentary exercise of the former in mental employments, and *averse* to muscular action. The same rule holds in comparing strong with weak mental functions. Wherever an individual possesses a set of faculties in much higher endowment than the rest, those will assume the predominance in activity as well as energy. If they belong to the department of intellect, there will be intellectual activity and a delight in their exercise ; if they belong to the moral sentiments, there will be a tendency to, and a delight in, moral pursuits ; and if they belong to the propensities, there will be a constant recurrence of, and delight in, selfish and debasing gratifications of passion and sensual appetite ; accordingly, in society, we find the artist whose pictorial talents are naturally the strongest, seeking his chief delight in their constant exercise, however adverse the circumstances in which he may be placed. If he is poor, and cannot command materials and instruction, he will, if the talent be strong, employ it in drawing with a burnt stick on a garret wall, rather than forego the enjoyment arising from its activity ; while, if the organs on which the manifestation of mathematical genius depends be weak, he may have every external advantage and incitement to application to that branch of science, and yet no internal activity sufficient to render their exercise pleasurable be produced. In like manner, the man who, like WATT, SMELLIE, or RENNIE, is naturally endowed with high mechanical talent, finds it taking the lead, and craving for exercise, with a force proportioned to its natural strength ; while, if deficient in the corresponding faculties, he may find no pleasure in the speculations of the metaphysician, the compositions of the musician, or in the effusions of the poet, each of whom will, on the same rule, seek his delight in satisfying the constant cravings of *his* predominating faculties, and feel no interest either in the inventions of the mechanician, or in the speculations of the mathematician, which address themselves to faculties of which he happens to possess a weak endowment. And as the strength of every mental power bears a proportion to the size of its cerebral organ, it follows natural-

ly that the disproportionate development of these organs to each other must be a strong predisposing cause of insanity ; and we proceed to show accordingly that it has been substantially acknowledged as such by authors in almost every age.

It is true that it is only among later writers that we find the proposition expressed in these words, but the oldest authors state what is exactly equivalent to it. I have already shown, that the various fundamental faculties of the mind operate through the medium of distinct cerebral organs, and that the power of manifesting each bears an exact proportion, *cæteris paribus*, to the size of its own organ or part of the brain ; and consequently, if this relation be considered as established, intensity of function becomes a measure or index of size of organ exactly as the latter is of the former, and the expression of the one quantity becomes exactly equivalent to that of the other. So that, supposing the laws of nature to be the same now that they have been in times past, whenever we find it remarked by any one unacquainted with Phrenology, that any mental power or feeling existed in great energy, and formed a principal feature in the character, we are quite entitled to hold, that the corresponding cerebral organ through which it manifested itself was in equal excess, and therefore disproportioned in size to the rest. Here, be it observed, I am not *proving* the truth of Phrenology. I hold it to be true from satisfactory evidence, the statement of which would be foreign to these pages ; and it is only on this assumption that the argument becomes logical.

Viewing, accordingly, as every observant phrenologist must necessarily do, the mention of the preponderance of function as equivalent to that of the preponderance of organic development, I regard the following passages from M. Esquirol's excellent work '*On the Passions, considered as Causes, &c. of Mental Alienation*,' as evidence of irregular or disproportioned development of the different organs of the brain being a powerful predisposing cause of cerebral disease, and consequently of insanity. 'Almost all the insane committed to my

care,' says that author, 'had offered some irregularities in their functions, in their *intellectual faculties, in their affections or feelings*, BEFORE becoming insane, and *that often from their earliest infancy.* Some had been distinguished for '*excessive pride*,' (excessive predominance of the organ of Self-esteem); 'others for *great irascibility*,' (predominance of Combativeness and Destructiveness; 'some for frequent *melancholy*,' (predominance of Cautiousness); 'others for a *ridiculous levity*,' (defective Cautiousness, predominant Hope, and Love of Approbation); 'some for a *desolating instability* for receiving instruction,' (defective Firmness and Intellect); 'others for an *obstinate application* to whatever they undertook,' (predominant Firmness); 'others again were *peevish, discontented, fearful, timid* and *irresolute*,' (excessive predominance of Cautiousness, and defective Combativeness and Firmness). And, as if still more clearly to fix the cerebral seat of insanity, he goes on to say, that 'most of them had suffered from nervous diseases — the women from convulsions or hysterical spasms, and the men from cramps, palpitations, or palsy; *with these primitive or acquired dispositions, nothing more was wanting, except some moral affection, to determine the explosion of furious mania, or the deepest melancholy.*' To the phrenologist nothing can be more striking and instructive than the above exposition; not only does it indicate the cerebral seat of insanity, but every line of it points to the disproportion of the different parts of the brain to each other as the most remarkable feature in the constitution of those thus declared to be predisposed to the invasion of cerebral disease. To the phrenologist, the excessive pride, the great irascibility, the frequent melancholy, the ridiculous levity, the desolating instability, the obstinate application, and the timid and discontented peevishness, speak of excessive preponderance of some cerebral parts, and defective size of others, as plainly as if he saw them with his eyes. In the constitutional proneness to incessant and energetic action, which predominance of any organ naturally gives, and in '*the primitive and acquired disposition*' thence re-

sulting, the phrenologist sees a very abundant explanation why 'nothing is then wanting, except some moral affection, to determine the explosion' of mania, by exalting the already inordinate action beyond the limits of health. In the same constitutional excess of one organ over the rest, he sees also the reason why poets and men of great but partial genius are proverbially subject to mental derangement. In them, the organs of the few faculties which constitute their genius are in excess; while too often those of the sentiments and intellectual powers, which ought to regulate the activity of the former, are, at the same time, deficient; and this discordant combination being quickened in its movements and in its excitability by that constitutional activity, which is itself an element of genius, it is no wonder that trivial disappointments and vexations of mind so frequently end in the production of cerebral disorder and mental alienation.

In thus affirming that the disproportinate development of one or more of the cerebral organs, and consequently peculiarities of mental character, predispose to cerebral disease, on account of the facility with which the peculiar over-activity of the brain may be carried the length of morbid action, I must not be understood as affirming that, in every lunatic, the brain will be found irregularly developed, for the reverse is often the fact. Every part of the body, and every part of the brain, may become diseased, whatever be its form, size, or proportion to the rest; and, in hereditary insanity especially, this is very often observed; but, in the same way as a narrow chest indicates *susceptibility* of pulmonary complaints, do one form and one size of head indicate, *cæteris paribus*, a *greater susceptibility* of insanity than others. This, however, is very far from asserting that a *particular* form of head *always* accompanies insanity, — an assertion erroneously attributed by Pinel to Gall and Spurzheim, and which that author takes much needless trouble to refute. As a general rule, the most active and predominant organ will be the most prone to morbid excitement; but this does not always hold; and nobody is better aware of this than

Dr. Spurzheim himself. In his work on insanity, Dr. Spurzheim states distinctly, that although the greater number of lunatics from pride have the organ of Self-esteem very large in proportion to the others, yet it does not by any means follow that all those who have the same organ largely developed are to become insane through pride, or that all those who have it small are secure from its derangement; for every organ, he repeats, whatever its size, may become diseased.

The influeuce of predominant development in giving a predisposition to disease in the organ, is very manifest on comparing a number of monomaniacs, or patients deranged on one point, with each other; for, as a general rule, the deranged faculty, or feeling will be found to correspond with the most highly developed organ; and no one who has made an accurate observation can have failed to notice the coincidence. Even in general mania, I have almost invariably found the mental disorder taking its character from the functions of the predominant organs. As illustrations of this principle, Dr. Gall was in the habit of showing the skull of a man in whom the cerebellum was enormously large, and the chief feature of whose alienation was to believe himself to be the husband of six wives; and he also possessed the skull of a woman in whom the organ of Philoprogenitiveness was extremely large, and who, in her ravings, fancied herself pregnant with five children. Dr. Spurzheim mentions having seen many similar cases; and I have myself observed several, both in the Salpétrière of Paris, and in the hospitals of this country; and, even in acute cerebral disease, I have, in several instances, seen the consequent mental affection consist in an exaggeration of the character indicated by the predominant organs. But although this is the general rule, it must never be forgotten that a small organ *may be* in a state of morbid activity when a larger one is sound; and that a large organ may be in a state of atony, and its function be altogether in abeyance; as happens daily with the brain, considered as a whole, in the opposite states of delirium and dementia.

After the preceding observations were written, an interesting confirmation of their accuracy occurred in the course of a visit to the Richmond Lunatic Asylum in Dublin, by Mr. G. Combe, in April, 1829, when, in the presence of Dr. Crawford, Assistant Physician, Mr. Grace, the Moral Governor, Major Edgeworth, Governor of the House of Industry, Dr. Cumming, Assistant Physician to ditto, and Dr. Mollan, Mr. Combe examined a number of the patients, and pointed out to these gentlemen the peculiarities of cerebral organization which each presented, and with which he expected the features of the lunacy would, as a general rule, be found to correspond. It was impossible to imagine a more conclusive experiment; for Dr. Crawford had previously written down the characteristic symptoms, and Mr. Combe had never seen or heard of any of the patients before they were ushered into the room, and, therefore, as he wrote down his remarks in the presence of the above-named gentlemen *before* Dr. Crawford's notes were consulted, he of necessity drew his inferences entirely from their cerebral configuration; and yet, although it was the first time Mr. Combe had made the attempt, the results, as will presently be seen, harmonized completely with the principle I have been explaining.

In the great majority of instances, the mental faculties, the organs of which were in most ample endowment, were those chiefly deranged; while, in a few cases, the development of the whole brain was so equable, that it afforded little or no clew to the character of the insanity. In the following extract from the original communication (which I recommend to the notice of the reader *), the words printed in italics are those which Mr. Combe underlined at the time, as representing the features which he considered as most likely to characterize the mental affection; and the accuracy with which they correspond to Dr. Crawford's statements, *previously* written down, and therefore also beyond suspicion, is very remarkable, and worthy of attention.

* Phrenological Journal, xxi. p. No. 81.

The first patient was PATRICK LYNCH.

MR. COMBE'S REMARKS.

Patient's name LYNCH.

| | |
|---|---|
| Largest organs | *Self-esteem* |
| | *Wonder* |
| | *Causality* |
| | *Language* |
| | *Combativeness* |
| Also large | Amativeness |
| | Philoprogenitiveness |
| | Concentrativeness |
| | Acquisitiveness |
| | Love of Approbation |
| | Firmness |
| Full | Veneration |
| Deficient | Conscientiousness |

Mr. COMBE said, that he considered *Wonder*, which, when diseased, gives notions of supernatural agency and inspiration, and *Self-esteem*, as probably the leading sources of alienation in this case; that Causality and Language should also be conspicuously manifested.

DR. CRAWFORD'S REMARKS.

PATRICK LYNCH, aged 42, a cooper. Two and a half years ill. Married, and has children.

Monomania. *Religious pride*, with vivid imagination and the highest degree of excitement, requiring restraint; *fancies himself inspired, and endowed with omnipotence;* frequent hallucinations; *visits from heaven*, &c.; *great flow of language in a style quite superior to his rank in life;* drinking the cause of his illness; second attack.

NOTE. — 'Dr. Gall remarked in the first fanatic who fell under his observation, a large development of the part of the brain now marked 'Wonder,' and subsequently met with many similar instances.' — *See Combe's System*, p. 226.

The exactness of the coincidence between the faculties marked as predominant in the above patient, and in the features of the insanity, must strike every reader. The next case was E. S.

MR. COMBE'S REMARKS.

E. S.

| | |
|---|---|
| Large | Amativeness |
| | Philoprogenitiveness |
| Very large | *Destructiveness* |
| | *Combativeness* |
| Large | Self-esteem |
| | Cautiousness |
| Moral organs deficient, particularly | Veneration and Hope |
| Moderate | Conscientiousness |
| Of the moral organs | Benevolence is rather well developed |

DR. CRAWFORD'S REMARKS.

Patient, E. S. aged 34. Ten years since first admission.

Total want of moral feeling and principle, great depravity of character, leading to the indulgence of every vice, and to the commission even of *crime*. Considerable intelligence, ingenuity, and plausibility; a scourge to his family from childhood; turned out of the army as an incorrigible villain; attempted the life of a soldier; repeatedly flogged; has since attempted to poison his father.

MR. COMBE'S REMARKS.

| | |
|---|---|
| Intellectual organs | Rather well developed. |

The patient was withdrawn, and Mr. Combe added: This is the worst head I ever saw. The combination is worse than Hare's, — Combativeness and Destructiveness are fearfully large, and the moral organs altogether very deficient: Benevolence is the best developed of them, but it is miserably small compared with the organs of Combativeness and Destructiveness. I am surprised that that man was not executed before he became insane.

A singular confirmation of the truth of Mr. Combe's inferences occurred in this instance. Mr. Combe, to insure perfect accuracy, sent the proof-sheets of his article to Dr. Crawford for revision. He received along with them a letter from that gentleman, alluding, among other things, to Mr. Combe's 'surprise that E. S. had not been executed before becoming insane,' and adding, that, in truth, *E. S. had never been insane*, but was detained as a being so utterly void of all moral sense as to be dangerous to society; thus proving how correctly his dispositions had been described by Mr. Combe, when he stated the head to be the worst he had ever seen, that of Hare not excepted.

The third patient submitted to examination was Dowling.

| Mr. COMBE'S REMARKS, | | DR. CRAWFORD'S REMARKS. |
|---|---|---|
| Patient's name Dowling. | | Joseph Dowling, silk-weaver, aged 29. Two years ill. Unmarried. Monomania. *High pride. An emperor.* Very overbearing, quarrelsome, and dangerous, but is easily tamed. |
| Enormously large | *Self-esteem* | |
| | *Firmness* | |
| Large | Amativeness | |
| | Combativeness | |
| Rather large | Destructiveness | |
| | Adhesiveness | |
| | Benevolence | Note. — 'When the organ of Self-esteem becomes excited by disease, the individual imagines himself to be |
| Full | Acquisitiveness | |
| Pretty good | Intellect | |

| DR. COMBE'S REMARKS. | | DR. CRAWFORD'S REMARKS. |
|---|---|---|
| Deficient | Cautiousness | a king, and emperor, a transcendent genius, or even the Supreme Being.' — COMBE's System, p. 164. |
| The organs in great excess are Self-esteem and Firmness. | | |

The coincidences between the great Self-esteem and the high pride and belief of being and emperor are too palpable to require comment. The next case I shall quote is that of BRADY.

| MR. COMBE'S REMARKS. | | DR. CRAWFORD'S REMARKS. |
|---|---|---|
| Patient's name, BRADY. | | GEORGE BRADY, servant, aged 37. Twelve years since first attack. Has relapsed. Unmarried. *Melancholy. Great timidity* of disposition. Fancies he was accused of theft, and has constant apprehension of punishment, either human or divine. A variety of hallucinations on this subject. *Gentle* and kind. His master, to whom he was butler, was robbed, and although the thief was discovered, this occasioned his mental derangement. |
| Deficient | Combativeness | |
| | Hope | |
| | Veneration | |
| Very deficient | Ideality | |
| | Tune | |
| | Wit | |
| Large | Self-esteem | |
| | Firmness | |
| Rather large | Benevolence | |
| | Conscientiousness | |
| Considerable | Cautiousness | |
| Large | Individuality | |
| | Eventuality | |
| The deficient Combativeness, Hope, Veneration, and Ideality, and Wit, large Cautiousness and Conscientiousness, will predispose to melancholy. | | |

The above presents another form of derangement equally accordant with the predominant development; and the following is also remarkable. It is the case of DUFF.

| MR. COMBE'S REMARKS. | | DR. CRAWFORD'S REMARKS. |
|---|---|---|
| Patient's name, DUFF. | | BRYAN DUFF, collector of minerals, aged 31. Three years ill. *Melancholy. Deepest dejection.* Silent, morose, inactive. *Attempted suicide*, and to destroy his own child. After disappointment in his business took to drinking; was seized with |
| Very large | Self-esteem | |
| | Firmness | |
| | Secretiveness | |
| Large | Destructiveness | |
| | Cautiousness | |
| Deficient | Hope | |

| Dr. COMBE'S REMARKS. | | Dr. CRAWFORD'S REMARKS. |
|---|---|---|
| Small | Ideality | maniacal delirium, which has sunk into permanent melancholy. |
| | Wit | |
| | Philoprogenitiveness | |
| Moderate | Veneration | |

The combination here is that which is described in the works on Phrenology as leading to melancholy and suicide.

From among the females I may select one example, showing predominance of still other organs and faculties in close coincidence with the mental features of the insanity. It is that of Hall.

| Mr. COMBE'S REMARKS. | | Dr. CRAWFORD'S REMARKS. |
|---|---|---|
| Patient's name Hall. | | Jane Hall, aged 48. Ill 8 years. Monomania. *Pride.* Queen of France. Hallucinations about rebels surrounding the house. Fancies she has rats inside her forehead. Generally cheerful and quiet. Illness occasioned by fright during disturbances in her country. |
| Very large | *Self-esteem* | |
| Large | Concentrativeness | |
| | Destructiveness | |
| | Hope | |
| | Veneration | |
| Full | Wonder | |
| Fairly-developed | Intellect | |

The organ of Self-esteem is here by far the most predominant.

The total number of patients submitted to examination was twenty-three. In fifteen or sixteen the coincidence between the development of the brain and the nature of the lunacy was as great as in the cases quoted. In four the organs were so developed as to afford no grounds of inference, and in one the features of the hallucination and the predominant organization did not correspond; thus presenting results so completely in harmony with what was anticipated, as to render it difficult to deny the influence of a disproportionate development of the different parts of the brain as a predisposing cause of cerebral and nervous disease.

But before leaving this branch of the subject, I may shortly advert to another predisposing condition, with which that just treated of is closely connected. I allude to *deficient* organic

endowment, in consequence of which the mental powers are unable to withstand any casual excitement or forced exertion into which they may be thrown. This, as might be expected, is to be met with most frequently in persons whose deficiencies render them unfit for the stations which they occupy in society and incapable of the duties committed to their charge. Conscious of incapacity, and yet unwilling to be borne down without an effort, they live in a continued turmoil and struggle, worried and oppressed by calls which they cannot answer, and cannot escape from, till at last some accident occurs to turn the balance and deprive them of reason. Men of strong ambition, but little talent, who labor and strive incessantly to make some improvement, or effect some discovery, or do something which shall bring them to distinction, and, under this impulse, goad on and tax their limited powers to the uttermost, place their cerebral organization on the brink of disease, and require only a trifling cause to induce mental alienation. So efficient, indeed is defective development as a predisposing condition, that, in many cases, idiocy arises from it alone, independent of any actual disease. Numerous examples are given by authors of full grown idiots, with brains not larger than those of infants, and in whom there was no other mark of disease to account for the imbecility. It even happens, that where the anterior lobe of the brain is merely sufficiently developed to raise the individual a little above palpable imbecility, he may pass through boyhood without remark or suspicion of his true state; and yet, on arriving at maturity, when all the faculties ought to be in their vigor, his friends will be surprised to find that the mind is in reality so limited as to be quite oppressed by the ordinary details of business, which, if persevered in, soon upset the little reason originally possessed. This kind of predisposition, however, as will be apparent from its nature, leads more frequently to idiocy, and imbecility than to any of the forms of proper mania.

The THIRD condition of health, infringement or neglect of which gives birth to a distinct class of predisposing causes, is

the regular active employment of all the organs of the brain, and all the faculties of the mind, each on its own object; for, like every other part of the animal economy, the brain is greatly dependent for its health on regular exercise. The well-being and happiness of man, both as an animal and as a moral being, lie in activity; and the brain is formed in strict relation to this general law. If it be too little exercised, its organization becomes enfeebled, its functions impaired, and its structure prone to diseased action; but, as the agency of the causes referrible to this condition cannot be rightly understood without direct reference to what may be called the General Laws of Exercise, I must shortly refer to these.

Every part of the animal frame being constituted by the Creator with a view to being actively employed, enjoys the best health, and performs its functions in the most perfect manner, when it is duly and regularly exercised. The physiological explanation of this fact is at once simple and interesting. Arterial or oxygenated blood is the essential element, whence every organ derives the nutriment by which its substance is repaired, and the stimulus by which its vitality is preserved. If imperfectly supplied with this fluid, or if the latter, although abundant in quantity, be deficient in quality, imperfectly oxygenated, for instance, all the organs to which it is distributed are feebly stimulated by its presence; and, as a necessary consequence, the functions which they execute become, to a corresponding degree, enfeebled and languid. Now, the chief local effect of exercise, is to increase the action of the blood-vessels and nerves, to cause a more rapid and plentiful supply of blood, and of nervous energy (or a higher degree of *innervation*, as it has lately been termed,) and thereby to add so much to the vigor of nutrition, as not only to supply the waste occasioned by the exercise, but also, in certain circumstances, to add to the development of the organ, and to increase its power, as well as its facility of function. If we use the arms, for example, in any given way, for a length of time, we soon observe an afflux of fluids, indicated by a per-

ceptible fulness and distention of the vessels, accompanied by a local elevation of temperature, and a sense of augmented vitality and power, and greater readiness of action. This is the most beneficial degree of exercise; and in youth, its influence in promoting the regular and healthy development of all the parts of the body, before they have acquired their full growth, is very conspicuous. In mature age, its effects are not less salutary; for, although it does not at that period of life so frequently increase the size of the corporeal organs, it gives to them a life, vigor, facility, and unity of action, which, both in mind and body, every one recognizes as contrasting with the dull and slothful movements entailed upon us by indolence and idleness; and it keeps up that activity of circulation, and that free supply of nervous energy, which are the best preservatives of health. In old age its operation is also manifest in the degree of strength and hilarity which it inspires, as opposed to the feeble decrepitude, and pining captiousness, which its neglect is sure to bring along with it.

If, however, the amount of exercise imposed be carried beyond this point, different results follow. The increased action, occasioned at first by the stimulus of excitement, cannot be kept up beyond certain limits, without, in its turn, exhausting the vital powers of the blood-vessels and nerves; and, therefore, if still persevered in, the waste of power and of material goes on increasing in a rapid ratio, while the vigor of the nutritive and restorative vessels becomes every moment less, and positive debility and loss of substance ensue. In youth, when the processes of waste and nutrition are in the highest energy, it is notorious how fast the system will rise or fall, in proportion as the balance is turned the one way or the other. Even a few days of severe muscular fatigue in early life, will often be sufficient to stunt the growth, and lay the germ of permanent debility.

But if, on the other hand, the amount of exercise be trifling, another evil, deserving of much consideration, presents itself. Every part being constituted by the Creator, with a view to

being used, or in relation to the laws of exercise, it necessarily happens that, when deprived of the stimulus, which its activity communicates to its vessels and nerves, the latter act with diminished energy, the circulation becomes languid, vitality low, imperfect nutrition and want of vigor follow, inducing weakness and slowness of function, from an opposite cause to the last. In this clogged state of the vessels, imperative exercise is at first felt as an overwhelming burden; but if it is entered upon with moderation, and extended regularly and gradually, as the vital powers become excited, an astonishing increase of activity and vigor ensue. In the bodily system this effect is often seen to follow imperative muscular exercise, which, in a short time, will greatly reduce the bulk of a fat and indolent man, and add, in the same proportion, to his real strength. In fact, so little can this principle be doubted, and so marked are the changes which it effects, that, by long disuse, even the bones become soft, and the muscles shrink in size, and become relaxed in texture, so as to be scarcely cognizable. By disuse, also, the eye loses its distinctive structure. Its nerves shrink, its coats become opaque, and disorganization proceeds so far as to blend all its parts in one undistinguishable mass. Such results, it may be said, follow only in extreme cases, which is quite true. But the nature of the process remains the same at every period of its progress, and the part which becomes disorganized by total disuse, becomes imperfect in tone, in structure, and in function, by partial disuse, or, in other words, by insufficient exercise.

The same laws of exercise regulate the health of the brain, and the performance of its functions. If the different cerebral organs be called into daily activity and duly stimulated, by being employed on their own objects for a length of time, proportioned to their constitutional vigor, and sufficient intervals of repose be allowed, their vital action becomes animated and enduring, and the corresponding mental powers act with a readiness, vivacity, and force characteristic of health. But to attain this most desirable end, the feelings and moral senti-

ments must be daily in exercise, as well as the intellectual faculties, for they also go to constitute the mind, and their organs being parts of the same brain as those which manifest the intellect, and composed of the same kind of nervous matter, and nourished by branches from the same blood-vessels, are subject to the same laws, and consequently require the same diligent training, and the same treatment, as to action and repose, to keep them in health, and bring them to perfection. If, on the other hand, they be too strongly or too permanently excited, their vital energies are exhausted, nutrition is deteriorated, and the functions are executed with feebleness and irritation; and, lastly, if their exercise be neglected, they become feeble and indolent in their operations, and prone to morbid action from inherent debility.

Keeping these principles in view, it will excite no surprise to find, than *non-exercise* of the brain and nervous system, or, in other words, inactivity of intellect and of feeling, is a very frequent predisposing cause of insanity, and of every form of nervous disease. For demonstrative evidence of this position, we have only to look at the numerous victims to be found among females of the middle and higher ranks, who have no call to exertion to gain the means of subsistence, and no objects of interest on which to expend and exercise their mental faculties, and who consequently sink into a state of mental sloth and nervous weakness, which not only deprives them of every enjoyment, but lays them open to suffering, both of mind and body, from the slightest causes.

If we look abroad upon society, we shall find innumerable examples of mental and nervous debility from this cause. When a person of some mental capacity is confined for a length of time to an unvarying round of employment, which affords neither scope nor stimulus for one half of his faculties, and from want of education or society, has no external resources; his mental powers, for want of exercise to keep up due vitality in their cerebral organs, become blunted; his perceptions slow and dull, and he feels any unusual subjects of thought as dis-

agreeable and painful intrusions. The intellect and feelings not being provided with interests external to themselves, must either become inactive and weak, or work upon themselves and become diseased. In the former case the mind becomes apathetic, and possesses no ground of sympathy with its fellow-creatures; in the latter, it becomes unduly sensitive, and shrinks within itself and its own limited circle, as its only protection against every trifling occurrence or mode of action which has not relation to itself. A desire to continue an unvaried round of life takes strong possession of the mind, because, to come forth into society requires an exertion of faculties which have been long dormant, which cannot awaken without pain, and which are felt to be feeble when called into action. In such a state, home and its immediate intererests become not only the centre which they ought to be, but also the boundary of life; and the mind being originally constituted to embrace a much wider sphere, is thus shorn of its powers, deprived of numerous pleasures attending their exercise, the whole tone of mental and bodily health is lowered, and a total inaptitude for the business of life and the ordinary intercourse of society comes on, and often increases till it becomes a positive malady.

But let the situation of such a person be changed; bring him, for instance, from the listlessness of retirement to the business and bustle of a town,—give him a variety of imperative employments,—and place him in society, so as to supply to his cerebral organs that extent of exercise which gives them health and vivacity of action,—and, in a few months the change produced will be surprising. Health, animation, and acuteness, will take the place of former insipidity and dulness. In such an instance it would be absurd to suppose that it is the mind itself which becomes heavy and feeble, and again revives into energy by these changes in external circumstances; the effects arise entirely from changes in the state of the brain; for regular exercise conduces to its greater health and activity, and the mental manifestations and the bodily health have been improved solely by its improved condition.

Examples of this kind are not rare among retired officers, annuitants, merchants, and other persons living on certain incomes, without fixed occupations to interest them; and a curious enough instance occurred lately in a young military officer, who spent three years in Canada, in command of a small detatchment, in a remote station, where he was completely separated from all society of his own rank. During all that period he was obliged to pass his time in listless sauntering, shooting or fishing, without the excitement to his various faculties which is afforded by the society of equals. The consequence of this compulsory mental apathy, and the corresponding inactivity of brain, was, that, on being relieved at the end of that time, his nervous system had become so weak and irritable, that, although by nature fond of society, he feared to meet even with the members of his own family, and for months would never venture to walk out to take necessary exercise, except in the dark. And it was only at the end of several months that the renewed stimulus of society, and employment restored the tone of his nervous system, so far as to allow him to regain his natural character of mind, and to return to his usual habits of life. In this predisposed state of the system, a very slight cause would obviously have sufficed to convert the depression into absolute derangement.

But, as mentioned at first, the most frequent victims of this kind of predisposition are females of the middle and higher ranks, especially those of a nervous constitution, and good-natural abilities; but who, from ill-directed education, possess nothing more solid than mere accomplishments, and have no materials of thought or feeling, and no regular or imperative occupations to *demand* attention, and whose brains, in short, are half asleep. Such persons have litreally nothing on which to expend half the nervous energy which nature has bestowed on them for better purposes. They have nothing to excite and exercise the brain — nothing to elicit activity; their own feelings and personal relations necessarily constitute the grand objects of their contemplations: these are brooded over till

the mental energies become impaired, false ideas of existence and of Providence spring up in the mind, the fancy is haunted by strange impressions, and every trifle which relates to self is exaggerated into an object of immense importance. The brain having literally nothing on which to exercise itself, becomes weak, and the mental manifestations are enfeebled in proportion; so that a person of good endowments, thus treated, will often not only exhibit something of the imbecility of a fool, but gradually become irritable, peevish, and discontented, and open to the attack of every form of nervous disease and of derangement from causes which, under different circumstances, would never have disturbed them for a moment.

That the liability of such persons to melancholy, hysteria, hypochondriasis, and other varieties of mental disease, really depends on a state of irritability of brain, induced by imperfect exercise, is proved by the vast and rapid improvement we often witness from the sudden supervention of occurrences which excite and employ the mental powers and their cerebral organs. Nothing is more usual than to see a nervous young lady, who for years had been unfit for any thing, while ease and indolence were her portion, deriving the utmost advantage from apparent misfortunes which throw her upon her own resources, and force her to exert her utmost energies to maintain a respectable station in society. Where, as in such circumstances, the mental faculties and brain, the intellect and moral and social feelings, are blessed with a stimulus to act; the weakness, the tremors, and the apprehensions, which formerly seemed an inborn part of herself, disappear as if by enchantment, and strength, vigor, and happiness take their place, solely because now God's law is fulfilled, and the brain with which He has connected the mind is supplied with that healthful stimulus and exercise which He ordained to be indispensable to its healthy existence, and to comfort and welfare.

An additional illustration, and I venture upon it, because the principle is an important one in the production, not of

insanity only, but of many other distressing forms of disease, will be found in the case of a man of mature age and of active habits, who has devoted his life to the toils of business, and whose hours of enjoyment have been few and short. Suppose such a person to retire to the country in search of repose, and to have no deep moral, religious, or philosophical pursuits to occupy his attention, and keep up the active exercise of his brain, — the latter will lose its health, and the invariable result will be ennui, weariness of life, despondency, and every variety of nervous diseases.

At this very time, indeed, since part of these observations were actually in print, I have met with a case, in which the predisposition to cerebral disorder, attended first by hysteria, and subsequently by derangement of mind, was obviously produced in this way, and was, at the same time, so strong, as scarcely to have required any other cause to excite the disease. The circumstances were so exactly those mentioned as creating a predisposition in nervous females, that, had the description not been written before they occurred, it might have been supposed to have been drawn from the case to which I allude.

*Excess* of mental activity, either in degree or in duration, is also an infringement of the third condition of health, and, as such, predisposes to cerebral and nervous disease. If the brain be tasked too much, and proper intervals of relaxation and sleep be denied to it, its functions soon become disturbed, as is daily witnessed in the production of fevers, headaches, and every form of mental affection from watching, intense excitement, or exertion of mind, and neglect of sleep. But the causes thence arising being more active than predisposing, fall more properly to be treated of subsequently.

The *fourth* and last condition required for the health of the brain, which I shall here notice, is a due supply of properly oxygenated blood. In the middle divisions of the scale, it is difficult to estimate accurately the influence of this condition; but, at the extreme points, it is too obvious to be overlooked.

If the stimulus of arterial blood be altogether withdrawn, the brain ceases to act, sensibility becomes extinct, and the mental powers are no longer manifested. Thus, when fixed air is inhaled, the blood circulating through the lungs does not undergo that process of oxygenation which is essential to its vitality. It is therefore sent to the head dark and venous, exactly as received; but being in this state unfit to excite or support the action of the brain, the cerebral functions become impaired; 'great heaviness in the head, tingling in the ears, troubled sight, a great inclination to sleep, diminution of strength, and falling down *;' or, in short, a cessation of all the functions of sense, thought and feeling, take place, and death ere long closes the scene. If, on the other hand, the blood be too highly oxygenated, as by breathing oxygen gas instead of common air, it becomes too stimulating, and excites an intensity of action bordering on inflammation, also soon terminating in death.

Such are the two extremes; but the slighter variations have equally sure, although less palpable, effects. If the vitality of the blood be impaired, as by breathing an atmosphere so far vitiated as to be insufficient to produce the proper degree of oxygenation, the blood then affords an imperfect stimulus to the brain; and, as a necessary consequence, languor and inactivity of the mental and nervous functions ensue, and a tendency to headache, syncope, or hysteria, makes its appearance. This is seen every day in the listlessness and apathy prevalent in crowded and ill-ventilated schools; and in the headaches and liability to fainting which are so sure to attack persons of a delicate habit in the contaminated atmosphere of crowded theatres, churches and assemblies. It is seen less strikingly, but more permanently, in the irritable and sensitive condition of the inmates of cotton manufactories, crowded schools, and public charities. In these instances the operation of the principle cannot be disputed, for the languor and nervous debility

* Orfila, Toxicologie, vol. ii. p. 422.

consequent on confinement in ill-ventilated apartments, or in air vitiated by the breath of many people, are neither more nor less than minor degrees of the same process of poisoning, to which I have above alluded. It is not real debility which produces them; for access to the open air almost instantly restores activity and vigor to both mind and body, unless the exposure has been very long, and then more time is required to re-establish the exhausted powers of the brain. A good deal of observation has convinced me, that imperfectly oxygenated blood being sent to the brain, is greatly more influential in the production of nervous disease and general delicacy of constitution than is generally imagined; and that no practice can be more irrational and injurious in this respect, than the very prevalent custom of sleeping in beds closed in on all sides by curtains, which do away with every advantage resulting from the size of the room as effectually, as if its limits did not exceed those of the bed itself.

Other predisposing causes are generally mentioned, such as age, sex, and profession; but as almost all of them may be resolved into extreme exercise of one or more of the cerebral organs, to the neglect of the rest, it is unnecessary to consider them here, at least in detail. For instance, the middle period of life is more fertile in the production of mental derangement, only because it is then that the brain is in its highest state of activity, and then the mind is most agitated by violent and tumultuous passions. It is then that love, fame, wealth, pride, &c. take possession of the mind, and, by their continued excitement, lead to cerebral disease. The female sex, again, predisposes to insanity, in common with all other diseases of the nervous system; because in the female the feelings are more acute, and external resources are more limited. And a sedentary and literary life predisposes to cerebral affections, and consequently to mania, for the same reason that it keeps the brain in an undue and permanent state of activity, convertible from the slightest cause into a state of morbid excitement.

I have already mentioned, that a strong affinity exists between the causes of acute diseases of the brain and of those cerebral affections which permanently derange the manifestations of the mind ; but, as might be expected *a priori*, this relation is much more remarkable between the direct exciting than between the predisposing causes. Hereditary descent, for instance, has much less influence in the production of an acute disease, like meningitis, than in the production of mental derangement, and for this obvious reason, — acute diseases come on suddenly from strong exciting causes, they run their course rapidly, and terminate in a very limited time, either in the perfect restoration of health, or in the extinction of life. During their continuance, the patient exercises all his functions with difficulty or pain ; and for that of procreation he is totally unfit ; so that none of his offspring can date their existence from such a state of his system. When the disease is over, if the recovery is complete, the constitution is unimpaired, because the affection has been of too short duration materially to affect the general organization. But chronic diseases, like those which produce insanity, are very different. * They come on slowly, often from the continued action of trifling causes, operating upon a pre-existing predisposition, they run their course slowly, and it is frequently only at the end of years that they terminate in health or in death. During their continuance the patient executes his other functions with little or no impediment ; but his constitution being then thoroughly impregnated, as it were, with the morbid action, its influence extends over every function, and consequently is transmitted to children then or afterwards produced.

That this is the true theory of hereditary susceptibility of

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* In using the word *chronic*, in this and other places, as applicable to the morbid states which constitute insanity, I must not be considered as maintaining that they are never of an *acute* nature. The contrary is, in fact, frequently observed, and I speak of them as chronic, only because I cannot find a word to convey the meaning with greater accuracy.

disease, is, moreover, apparent from the fact already mentioned, that, in accidental cases of madness, children born *before* the insanity of the parent, are not more subject to its attacks, than children born of parents who have never been so affected. If, therefore, acute diseases are less frequently hereditary than chronic, it is not from any exception being made in their instance to an invariable law of nature, but simply from their duration being so short as not to contaminate the system. This we consider to be a very important consideration, and deserving of more notice than it has yet received.

## CHAPTER V.

### EXCITING OR OCCASIONAL CAUSES OF MENTAL DERANGEMENT.

In studying the pathology of the brain and nervous system, and the derangements of the mental manifestations to which all their morbid affections more or less give rise, it is essential to discover not only the immediate cause, but also the relation which that cause bears to the constitution upon which it has acted; for in this latter point does the whole practical value of the inquiry consist. Without attending to this, we may indeed know, in a general way, that certain circumstances will act prejudicially; but we shall be unable to trace any connexion between them and the definite form in which the injury shows, itself, and shall therefore be less able to guard against or to counteract their influence. For instance, in one individual, or in one state of health, exposure to solar heat is a cause of mental derangement; but then, in a different constitution or state of health, it is also a cause of other maladies. — A young man lay by a river side with his head exposed uncovered to the direct rays of a summer's sun, and shortly after became delirious, and in four days died of inflammation of the brain; another person, similarly exposed, soon began to complain of headache, sickness, thirst, heat, and other symptoms of fever, and went through a severe febrile attack before he recovered his usual health; while, from the same cause, a third individual

became deranged, and did not throw off the disease for many months; and yet in all these cases the efficient or immediate cause was identically the same, and the difference of result was owing solely to the difference of constitution or state of the individual to whom it was applied.

So important, indeed, is the latter condition, that it is generally it which determines the nature of the future disease; and for this reason, we often find the acuter affections of the brain arising from the same causes whence those which constitute the various forms of insanity originate. The chief difference that obtains between them is, that the causes of the former are either more powerful in degree, or are applied to a more irritable and exciteable subject. Sudden and excessive mental distress, for example, will sometimes give rise to apoplexy, to epilepsy, or to phrenitis, as it used to be called; while continued but less intense anxiety will gradually stir up that lower but more permanent morbid action which constitutes insanity; and, on the other hand, if the person be, from constitutional or other peculiarities, predisposed to any particular form of disease, then the exciting cause, however slight, will occasion that form in preference to any other; and thus, nothing is more common than to see a particular cause, the direct tendency of which is, in every case, to disturb the health of the brain, produce fever and delirium in one, mania in another, melancholy in a third, hysteria in a fourth, epilepsy in a fifth, and no disease whatever in a sixth; the effect varying according to the constitutional or existing peculiarities of each. In consequence also of the natural affinity subsisting between these affections, from all of them having the same seat, they are often observed to pass into and to complicate each other.

In seeking thus to connect the two kinds of diseases to which the cerebral structure is liable, it will be useful to call the attention of the reader to the well-known but rather neglected fact, that, let the cerebral affection be either acute or chronic, it equally involves the soundness of the mental mani-

festations; although, by long habit founded on ignorance, we have been accustomed to consider that as mental derangement, and a distinct disease, which attends the *chronic* form, and that as delirium and merely a symptom, which is, in truth, the derangement of the acute disease. Now, however, we cannot fail to perceive, that insanity and delirium stand in precisely the same relation to their organic cause, and that the one is altogether as much a symptom as the other. If, for example, we take up Dr. ABERCROMBIE's recent and valuable publication on the Pathology of the Brain, we shall find, in almost every page, change of character and dispositions, delirium, peevishness, wandering of the judgment, loss of memory, coma, or suppression of the mental powers, mentioned as appearing in its acute diseases, just as we find false perception, hallucinations of feeling, and errors of judgment, in the chronic; but we never find that author erecting delirium into one disease, loss of memory into another, or coma into a third, as is commonly done with the particular hallucination of insanity; and we never find him treating of the mental affection as distinct from the bodily disorder, as we see generally done in treating of the mental symptoms consequent upon chronic diseases of the brain. In every instance of acute disease, the pathologist rates the mental phenomena as symptoms, and refers to them only for the purpose of tracing them to the organic lesion which produces them; and, therefore, in prosecuting our researches into what are erroneously called Mental Diseases, we must follow the same course, and study the nature of the organic disorder which disturbs the mental functions, and not waste our labor in vain attempts to classify mental symptoms into independent diseases.

Whatever disturbs the healthy action of the brain may become an *exciting* cause of insanity, and of nervous disease. External violence, the application of intense cold, exposure to solar heat, irritation in a distinct organ of the body, severe and unremitting study, mental affections, grief, fear, anxiety, inordinate ambition, and, in short, any feeling of the mind

roused to an inordinate degree, are all occasional causes of insanity and of cerebral disease, because all of them tend to disturb the healthy action of the brain. But it must be observed, that the same causes sometimes do not occasion any disorder in the manifestations of the mind, either of an acute kind, like delirium, or of a chronic nature, like insanity. This difference of result depends, as formerly pointed out, on the peculiar constitution to which the exciting cause is applied. If a hereditary predisposition to insanity exists, then the consequence will most likely to be an attack of mania; if there be no predisposition, and the patient be young and vigorous, and the cause sudden and violent, then acute disease and delirium will most probably follow; and lastly, if the individual be arrived at maturity, and otherwise in good health, and be favorably situate in respect to resources the effect may be simply a paroxysm of mental distresss, which will subside before it goes the length of disease. In all these instances, however, the *tendency* and *action* of the cause is *to derange the health of the brain;* and the manifestations of the mind never become morbid, unless the health of the brain be previously overset.

In accordance with the view we have elsewhere taken of the *situation* and *functions* of the brain, the exciting causes may be divided into two great classes of LOCAL and FUNCTIONAL. Among the *local* causes which derange the mind, by disturbing the healthy action of the brain, is, I need hardly say, external violence. Every body knows that a blow on the head sometimes suppresses the mental operations altogether, which is certainly the *ne plus ultra* of derangement; and every professional man is aware that a fracture of the skull and wound of the brain frequently give rise to acute inflammation, and to mental disturbance in the form of delirium, while at other times they terminate in a chronic change, accompanied with mental disorder in the form of idiocy.

Cold is another local cause which exerts a powerful influence on the mind and brain. Intense cold stupifies, and pro-

duces many of the effects of intoxication; and moderate cold, as is well known to dram-drinkers, clears the head and facilitates thinking. Baron Larrey, who had a very wide field for observation, tells us, that, during the disastrous retreat from Moscow, numerous cases of insanity, in every variety of form, and even a very great number of deaths, were produced by the continued action of the intense cold upon the the brain, aggravated as its power was by the dreadful sufferings to which the soldiers were otherwise exposed.

But we need not go farther back than to the narrative of Captain Parry's expedition, for unquestionable examples of this fact. One very cold day, Captain Parry sent two young gentlemen in search of a marine, who had been exposed to a temperature much below zero, without any adequate protection; and so great was the effect even upon them, that when he sent for them into his cabin on their return, 'they *looked wild, spoke thick and indistinctly, and it was impossible to draw from them a rational answer to any of our questions.* After being on board for a short time, the mental faculties appeared gradually to return with the returning circulation, and it was not till then that a looker-on could easily persuade himself that they had not been drinking too freely. But to those who have been much accustomed to cold countries, this will be no new remark.' *

In medicine, indeed, the action of cold upon the head and brain is so well appreciated, that it is daily had recourse to in the cure of disease, and, most of all in the cure of insanity; and the success which attends it in subduing increased action, and in calming the most violent and furious mental excitement, is a strong proof of the intensity of its action on the brain.

That great heat may also derange the health of the brain, and give rise to insanity, is evident from the fact, that exposure of the uncovered head to the direct rays of the sun, has very often brought on a severe and long continued paroxysm of mania; and, perhaps, still more frequently acute cerebral dis-

* Parry's Voyages, vol. i. p. 185.

ease and violent delirium, terminating sometimes in idiocy, and sometimes in death. It is also to be remarked, that, in European climates, the greater number of cases begin during the heat of summer; and that, although the natives of warm climates, whose constitutions are adapted to the temperature, do not seem to be so much exposed to insanity as those of more temperate regions, yet the latter are much more liable to attacks and to relapses in hot than in cold countries.

Numerous other instances might be given of causes acting locally upon or in the brain giving rise to insanity, but a few need only be named. Tumors, exostoses, apoplexy, and palsy, are examples of this kind; and every one must have seen or heard of cases, even in private life, in which apoplexy and palsy ended in the derangement or weakening of the mental powers. Esquirol rates apoplexy as constituting about one-sixth of the *physical* causes of insanity; and, in fact, it is rare to see palsy without some marked disturbance of the the mind. These circumstances, it must, however, be observed, do not of themselves constitute insanity. They only tend to produce that disordered cerebral action on which it depends. Fevers may also be noticed as occasionally deranging the mind, by disordering the healthy action of the brain; and it is allowable to cite them as instances, because, even when wavering is first perceived in fever, every one admits and exclaims, that '*the head is affected.*' Delirium, indeed, is a form of mental derangement, just as much as melancholia, nostalgia, or mania; and as it is important that the true relation of these to each other and to the brain should be accurately perceived, I may be allowed to mention a case, which has lately occurred to me, and which bears upon the point.

A gentleman of a nervous and sanguine constitution, and in the prime of life, after long watching, continued anxiety, and much mental activity (all eminently calculated to exalt the action of the brain), was seized with fever, attended from the beginning with many symptoms indicating a serious affection of the head. At first, weakness of mind, and forgetfulness of recent occur-

rences, were observable ; but, after a time, delirium supervened, characterized by wildness of expression and of conversation, rather than by violence, and continued in a greater or less degree about five weeks. Near the end of that time, when the patient was gradually recovering from it, his brain, being still very weak and exciteable, the following remarkable state was observed for several days in succession : — When I went first into his room, after he had been for some time in a state of repose, he was perfectly calm and collected, and answered every question most rationally ; but, after the lapse of three or four minutes, the stimulus of my presence and queries began to operate upon him by almost insensible degrees, and to rouse the brain to undue action, as indicated, physically, by a slight circumscribed redness of the cheek, and glistening of the eye, and, mentally, by the interjection at first of a few vague unmeaning words, and shortly after of whole sentences; reason still, however, maintaining the ascendency, till in a minute or two more the excitement became purely morbid, and the ideas totally irrational. Convalescence had by this time proceeded so far, that as soon as the extraneous stimulus was withdrawn, the cerebral activity subsided, and the usual sound perceptions gradually returned ; and for some days the progress of his recovery was distinctly marked by the increased length of time during which he could bear the presence and conversation of any one in the room, without giving way to illusions. One day, for instance, he answered my inquiries very collectedly ; and when I was turning round to leave him just a little excited, he called me back, and requested as a great favor, and in a calm but earnest tone, that I would use my influence with the proper authorities in town to have that ' disagreeable noisy Frenchwoman with the red cap on her head,' removed from the foot of his bed, where she sat constantly, sometimes grinning at him, sometimes screaming, and sometimes singing pleasantly enough ; on being left alone, the excitement subsided so quickly, that he became rational again in a few minutes.

In this case, the sympathy between the mind and brain was

so instantaneous, and the condition of the one so exactly proportioned to the state of the other, that no one could have seen it, and continued to doubt of the local seat of mental derangement, or of the power of intellectual or moral causes to disturb the action of the brain, and thereby induce insanity. In another respect also, the case was valuable, as it showed the close connexion existing in nature between the acute and chronic, or slow affections of the brain and mind. We have just seen, that in investigating the action of causes, it is as necessary to attend to the constitution of the subject as to the nature of the agent, as the same cause which, in one state of the constitution, produces acute disease like fever, will, in another, give rise to a slower disease like insanity, and, in a third, to some nervous disorder, such as hysteria or epilepsy. This principle was strongly exemplified in the case under consideration. The causes, viz. anxiety, labor and watchfulness, were exactly such *as in a hereditary predisposed subject would have excited insanity*, and it was entirely owing to the patient being free of any taint of this kind, that the resulting cerebral affection was of the acute form. The analogy between the two forms of disease was very marked throughout, and even the mental symptoms, which in general are the most different, were, in this instance, remarkably allied to those of insanity. The illusions in regard to some things, contrasted with the perfect accuracy of perception in regard to others; and during the whole time that the delirium lasted, there was a coherence of thinking, that, like the same occurrence in insanity, only required the premises to be granted to make the conclusions perfectly logical. The difference between the two states, indeed, was to be perceived solely in what may, in a general way, be termed the bodily symptoms. The quick pulse, dark thick fur, dry skin, emaciation, and febrile heat, denoted an acute disease, very dissimilar from that which constitutes insanity; but the mental delusions were sufficiently similar to work the strong family affinity subsisting between insanity and delirium, and the necessity of considering both as the effects of, or symptoms resulting from, disease of the same organ, viz. the Brain.

When the mental functions are disturbed in an acute disease like the above, nobody doubts that they are so only because the brain is affected; but when they are deranged in slower diseases, like those which constitute insanity, many deny that there is any thing wrong with the head at all, when in reality, the difference is often one of *degree* only; for delirium is as closely allied to insanity as one form of insanity is to another. Both, in short, are symptoms, and both indicate the existence of cerebral disorder, and each varies in its features and character according to the mind of the individual, and the kind and extent of disease existing. The main features of insanity are rarely alike in any two instances; and neither are those of delirium. In delirium, the patient sometimes believes himself threatened by furies and devils, beset by assassins, or a victim to the darkest plots, and he cries aloud with frantic alarm; at another time he breathes curses and imprecations, foreign to his nature, on the head of his faithful attendant; and at a third, clasps his hands in fervent devotion. In insanity, the exact counterpart of this is seen, on a different scale, and accompanied, it may be, with more of consciousness, but still in essence the same. Like delirium, insanity is a symptom of cerebral disease; and hence, like delirium, it varies in its character and in its intensity, according to the nature of the disease, and the portion of brain affected. But, as the nature of the acute disease may still be the same, when the form of delirium is different, so may the nature of the slower malady be also the same, although the form of mental derangement is different, thus in one it may present the features of melancholy, and in another those of mania.

Another cause of a similar nature may be adverted to, and, for the same reason, its action on the brain is not denied or doubted, — I allude to the abuse of intoxicating liquors. That wine and spirits in unusual quantity derange the mental manifestations, I need hardly stop to state; and this being the case, it is easy to conceive that habitual excess may at last induce a permanent irregularity of action in the brain, amounting to disease; and, accordingly, nervous tremors, headaches, fits of

excitement, often amounting to mental alienation, and delirium tremens, are observed to be common consequences of over-indulgence.

The remarkable increase of insanity among the lower orders in Great Britain, particularly in the manufacturing districts, has been pretty accurately traced, partly to the miseries, want, and anxiety, inseparable from the fluctuations to which they are exposed, and partly to the prevalence of dram-drinking, as the only means of relief within their reach. That it is not the mental distress alone which is the cause, is proved by finding the large majority of the patients to be among those who have been the most intemperate. Occasionally, however, it must be admitted, the excessive drinking is only the first symptom, and not the cause of the disease.

That intoxication acts upon, and disorders the brain more directly than any other organ, is further evident from observing the effects of an excess upon persons of different habits and constitutions. Thus an excess may so excite the brain of a strong healthy man as to throw him into a brain-fever, as it used to be called, or into a state of delirium, or temporary madness; and the same excess in a person constitutionally liable to insanity, will probably excite the brain in that peculiar way which constitutes mania; thus establishing in another way the strong connecting link between all forms of cerebral disease and all varieties of mental disturbance. From the permanence of the irritation kept up in the brain by systematic intemperance, the habitual drunkard will be more liable to attacks of insanity, and the occasional debauchee to attacks of cerebral disease in one or other of its acuter forms.

It is a singular circumstance, that inanition and starvation also act powerfully in altering the healthy action of the brain, and consequently in producing insanity; but they seem to lead to this result by the brain suffering in common with other parts of the body; — and I allude to it only to remark, that, in many instances, the loss of reason thence resulting has seemed like a beneficent dispensation of Providence, to render the suffer-

ers less sensible of their calamitous situations. The horrors consequent upon the shipwreck of the Medusa, on the coast of Africa, admit of an explanation only on the notion of the heat, starvation and mental agony having combined to produce positive insanity. Indeed, it is impossible, on any other supposition, to reconcile the revolting and unmeaning atrocities which the unhappy sufferers perpetrated upon themselves, and upon each other; and, as illustrative of this view, I may refer to the instances which every now and then occur, of insanity being caused or kept up by the sudden deprivation of long accustomed stimuli, and to a curious example lately recorded (in the 17th Number of the Medico-Chirurgical Review, page 181), in which a thief, long accustomed to the abuse of spirits, became insane on being restricted to bread and water, and was cured by the administration of a modicum of brandy. The same result is often witnessed in convalescence from fever. When the crisis is past, and great debility, with quickness of pulse and wandering of mind remain, the well-timed administration of wine and other stimuli will not only abate the fever and lower the pulse, but put a stop to the mental delirium.

But it is needless to continue the enumeration of this description of causes, they being already well known. As, however, several of them operate in infancy and in decrepitude, when insanity rarely occurs, as well as in maturity, when it is most frequent, it may fairly be asked, how it happens that mental derangement should be confined almost entirely to youth and to middle life? To this there are two answers: *first*, The above are not by any means the most frequent causes of insanity, and consequently proportionally few cases should be produced by them at any age; and, *secondly*, There is in infancy and in old age a very material difference in the state of the subjects to whom the causes are applied — a condition which I have already insisted on as influencing the kind of disease produced by any given cause. In early life the brain is so delicate in its structure, and so easily injured, that its diseases are active and rapid in their course, demanding ener-

getic treatment for their relief, or soon destroying life itself; and convulsions, hydrocephalus, and not insanity, are the symptoms which then appear. In old age, on the other hand, the brain has lost so much of its activity by natural decay, and the vivacity of feeling and energy of thinking are thereby so much subdued, that exciting causes of any kind have no longer the same hold, and no longer make the same impressions that they would have done in earlier life; and hence the misfortunes and anxieties which years before would have roused the mind to gigantic exertions, plunged it into the deepest affliction, and involved its organ in disease, now fall upon it comparatively unfelt. And hence also we are ever carried back to the *state of the individual* to whom the cause is applied, as a paramount and never to be neglected element in the philosophical and practical investigation of the effect.

The second or *functional* class of causes comes now to be considered; but to understand the manner in which they act, we must keep in view the twofold functions of the brain, and regard it not only as the seat of thought and of feeling, but as the centre of sensation and of nervous energy. This is necessary, because a distinct set of causes is related to each of these divisions. As the centre of *sensation*, the brain is constantly stimulated and acted upon by whatever is passing in every part of the body. If a breath of wind strikes upon the face, it is the brain which feels it; or if a straw falls across the foot, it is again the brain which apprizes us of the fact. In the healthy state, the intimations sent to the brain of the condition of other organs, as the stomach, the intestines, or the muscles, are scarcely attended with consciousness; because, if they were acutely felt, our attention would be entirely and needlessly taken up by them. But if, from disease, an altered action be set up in any part, that moment a disagreeable sensation is transmitted to the brain, compelling us to attend to it. Even a whitlow on the point of the finger is often so excruciatingly painful as to throw the brain into a state of excitement incompatible with sleep, thinking, or sound feeling, and sometimes

even in positive delirium. In like manner, in inflammation of a large joint, the sensation transmitted to, and perceived by, the brain, will often overstimulate the latter to such a degree as to induce violent delirium, which will immediately cease on removing the remote irritation.

The brain being thus so powerfully acted upon by irritation in the more external and unimportant parts of the body, is naturally still more influenced by sources of irritation occurring in internal organs. When the lungs, the stomach, or the bowels, are attacked with inflammation, or other kinds of morbid excitement, their natural sensibility becomes exalted, the stimulus sent to the brain becomes excessive, its action is exalted, and acute pain and anxiety are felt, in place of that simple sensation of comfort, which is the only feeling of the healthy state. But it is the brain alone which feels this intense pain, and it is its affection alone that gives rise to the restlessness, anxiety, and depression, which characterize these diseases. And I have already shown that the delirium into which it sometimes runs in these cases, differs almost in nothing from mental derangement, except in being generally a symptom of an acute instead of a chronic form of disease. The effect of remote irritation upon the encephalon, as the centre of sensation, is so great, that in acute diseases, like inflammation of the bowels, it often happens that the reaction upon the brain gives rise to a state of depression in the nervous system, which lowers the force of the circulation and the powers of life, and thus produces a feeling of inexpressible anxiety, sinking and faintness, sufficient to deter the inexperienced practitioner from that free use of the lancet which can alone restore the strength and save the life of the patient. And hence it is certainly quite natural to suppose that a lower but *more permanent* degree of morbid action in the same organs may, in susceptible subjects, at last produce that lower but more permanent form of cerebral disease from which insanity arises. It will not do away with this inference to say that chronic affections of the stomach, bowels, and liver, often exist for years, and yet cause no disturbance

of the brain or mind, but leave the latter gay, lively and unclouded as ever; for the parallel holds in the acute diseases, and admits of an explanation in both. Independently of the existence or non-existence of predisposition to cerebral disease and insanity, it is certain that diseases affect different structures in the same organ, in different cases and at different times. In deranged digestion, for instance, it is sometimes the mucous coat of the stomach which is morbidly altered; sometimes it is the muscular coat; and at other times it is the glands or follicles which secrete the juices; and in some instances it is the nervous plexus and structure, which are more especially the seats of the morbid action. In each of these cases it is, of course, the function of the structure most deranged; and hence, when the *nervous* portion is in high morbid activity, the brain and nervous system naturally participate more keenly than when only the mucous or muscular coats are diseased. And hence, in those long standing cases of hypochondriasis or insanity, in which no moral causes have been at work, and the mental affection has manifestly followed, and not preceded, the existence of the abdominal disease, it is perfectly conclusive to hold, that the nervous structure in a state of excitement was the exciting cause of the disorder of the brain; always keeping in mind, however, that where a predisposition to disease exists in the brain, the remote irritation will act with much greater force, and more probably upset reason, than where there is no such tendency.

It has been remarked by both Bayle and Broussais, and with much appearance of truth, that, when cerebral disease springs from irritation in remote organs, such as the stomach or liver, the mental delusions resulting from it have a direct relation to the functions of these organs. Bayle gives a number of cases in which inflammation and ulceration of the mucous membrane of the stomach and intestines seem to have preceded the mental affection, and given rise to the dread of poison, to the refusal of food, to melancholy, and even to suicide, as the means of escaping from poison, the features of the hallu-

cination*. Broussais, on the other hand, after laying down as an undeniable principle, that whatever stimulates the brain may become a cause of madness, and calling attention to the fundamental truth, that the brain is placed between two orders of stimuli, those which come to it by the nerves of the external senses, and those which it receives from the nerves of the internal viscera, adds, that, next to local causes, the most influential are irritations proceeding from the stomach, liver, or duodenum. 'Indeed, many persons contract, under the action of an exciting regimen, of poisons, or of irritating medicines, a chronic gastritis, which, after having kept them for some years in a hypochondriacal or nervous state, ends by throwing them into a mental alienation. Others lose their reason in a much shorter time from the same cause. If the time is extremely short, and the gastritis acute, the delirium is no longer called *madness;* it then becomes phrenzy, or febrile delirium. But, what is very remarkable, is, that frequently the *moral* causes, or those which act most directly upon the brain, only give rise to madness, after having first developed and kept up gastric inflammation for some time, as if the encephalon required, in certain subjects, the reaction of the viscera, to stimulate it to the necessary degree of irritation. This happens in many melancholics from nostalgia, unrequited love, loss of fortune, mortified pride, &c. who lose their reason only after having long suffered from gastro-enteritis and mental depression. And this ought not to excite surprise, as in many persons, moral emotions, although felt by the brain, produce at the time ess effect on the organization of that viscus, than on that of the heart, lungs, or stomach.' †

The same principle of the brain being the centre of all sensation, and of its being more affected by the exaggerated than by the natural irritation transmitted to it from other organs, explains satisfactorily the production of hydrocephalus, convulsions, epilepsy, and other cerebral disorders by irritation,

* Medico-Chirurgical Review, vol. viii. p. 121.

† Broussais, De la Folie, p. 337.

such as worms in the intestinal canal, by biliary or digestive derangement, or by teething. It is well known, that irritation in the stomach, caused by a surfeit or by dyspepsia, over-stimulates its nerves, and thereby affects the brain so much as to excite headache and incapacity for thinking; and therefore it is not to be wondered at that permanent irritation of the digestive organs should, in persons strongly predisposed to insanity, often induce one or other of the forms of mental derangement.

A good deal of importance used to be assigned to suppression of menstruation, of hemorrhoidal and other discharges, and to irritation of the sexual organs, as causes of insanity. But Georget, Falret, and Voisin have successfully shown, that, in a great majority of the instances recorded as examples of this kind, the above phenomena were in reality the consequences, and not the causes, of the cerebral and mental affections. In almost every case, anxiety, grief, depression of spirits, apprehension about futurity, change of temper and dispositions, and hallucinations of judgment, were observable long before any of these secondary symptoms appeared; and it was only from the decided explosion of the maniacal paroxysm corresponding, in the order of succession, to the disappearance of the discharge or eruption, that the latter came to be regarded as the cause. But, having succeeded in establishing this position, the same authors went a step further, and, misled by the much greater frequency of derangement from the action of moral causes than from irritation in secondary organs, labored to disprove the latter altogether, and to show that, when minutely analyzed, all cases of the latter description directly resolve themselves into the former; but, in thus denying the efficiency of a morbid state of the digestive organs in exciting insanity, they certainly commit one error in exposing and another, and thus rather bring their sounder and more important views into unmerited discredit. Dr. Spurzheim, however, who anticipated, by several years, all the points of doctrine which have procured them so much praise, avoids this error; and while he inculcates as earnestly as they do, the great power

of the moral causes, gives due weight to the occasionally unequivocal influence of irritation in other organs as an exciting cause of cerebral disease; and, in this respect, his sagacity and more cautious deductions have given him a decided advantage over them.

But, while we thus notice and give due importance to the functional causes connected with the brain as the centre of sensation, it is necessary to observe, that their influence is very small, and the cases arising from them very few, when compared to those arising from the brain, considered as the seat of Feeling and of Thought. For, unless a strong hereditary or acquired predisposition exists, biliary, intestinal, stomachic, or uterine irritation may continue for months, and eruptions and evacuations may be suppressed, and still the brain and mind remain unaffected. Secondary causes like these act first on the weakest parts of the body; and hence the suppression of a customary discharge will produce pulmonary disease in a person of weak or irritable lungs, cerebral disease in one of a nervous or irritable constitution, and stomachic disorder in one of a weak or irritable stomach; while, in a person of a vigorous constitution, the discharge will promptly be re-established, and no bad result follow to the general health.

The functional causes, then, which have a reference to the brain as the seat of Feeling and of Thought, are not only the most frequent and most important, but in the strictest sense *functional*. These are generally called *moral* causes; but if we are unacquainted with mind, separate from the material organization, and if every condition of mind is in this life as inseparably attended by a corresponding state of the brain, as every act of vision is attended by an affection of the optic nerve, then it becomes conformable to reason tohold, that every aberration of mental manifestation is the consequence of diseased action of its organ, and not of impaired efficiency or disordered function in the immaterial spirit. The term *moral* cause has a reference to disease in the mind itself, and was used by those who subscribed to this hypothesis. The term *functional* has a reference to disorder in the action of the organs of mind, and is therefore more proper for our purpose.

It is not difficult physiologically to understand how functional exercise becomes an exciting cause. When we use the eye too long, too intently, or in too bright a light, its vessels and nerves become too much excited, and a sensation of fatigue and pain arises. If we still continue its exercise, the excitement increases, the vessels act with unusual force, and becoming distended with blood, give to the membrane what is called a blood-shot appearance, the surface of the eye becomes suffused with tears, the eyelids sore, and a feeling of tension and weight, which extends to the forehead, is felt. If we now turn away the eye, the irritation gradually subsides, and the healthy state returns; but if we continue to look intently, or resume our employment, before the eye has regained its natural state by repose, the irritation at last becomes permanent, and disease, followed by weakness of sight, or even blindness, may ensue, as often happens to glass-blowers, smiths, and others, exposed to work in an intense light. Captain Parry tells us, that, in the northern expedition, whole parties became almost blind, from looking anxiously for land-marks over a dazzling surface of snow; and that, whenever he himself had occasion to look about longer and more earnestly than usual on an excursion, he was sure to have snow-blindness. I have seen one instance of the same result. About two years ago, I was consulted by a young medical friend, who became and remained blind for several months, from abuse of function of a similar nature, in devoting himself to reading for fourteen or sixteen hours a-day, till at last sight was impaired to such a degree, that the eye could no longer trace the forms of the letters, and the patient could only see something dark on a white ground. This is analogous to what we experience on keeping the eye intently fixed for a few minutes on a white spot on a black ground, and turning it suddenly to a surface entirely white; for we then see on the latter a *black* spot, which results from the part of the retina, formerly fixed on the white spot, being too much fatigued to receive any impression

from the light, — the absence of light being *dark* or *black*. These are instances of disease from abuse of function; and it cannot be doubted that in them changes in the *eye* had taken place, corresponding to the functional alteration.

In the same way, if there be part of the brain by means of which the mind feels the emotion of fear, it is easy to conceive how violent and long continued action of that part should first induce functional aberration, characterized by unusual energy and vivacity of the corresponding feeling, and ultimately give rise to permanent disease, or even change of structure, in the organ, rendering its healthy action forever after impossible. The mental phenomena attending such a process would be first extreme anxiety, apprehension and terror, from inadequate causes, corresponding to excessive action in the organ of Cautiousness; and afterwards permanent melancholy and depression of mind, if the irritation in the organ was of a more durable character. But if the morbid change was so great as to impair the *structure*, as in ramollissement, a suppression of the feeling of fear, and a consequent incapacity of acting with caution and prudence, would be the consequence.

Of the first or temporary excitement of Cautiousness from high internal activity in the organ, I saw a singular case last autumn in a gentleman, whose faculty of circumspection had been in constant activity for several months in directing the sailing of his pleasure-yacht during rather a squally summer. By this daily exercise, the energy and activity of the organ had been highly roused, and the consequence was, that, on his return home, where it had nothing to guard against, and no legitimate way of exhausting itself, he found himself suddenly seized with nocturnal fits of terror and alarm, without even an imaginary cause; and these gradually abated in proportion as the excitement subsided. Of the second kind, or permanent melancholy, we have every where too many examples; and of the suppression of feeling from change of structure in the organ, we have an interesting example in the Reverend Mr. M. *,

* Phrenological Transactions, p. 312.

who, in consequence of apoplexy and ramollissement in the organs of Cautiousness, became totally inconsiderate, from having been cautious and prudent. He recovered so far as to manifest his intellectual faculties and religious feelings in a state of integrity; but his Cautiousness was forever impaired, and so completely was he inconsiderate in feeling and in acting, that he was obliged to be withdrawn from public life.

In treating of regular exercise of the brain as a condition of its healthy action, I mentioned that activity of every part of the body, stimulates its blood-vessels and nerves to higher action, to enable it to meet the increased demand made upon it, — that it requires repose and time to allow the excitement to subside, — and that, if the exercise is kept up too long, or is too violent, the excitement then becomes morbid, and will no longer subside from mere repose; and in noticing the consequence resulting from infringement of this law, I added, that over-excitement would fall to be considered among the *active* or *functional* causes. The identity of these with what are termed *moral* causes will be obvious on the above principles. If an individual naturally timid (or endowed with a large Cautiousness,) and of an irritable constitution, be exposed to sudden and appaling danger, he may become insane, and the fright, in common language, is called the moral cause. Physiologically speaking, however, we would say, that the danger is the natural object which stimulates the organ of Cautiousness, just as light is that which stimulates the eye; and that the over-excitement of function thus produced has deranged the healthy action of the organ. Boerhaave, in his 25th Consultation, relates the case of a delicate lady, who was so terrified by a sudden thunder-storm that she became insane and melancholy, and lived for several months in the constant apprehension of the vengeance of an offended God; and I saw a young girl in the Hôtel Dieu, who labored under a severe and long attack of chorea, suddenly brought on from startled Cautiousness, on unexpectedly finding herself near a drunken soldier, who was

laying about him with his drawn sword. In such cases as these, we can understand a material organ, once inordinately excited, continuing to act irregularly to-morrow, and the next day, and the next again, until its health be re-established; and the function of the organ being to manifest Cautiousness, we can conceive terror, panics and anxieties, continuing during all that time to occupy the mind long after the external danger is withdrawn; whereas the whole phenomena become unintelligible on the principle of the danger, as a moral cause, having affected the immaterial principle itself. It would be an extraordinary notion to imagine an immaterial principle going on, for instance, fearing for days or weeks after the danger had vanished, or still alarmed at a danger six months old. But we can conceive a physical organ, once deranged, going on in a state of disordered function for weeks or months, until restored to health, just because it is in the nature of organs to be thus affected; but to comprehend the immaterial mind to be in this condition is impossible.

Functional excitement of the cerebral organs may arise in two ways, either from internal activity, or from the stimulus of external objects. Sometimes an individual falls by insensible degrees into a train of feeling or of thinking, which at first is characterized only by its intensity and frequency, but gradually increases in both of these respects until it becomes confirmed monomania. Thus a man of a vivacious temperament and mechanical genius, will commence with great ardor constructing some piece of mechanism; he will then conceive the idea of inventing the perpetual motion, and proceed with increasing interest and energy in his pursuit, till his conceptions shall become bewildered, this idea alone occupy the mind, and reason be displaced. According to the principles already explained, this will occur chiefly where a hereditary or acquired predisposition exists. The explanation is, that the organs of the constructive talents being naturally in excess in point of size, had at all times a tendency to preponderating action; that the first stage of this action was accompanied merely by

great mental earnestness and vivacity in the pursuit; but that this functional activity, long and energetically operating in organs possessing an imperfect constitution, at last degenerated into settled functional derangement, or, in other words, into a form of monomania. PINEL, I think, gives a case very similar to the above statement; and this is, in truth, the nature of the derangement which commonly affects poets, painters, and men of partial genius.

Morbid excitement of the cerebral organs, from the stimulus of *external* objects or relations, is still more common. Whatever rouses deep emotion, or excites intense and continuous thinking, produces the same kind of excessive and irregular action as the above. Wealth and mercantile speculations are objects which stand in this relation to many of the feelings, and which stir up intellect to devise means for their acquisition and success; and, keeping this in view, we can easily understand how loss of fortune, anxiety about the fate of speculations, &c., may excite derangement of the mental functions, by disturbing the healthy action of the brain; and we are not surprised to learn, that out of 164 patients, in ESQUIROL's private establishment, no fewer than 50 were merchants, being nearly double the highest number of any other profession, although the former are by no means so numerous a class as in England.

The same principles explain why insanity may arise sometimes from *deprivation*, and sometimes from sudden *presentment* of an object about which the mind is deeply interested. PINEL alludes to a family of three brothers, in whom the domestic affections were very powerful. Two of them were marched off as conscripts, and the one soon after killed at the side of the other. The latter remained fixed to the spot like a statue; and, taken home in this condition, the impression made on the third brother was so powerful that he also became insane. Here the violent action produced in the organs by the sudden deprivation of their object evidently gave rise to a morbid affection of the brain, and to the insanity of both. But

suppose, as an example of the other case, a most devoted mother to have received intelligence of the death of a beloved son — to have regretted him long and deeply, but to have recovered some composure of mind — and that, in this state, he should suddenly present himself before her in health and in strength. It is easy to conceive this new excitement although highly pleasurable, coming forcibly and unexpectedly upon organs weakened by previous excessive action, rousing them to the uttermost, and leading to positive disease and confirmed insanity. Such cases are rare, but they have occurred, and persons have been known to die even from excess of joy: a fact explicable only on the principle of excessive action being thereby produced in the material organ of mind.

In glancing over the list of organs described in the phrenological works as having ascertained functions, the reader will be struck with observing, that we are very little acquainted with the morbid alterations in the structure of any of them except those of the external senses, and he will not fail to perceive a very adequate reason. *The organs of the external senses have been long known, and whenever the function of any of them was disordered, the patient and his physician agreed in at once inquiring into the organic cause, satisfied that the function of sight, of smell, of taste, or of hearing, could never be deranged, unless the particular organ with which it was connected was diseased.* The whole attention of the physician was therefore devoted to the discovery of the nature of the local ailment, and of the means by which it might be removed. But the organs of the internal faculties, both of intellect and feeling, were unknown till revealed by Phrenology, and are still known only to a few; and, therefore, when these were deranged, the organic cause was more frequently lost sight of, and a system of treatment, calculated to meet an imaginary disease, was adopted. And as every physician had thus full scope for the exercise of his own ingenuity, without being restrained by observation, each formed a theory of his own; and confusion and contradiction were the almost inevitable consequences.

Now, however, a more sure and rapid advance may be expected.

In the outset of the present inquiry, I took much pains to impress upon the reader the great influence of organic size upon energy of function, and the proneness to unusual activity, and consequent liability to diseased excitement, which disproportionate size gives to every organ. In perfect accordance with this view, it will at once occur to every one who has had any experience of insanity, that its most prolific and powerful *functional* causes are to be found in *over-excitement* of those faculties and organs which are distinguished by their general predominance in power and size over the rest; and that it is comparatively rare to see it arise from over-action in any of the smaller organs, such as many of those of the purely intellectual faculties. The truth of this remark will be made apparent as we proceed.

If we attend to the already established facts, that energy of function is greatly influenced by organic size, and that the largest organs are the most active and craving for exercise, and therefore the most prone to morbid excitement, we shall be quite prepared to find, in the next stage of the inquiry, that the functional causes which address themselves to those mental faculties of which we possess the organs in highest endowment, are the most powerful and frequent in inducing insanity. On looking at the brain, we perceive that the convolutions of the posterior, and basilar portion of the middle, lobes, appropriated to the manifestations of the animal propensities, are larger than those of the coronal region, serving to manifest the moral sentiments; and that the latter are larger than those of the anterior lobe, which subserve the intellectual powers. And in exact accordance with this, we find that there are more lunatics from disappointed love, wounded affections, harshness, pride, fear, and other propensities, than from outraged and excited Conscientiousness or Veneration; and more from these than from purely intellectual causes. For the same reason, too, we find that functional causes of a specific kind produce derangement

more readily in a person who possesses the organ and faculty to which they refer, in large endowment and great vigor, than in one who has them weak, and in whom consequently they have little means of making any impression.

We can easily conceive, for instance, that a person with a large endowment of Cautiousness, and great natural timidity as its accompaniment, will be more easily affected, and more likely to be rendered insane, by sudden danger and unusual occurrences, such as loud thunder and vivid flashes of lightning, than another person with a small organ and little timidity of character; because the great energy of the sentiment of fear in the former exposes him to much higher functional excitement than the latter, from causes of equal strength; and functional irritation can never take place without a corresponding morbid change in the organs. In this way, it is obvious that moral causes will act very differently on different individuals. The loss of friends may induce derangement in a person possessed of a strong feeling of attachment from large Adhesiveness; while it may not disturb the happiness of another, who is deficient in that faculty, although he may be the greater sufferer, in a worldly point of view. In like manner, disappointed ambition, or fallen fortunes, may upset reason in an individual characterized by predominant Self-esteem and Love of Approbation, and produce comparatively little effect on another who is deficient in these qualities.

The relation which I have pointed out as existing between size of organ, energy of function, and the power of external causes to stir up disease, by excitement of the predominant organs, carries us still a step farther, and shows, in harmony with the principle already illustrated by the Dublin cases, that the derangement generally begins in, and frequently continues confined to, the cerebral organs which preponderate in development over the rest, although it may either interest other parts from the first, or gradually communicate to them, and involve their functions as the disease advances. In about three-fourths of the cases examined by Mr. Combe, in the Richmond

Lunatic Asylum, the characteristic symptoms of the insanity consisted of aberrations of function of the predominant organs; and as the latter differed in each patient, hence arose a corresponding diversity of mental symptoms. In many instances the morbid action gradually extends itself, and implicates sometimes a few organs, and sometimes the whole brain, giving rise to a complication of symptoms proportioned to its extent; but, even then, the morbid activity is generally greatest in the largest organs, and consequently its most prominent mental features continue to be those indicative of disturbance of the functions which these organs perform.

If Phrenology were already taught and received as established science, it would be a work of supererogation to lay before the reader examples illustrative of the relation existing between every moral or functional cause, and some one or more of the mental faculties, the organs of which are considered by phrenologists as ascertained; because it would then be sufficient to state, that every functional cause deranged the healthy action first of its own organ, and subsequently of other parts of the brain. But we are very far from this point; and therefore it becomes necessary, for the sake of clearness to quote a few instances, to show that excitement of the particular phrenological functions does tend to derangement, and that the character of the latter, when produced, bears a distinct relation to the function performed by the organ or organs thus deranged. I shall follow this course less reluctantly, because, as all the mental phenomena which characterize insanity are merely aberrations in action of the mental faculties, we shall derive advantage from it when we come to treat of the symptomatology; and I have only to add, that as no cerebral organ or mental faculty can act long singly, either in health or in disease, the cases which follow are not offered as examples of pure affections of individual organs and faculties, but as instances in which one is more directly and strongly affected than the rest.

The cerebellum, or organ of Amativeness, is perhaps the

largest of all, and the frequency of disease and of insanity from abuse of its functions is known to every one; but madness from this cause is observed to occur chiefly, according to the principle already explained, in persons remarkable for high development and great energy of function of the cerebellum. Even M. SERRES, physician to the Hôpital de la Pitié, at Paris, whose hostility to Phrenology is scarcely less known than his anatomical researches, felt himself compelled to advance undeniable proofs of these positions. Eight years ago, in MAGENDIE's Journal de Physiologie, he published a number of cases of cerebellar apoplexy, which had come under his notice in the hospital, and which were valuable as having almost all occurred in persons abandoned, either by profession or inclination, to the greatest venereal excesses, and as having so regularly presented, on dissection, organic disease of the cerebellum, that SERRES, on observing the external evidence of high functional disorder, as manifested in continual erections, and involuntary emissions, ventured at last to predicate the existence of the cerebellar affection, and scarcely ever erred.

The first case which occurred to him was a man who had been found on the quay in company with some abandoned women, with whom he had passed the night, and one of whom declared that it was in the very act of coition that he had fallen into the state in which he then appeared. On dissection, the brain was found to be perfectly healthy, but the hemispheres of the cerebellum were highly inflamed, and the middle portion or vermicular process still more so, both presenting marks of great irritation; and in the substance of the cerebellum several small cysts were found.

The next case was that of *Thomas Marie-Anne*, a man of fifty-five years of age, of a sanguine temperament, and also strongly addicted to venereal excesses. In every respect he presented the same external signs, and the cerebellum showed strong traces of inflammatory action. But as the connexion between the cause, the disease, and the symptoms, is here abundantly manifest, and as the other cases are so nearly alike, that their

detail would only be a repetition of the first, it is unnecessary to cite any more; and I therefore proceed to mention some instances of that kind of morbid cerebellar action, which is less acute in its nature, and which characterizes one of the forms of insanity.

A robust and plethoric young man came to reside at Vienna. From having no society there, he lived in a state of greater animal restraint than he was accustomed to, and soon fell into erotic mania, accompanied with continual erections, and an inflammatory swelling of the testicles. The latter affection was regarded and treated by his attendants as the cause, and, at the end of three weeks, when Dr. GALL was called in, he was no better. GALL, perceiving symptoms of cerebellar inflammation, which he believed to be the true cause of all the phenomena, pointed them out to the notice of his colleagues; and by the application of leeches to the neck, and other means calculated to reduce the inflammation, the young man recovered perfectly in a few days.

*Nymphomania* is another name for cerebellar disease, attended by functional excitement, but which is often erroneously supposed to have its seat in the uterus, or external organs, As illustrative of the origin of this affection, Dr. GALL mentions 'a very intelligent lady who was tormented from infancy with inordinate desires. The excellent education which she received alone saved her from the rash indulgences to which her temperament so violently urged her. Arrived at maturity, she gave herself up to the gratification of her desires, but they only increased in intensity. She saw herself frequently on the verge of madness, and, reduced to despair, left her house, and the city, and took refuge with her mother in a secluded situation in the country, where the absence of objects, the greater severity of manners, and the culture of a garden, prevented the explosion of disease. After having returned to town for some time, she was threatened with a relapse, and again took refuge with her mother. At her return to Paris, she came to me, and complained like a woman in perfect despair. 'Every

where," she exclaimed, "I see nothing but the most salacious images; the demon of luxury pursues me every where, at table, and even in sleep. I am an object of disgust to myself, and feel that I can no longer escape either madness or death *." '

Such is a picture of the deplorable state to which irritation of the cerebellum conducts its unhappy victim. In this instance, Dr. GALL pointed out the cause to the patient, drew her attention to the enormous development of the organ; and advised her to return to the country, avoid all excitement, and apply leeches to the back of the head, as the only means of saving her. He adds, that, in all the patients whom he had occasion to examine, either in private or in hospitals, the cerebellum was inordinately large; and that the same condition existed in those who, attacked with general mania, were much addicted to onanism.

Sometimes, though rarely, the disease occurs where the organ and function are not in great endowment. As descriptive of this state, PINEL remarks, 'I have seen females, the most remarkable for the purity of their manners, experience, during an attack of mania, this unhappy approximation to women of abandoned character, and regain, on their convalescence, their primitive character of reserve and extreme propriety.' †

It is unnecessary to multiply examples, as they abound in medical authors; but Dr. GALL makes a remark in reference to them, which is of great importance. 'We perceive by these examples,' he observes, 'that those who have an unusually developed cerebellum have a natural disposition to erotic mania; but these examples show, at the same time, that extreme activity of that organ does not produce disease, — *except where those, in whom the tendency exists give themselves up to the pleasures of physical love;* so true is it, that frequent indulgence is *not* a remedy against this kind of mania.' (Lib.

* GALL sur les Fonctions du Cerveau, tome iii. p. 319.

† PINEL, de l'Alienation Mentale, (2d edit.) p. 67.

cit. p. 322.) In another page, after noticing the common opinion, that continence is often the exciting cause, he remarks, 'Familiarized with human weaknesses, I am more disposed to attribute erotic mania to excesses, than to too great continence. These excesses produce such an irritability and excitability of the cerebellum, that it is no longer in the power of the individual to stop the torrent of salacious ideas and voluptuous images which pour in upon him.' (p. 330.) These statements agree entirely with what I have shown to be the physiological effects of active exercise in all the organs of the body, and deserve the most serious attention of the physician.

Abuse of the cerebellar functions, when excessive and continued, terminates ultimately in weakness of mind and body, if not in absolute idiocy. And the same remark applies to indulgence in secret vice, which Dr. GALL shows to be a more frequent cause of silliness and mental inaptitude in early life, than is commonly imagined. He gives a case of a child of only three years of age, whose constitution was utterly ruined by this cause, and I know a similar example in a boy of six. In both the cerebellum was very large. The means which Phrenology affords of detecting and guarding against the danger to which such individuals are exposed, will one day be duly appreciated, and form one of its strongest recommendations. But I must leave this subject, and refer the reader to the instructive pages of Dr. GALL for further information.

Strong excitement of *Philoprogenitiveness*, is as frequent a cause of insanity as its organ is remarkable for size, particularly in females. Dr. GALL met with a curious instance of it in the great hospital of Vienna, apparently from excess of organic endowment. The patient conceived herself pregnant with six children, and, as Dr. GALL expected a corresponding predominance of development in the posterior lobe where the organ is situated, he was anxious to get possession of the skull after the woman's death. It was accordingly sent to him by the physicians, and the organ was found to be enormously large, so much so, that the celebrated German physiologist RUDOLPHI

tried to account for its size by some supposed pressure, unwilling as he was to allow it to be a production of nature. At Paris, Dr. Gall was also consulted about a young lady, of the most modest and amiable character, who accompanied some friends to Vienna, and, on her arrival there, went about joyfully announcing that she was pregnant, which, contrasted with her natural character, formed the only, but palpable, sign of her insanity. She soon afterwards became desponding, anxious, and unhappy, at the disappointment of her hopes, and ultimately died consumptive. In her the organ of Philoprogenitiveness had always been in a state of activity proportioned to its enormous development, and hence that activity unsatisfied was easily converted into disease.

It occasionally happens, that the relation between the over-excitement of the faculty and that of the organ is rendered still more obvious by local pain. I attended, some time ago, the mother of a family in a state of delirium, characterized by intense anxiety and alarm about the supposed murder of her children, and who, on being asked, after her recovery, what her sensations were during the paroxysm, applied her hand to the region of the organ of Philoprogenitiveness, and said, that she was conscious of nothing except severe pain in that part of the head. She was not acquainted with Phrenology, and never had heard the subject mentioned by me, so that her statement was perfectly unbiassed.

Dr. Burrows refers to an instance mentioned by Turnbull, in which a native of one of the South Sea Islands, 'having had a child taken from her to make a sacrifice to a barbarous idol, went mad; and, in consequence, becoming very troublesome, her countrymen killed her.'* An occurrence of this kind among a savage people, shows how powerfully the brain may be irritated through the medium of the organ by which this feeling is manifested; and there can be little doubt that puerperal madness is sometimes partly to be ascribed to the same cause, operating upon a very exciteable state of the nervous system.

* Burrows' Commentaries, p. 22.

The organ of *Adhesiveness* is another of very considerable size, irritation of which is consequently a frequent cause of insanity. It seems to me, indeed, that a large proportion of the cases which are said to arise from disappointed love, are ascribable to derangement of the function of Adhesiveness. The activity of this feeling gives a warmth of attachment, that can be satisfied only by the warmest return; and, if it is glowing on one side, and not on the other, the effect, especially when the influence of Amativeness is combined with it, is to create an indescribable craving or unsatisfied state in the faculty, which is soon followed by ennui, disgust, low spirits, a desire of solitude, and ultimately complete derangement of mind. In this case, Amativeness adds to the flame; but without the attachment, Amativeness would not interest itself in any particular object. Females are especially subject to cerebral disease from this cause; and, according to the constitution and hereditary qualities of the patient, it takes the forms of common nervous disease, of epilepsy, of derangement, &c. or sometimes causes inflammation. That females should be most subject to insanity from this cause, was to be expected, from the stronger feelings of attachment and larger development of Adhesiveness in them, combined with the fewer sources of relief, and the impossibility of their taking any active steps to secure the possession of the object of their choice. In the middle ranks, obstacles to a desired or projected union are a frequent cause of insanity in the female; and these apply directly to the function of Adhesiveness and Amativeness, but often much more to the former than to the latter, as the following example will show: — A young work girl fell desperately in love with a man whom she saw often passing before the window, and without having ever spoken to him. The image of the loved object alone occupied her thoughts during her alienation, and she manifested *so great an antipathy for other men*, that she struck such of her fellow-patients as were robust and masculine, alleging that they were men in disguise.* That

* Pinel, p. 37.

the bond of union here was Adhesiveness much more than Amativeness, is demonstrated by her antipathy for other men; and it is, moreover, borne out by the very next case given by the same author, of a young girl on the point of marriage, who felt so much outraged by the proposed anticipation of the ceremony, that her vexation soon passed into mania, and extinguished her reason. Had Amativeness been the predominantly active feeling in either of these girls, most assuredly such results would never have occurred.

Separation from friends and country is a prolific cause of cerebral disease in certain constitutions, and the pain thence arising is simply an unsatisfied craving of an active but objectless Adhesiveness. This affection is so common, that one form of it has received the name of Nostalgia, or home-sickness, which is well known to be not only a serious, but often a fatal disease. Baron Larrey, who saw much of it in France among the young conscripts suddenly carried away from their homes and friends, gives many interesting cases, both of treatment and of dissection, proving the existence of a cerebral affection as the source of the mental symptoms, and as itself produced by lacerated attachment. Dr. Perfect also gives, in his Annals of Insanity, a striking instance of the same result in a lady, aged thirty, who was plunged into the depth of despair by the death of one of her friends. She passed days and nights without uttering a word, and alternately shed a torrent of tears, and gave way to the most piercing shrieks. Her face was pale and swelled; her air depressed; she could scarcely articulate a few words, and at last became deranged.

Domestic dissensions are a frequent functional cause of cerebral disease in those whose social affections are strong, and in whom, consequently, the organ of Adhesiveness is large. When the desire of attachment is thus powerful, and from the contentious dispositions of the other members of the family, it is at the same time deprived of grateful enjoyment, insanity is often induced. I recollect seeing an interesting case of this description in Bedlam, along with Dr. Spurzheim. The pa-

tient was a young man of fine dispositions, good intellect, and prepossessing appearance. Dr. SPURZHEIM expressed his surprise that such a person should be in that place, and was told, on inquiry, that he had been long subject to bad treatment and abuse from his father, whom he notwithstanding loved and respected, but that at last his mind and brain had suffered so much, from the constant excitement caused by his father's reproaches and ill temper, that he had become insane, but was again recovering his health since separated from the cause. In this youth the organ of Attachment was much developed, and considerable pain in the same part had often been complained of.

PINEL relates a very curious case of derangement from an affection of Adhesiveness, and which is doubly interesting, phrenologically, as showing how intense excitement of that organ gives rise to excitement of those contiguous to it. A lady, of rather a melancholy character, on the death of her father, rolled herself on the ground, *tore her hair, and uttered imprecations against universal nature, and, in her despair, sighed for the* UTTER DESTRUCTION OF THE HUMAN RACE. Is it not from the contiguity of the organs of Adhesiveness and Combativeness and Destructiveness, that domestic dissensions are generally the most bitter and irreconcilable of any ?

Adhesiveness and Philoprogenitiveness are both so essential elements of our social feelings, that they often act together ; and perhaps, the following example from PINEL shows as marked a case as any of excitement of these organs being carried beyond the limits of health. A lady, soon after her delivery, heard the tocsin sound. It was during the first year of the Revolution, and immediately she became troubled and restless, and fell into the most sombre delirium. She fancied herself surrounded by scaffolds, and uttered the most lamentable cries. *She insisted every instant* on seeing her children and her near relations, whom she feared to be destined for the steel of the assassin, or for the most dreadful punishments. Scarcely would she trust her eyes when she saw them, and it was only when they were present that she could feel assured of their existence.

The organs of *Combativeness* and *Destructiveness* are among the largest in the brain, and the unrestrained gratification of their cravings is a frequent functional cause of mental derangement. Bursts of passion and irascibility of temper (says PINEL), are often the preludes of insanity, and strongly favor its invasion; and, where the habit is indulged (or, in phrenological terms, where the over-activity of the organs is uncontrolled), it often terminates, especially in the melancholie, in furious delirium, in stupor, or in imbecility. A lively woman, every way respectable for her domestic virtues, long gave way to bursts of anger on the most trivial occasions. The slightest delay, or the least fault in her servants or children, was sure to give rise to some stormy scene; but the unhappy propensity (adds PINEL) had its end, for it terminated in the complete subversion of reason: it produced this effect only by constant excitement of these mental functions, inducing irritation of the corresponding cerebral organs.

Another illustration is a case from the same author, of an only son, who, brought up under the eyes of a weak and indulgent mother, soon acquired the habit of giving way to every caprice, and to all the violence of a hasty and ill-regulated temper. The impetuosity of his passions, augmented by the progress of years, and the money with which he was was provided, appeared to remove every obstacle to the supremacy of his will. If any one resisted him, his temper became fierce. He attacked him with audacity, and sought to reign by force, and thus lived continually amid quarrels and riots. If any animal, — a horse, a dog, or a sheep, — offended him, he put it instantly to death; and, when engaged at any party or ball, he was sure to quarrel, and to leave it stained with blood, and yet, when calm, he displayed great good sense and true benevolence. Wounds, processes, and fines, had been the only results of his inclination to quarrel, till at last justice seized upon him for throwing a woman, who had provoked him, into a well. He was then condemned for life in the Bicêtre. A more striking instance of disease, induced by over-excitement of Combativeness and Destructiveness, could not be desired.

Most justly has La Bruyere said, that 'there are strange parents, whose whole life seems to be spent in preparing for their children reasons of consolation for their death;' and most justly has Pinel added, — 'The public houses of correction, and the asylums for the insane, are constantly furnishing examples proper to serve as commentaries on this text. How often do we see *bitter reproaches* for the slightest faults, — *harsh words uttered in the voice of anger*, — nay, *even threats and blows*, — exasperate a hasty youth, break through all the ties of blood, *produce the most perverse dispositions, or precipitate the sufferer into decided madness!*' * Every phrenologist knows that reproaches, contradiction, and harshness, are the strongest stimulants that can be addressed to Combativeness, Self-Esteem, and Destructiveness; and he finds no difficulty in explaining how these lead to actual disease. Falret gives a case of a fine, spirited, and lively boy, of eleven years of age, who was so deeply affected by the unmerited severity of his teacher, that he resisted him in everything, became sad and sleepless, resolved to starve himself to death, and then made several attempts to drown himself; and who, at the age of thirty, still remains so susceptible, that, on the slightest contradiction, he is beset with *tædium vitæ*, to which an enlightened religion alone prevents him from giving way. I am acquainted with a similar case, which took place in Edinburgh, and in which the boy (aged fourteen years) succeeded in putting a period to his days, on the occasion of a harsh and unjust reprimand from his elder brother. In this boy the organs of Self-esteem and Destructiveness were found to be very large.

Inordinate excitement of *Love of Approbation*, which is remarkable for its great relative size, is very frequently a functional cause of derangement, particularly where ambition, and the desire of distinction, are naturally strong ingredients in character, and where they are powerfully stimulated by external motives. Under the impulse of the *most exaggerated*

* Pinel, p. 18.

*vanity*, says PINEL, which made him *anticipate for himself a most splendid career*, a young man, of handsome fortune, studied successively natural philosophy, chemistry, and the fine arts. To gratify this passion, he resolved to travel in unknown regions, and to announce himself to the world by the history of his discoveries, published with superb plates, and in a style of sumptuous elegance. He took artists along with him; and, to keep his brain awake night and day, he drank freely the strongest coffee. Every now and then he shut himself up for days in a heated room to arrange his notes, and, fearing his inability to sustain the effect, he had recourse to spirituous drinks. He then hurried through the country night and day, taking nothing but coffee and spirits; after which he lay in bed for a month, rising only to take a slight repast; and, last of all, in imitation of some other great men, he resolved to do without sleep, and in a short time more became furiously insane. Here, without the constant spur of over-excited Love of Approbation, no such results would have followed, although other causes were in operation. Among women who, generally speaking, possess the organ in greater endowment than men, this faculty is a frequent cause as well as feature of mental alienation.

Irritation of *Self-Esteem*, the organ of which is considerable in size, is also so common a functional cause of cerebral disease and insanity, that one can rarely visit an asylum of any extent, without meeting with several patients, whose derangement has been induced by disappointed pride, jealousy, or some selfish passion springing out of, and disagreeably acting upon, Self-Esteem. This remark is made by PINEL, who, after stating that it is common to find mental alienation joined with a presumptuous tone, and the false majesty of pride, adds, — 'This same vice, carried to a high degree in youth, and as it were *inherent to the constitution, may also gradually increase, become exalted*, and *become the cause of a real mania*.'*

Dr. PERFECT takes notice of the same thing, and speaks of a man who was remarkable for his arrogance and spirit of

* PINEL, p. 36.

domination, (or, in other words, who had a very large and active *Self-Esteem*,) and who met with reverses in business, which increased his misanthropy, and so affected his sense of pride, that he became insane. In this state he drew bills on his banker for exorbitant sums, as well as on other houses to which he was a stranger, and, in his confinement, he showed the same intense pride, and gave his orders with the tone of an Asiatic despot, and ended by conceiving himself Chancellor of England, Duke of Batavia, and a powerful monarch. In July, last year, I saw, under the care of Dr. RAMSAY, the able physician of the Dundee Asylum, a gentleman, in whom Self-Esteem was also in a state of morbid activity, and whose head presented a distinct prominence in the region of its organ, such as to have attracted the patient's own notice. His whole discourse was magniloquent. His business was most extensive; he turned over thousands of pounds every week, and his connexions were among the great. He spouted a splendid poetical address to George IV., which was full of grand and shining conceptions. Some notion of the frequency of this variety of mental affection may be formed, from the fact that PINEL had once *four* imaginary Louis XVI. under his care at the same time.

Over-stimulated *Acquisitiveness* is not an uncommon functional cause of cerebral disease, particularly in a mercantile country like our own, where every one is pressing hard on the heels of another in the pursuit of gain, where changes of fortune are not less sudden in occurrence than extreme in amount, and where, consequently, those who are remarkable for devotedness to selfish objects, live in a state of continual anxiety. Gambling, and rash mercantile speculations, when systematically indulged in, tend to the same result, by the intense excitement to which they give rise in the same cerebral organ. The keen sharp features, rapid eye, and general attitude of the gamester intent upon his play, betoken a degree of violent activity of the selfish feelings which borders closely on disease.

Sudden changes of fortune, whether good or bad, are known to excite cerebral disease and insanity, by stimulating too

powerfully some of the mental organs, particularly those of Self-Esteem and Acquisitiveness. It was remarked at the English Revolution, that of the men who suddenly acquired rank and wealth, many were unable to withstand the excitement thereby given to the above faculties, and consequently became insane. In individuals who thus become the victims of good fortune, there is almost always a want of balance in the development of the mental organs, and the character is marked by a corresponding disproportion in the qualities which they serve to manifest. A man of a lively disposition, mentioned by an author already quoted, was unexpectedly left a very large inheritance. From the excitement thus given to Self-Esteem, and the corresponding exaltation of its functions, he immediately fancied himself called upon to play a conspicuous part in society, increased his establishment, and gave himself up to building schemes in the country. He could then think of nothing but his domains; his sleep became disturbed; he rose out of bed to walk through the fields; and enjoy the intoxicating delight of looking at his new possessions, and, in a few months, he was brought to Paris in a state of furious mania. What is this but excessive excitement of the functions of Self-Esteem and Acquisitiveness, irritating the brain into involuntary or morbid activity, just as excessive light irritates the eye into a similar state?

It is, in fact, this gradual conversion of healthy action into diseased and ungovernable activity, that explains the change so frequently observed in the mind, both of the gamester and of the mercantile speculator, long before absolute insanity occurs. In the outset, before the organization has suffered, all the powers of the mind are healthy, efficient, and under control, and a certain degree of prudence, foresight, and arrangement, is manifest in every venture. After a time, however, whether of success or of mishap, the organs of Acquisitiveness, Self-Esteem, &c. from excessive stimulus, become permanently and uncontrollably excited, and assume the mastery. The suggestions of the other faculties become propor-

tionally feeble, and are not listened to; the shortest, though most dangerous road, to the point desired, is alone looked at, and speculations are entered upon with a rashness, and defiance of sense and obstacles, which astonish those who are unacquainted with the cause, and which, in the beginning of his career, would have astonished the individual himself. Either chance is his friend, and everything prospers; or blow follows blow, till he is bent to the earth. In the former case, his ill-regulated mind cannot bear the elevation of prosperity; the organs of Self-Esteem, Love of Approbation, and Hope, continuing inordinately active, give rise to dreams of greatness and ambition, which make their possessor mad in the notion of his being a prince or a potentate; and, in the other case, his misfortunes strike so hardly upon his already over-active Cautiousness, and degraded and disappointed Self-Esteem and Love of Approbation, that these give rise to despair, and he sinks into hopeless melancholy or suicide. The mercantile annals of England are full of such examples, and every change in her fortunes, whether to prosperity or to adversity, sends its devoted and unhappy victims to the cells of the mad-house, from one or other of these causes.

Among the functional causes of cerebral disease and mental derangement, the over-activity of *Cautiousness* — an organ second in size to none — stands pre-eminent. Under the present selfish system of society, there is perhaps no faculty which is called so often, so powerfully, and so permanently into action; and the natural result is, that none is so frequently the source of nervous disease. In times of public distress, the victims whose health it destroys, whom it deprives of reason, and throws into the cells of an asylum, are incalculably numerous. Timidity, apprehension, fear, despondency, and despair, are the different degrees of intensity of the same feeling of Cautiousness, gradually roused to a higher and higher degree, till the health of the cerebral organ at last gives way, and the most sombre melancholy ensues. The wide prevalence of hypochondriacal affections, which embitter existence by the

gloomy depression to which they give rise, and which I have elsewhere shown to have for a common feature a morbidly active Cautiousness, is another and a very convincing proof of the influence of excitement of function in inducing cerebral disease. In the greater number of such cases, it is easy to trace their origin to real or fictitious causes of anxiety about the health of friends, the success or failure of schemes of advancement, the fluctuations of trade, and many other grounds, — all directly addressed to the faculty of Cautiousness. One of the most severe cases I ever saw, was brought on by combined anxiety about the health of a valued relative, and fear about the success of business. The cerebral excitement thence resulting indicated itself by unequivocal signs, — determination of blood to the head, sleeplessness by night, restlessness by day, epistaxis, and apoplexy. For a time the misery and wretchedness were so overpowering, that the idea of suicide often presented itself as a means of relief, but was fortunately resisted. In another case, anxiety about the doubtful recovery of a beloved wife acted so powerfully in exciting Cautiousness to diseased activity, as first to change the natural character, and then to induce suicide.

The effect of *fear*, or sudden and violent excitement of Cautiousness, in producing mental derangement and all sorts of nervous disease, is well known. I have already quoted an instance from Boerhaave, in which a fright from thunder rendered a lady insane; and also alluded to a girl whom I saw in the Hôtel Dieu, at Paris, attacked with chorea, from being frightened by a soldier with his drawn sword. Pinel remarks, that horror, fear, and despair, although not synonymous, have yet a striking analogy in their expression. This arises from all of them having a direct relation to the faculty of Cautiousness; and it is in consequence of this relation that all of them are functional causes of insanity. Within a very short time, Pinel received three young women into the hospital, one deranged from seeing a ghost clothed in white, by which some young men wished to frighten her; the second, from a tremendous

clap of thunder, which terrified her exceedingly; and the third, from horror at finding herself in a house of ill fame, into which she had been unconsciously decoyed. In the two first, and partly in the third also, the disease was evidently induced by the organ of Cautiousness roused to an inordinate degree, inducing general disordered action in the brain. The story of the parrot, which was driven mad by the noise of the great guns during a naval action, and ever afterwards could emit no sound except one imitative of the report of a cannon, is an instance of similar functional excitement.

The immutability of the passion of fear, amid the succession and variety of objects to which it is directed, and the amount of its influence on the nervous system, are well illustrated by Dr. Voisin. In olden times, when ghosts, witches, and demons, were in favor with the public, they were the common objects of excited Cautiousness; but of late years, since the existence of such beings has been generally doubted, and the *Police* has been very active,* the latter has usurped the place of the former, and become the grand object of terror to the timid, the nervous, and the insane. And, therefore, although in lunatic establishments the demoniacs are now replaced by patients who fear the police, the prison and the scaffold, '*it is always pusillanimity, anxiety, and fear*, that act upon these unhappy beings, just as formerly it was the same feelings that were the causes of the maladies of the possessed. Such a one is now in the Petites Maisons, because he fears the police, who would have been burnt formerly for fearing the devil.'†

The over-activity of the organ of *Secretiveness* is as frequent a functional cause of cerebral disease and of insanity as its organ is known to be relatively large. There are characters who are prone to suspicion, to mystery, and to duplicity, and who can never believe that honesty and fairness are any thing else than baits laid out to entrap the unwary. Such persons do

* Dr. Voisin speaks here of the French political police, then at a high degree of perfection.

† Voisin, Des Causes, &c. p. 32.

everything in an underhand way; and, as they imagine every body to act under the same motives as themselves, they are constantly on the watch to detect plots and devices which in reality do not exist. If adversity besets them for a time, the natural suspiciousness of character is exalted and sharpened to excessive activity, till their best friends become as much the objects of suspicion as their known enemies. Every trifling circumstance is then converted into a confirmation of their apprehensions, and the mind is kept constantly on the stretch to hide its own purposes, and to fathom the secret devices of others, till its organization is injured, and cerebral disease is the result. I have seen several cases of this kind, but never one where the organ of Secretiveness was moderate in size. In all it was in excess, and the fact may be easily verified in every asylum. It may happen, indeed, that the weak organ may be also excited by disease; but this will be very rarely observed, because the combination of causes required to effect this will be very rarely found to exist.

The functional activity of Secretiveness here described as a cause of mental derangement, as the result of induced cerebral disease, must not be confounded with that of Cautiousness, from which it is essentially different. Excited Cautiousness gives rise to timidity, fear, and alarm, but it never *suspects* deceit or counterfeits, unless Secretiveness be also in action. Fear with cunning acts very differently from fear without cunning; and cunning is the true result of an ill-regulated Secretiveness. A lunatic acting under a predominant and energetic Secretiveness is the most unsafe and troublesome, because the least sincere and most deceitful of all patients; while one acting under excited Cautiousness is infinitely less annoying, and infinitely more safe. He is open, and proclaims his fears.

In the examples already given of disease and mental derangement, arising from over-activity of the propensities, we have little difficulty in pointing to the particular faculty most directly acted upon, and disordering the rest; but, for various reasons, the detail of which is foreign to our present purpose,

we seldom meet with affections of single organs among those of the moral sentiments of an equally insolated description; and, therefore, in selecting a few cases, in which highly excited moral emotions have given rise to cerebral disease, I offer them to the notice of the reader, not as examples of such isolated affections, but merely as illustrative of the fact, that excessive action in the organs of the Moral Sentiments, indicated by great excitement of the corresponding feelings, is an efficient *functional* cause of cerebral disease and its consequence — mental derangement.

Religious fanaticism, or excessive and ill-directed activity of Veneration, and some other sentiments, has long been regarded as a most fruitful source of insanity, and is a pure specimen of a functional cause. It was so frequent at a former time in France, that, out of many cases in regard to the causes of which PINEL could procure information, nearly one-fourth arose from religious enthusiasm carried to excess. But, in these instances, it almost invariably happened that some one or more of the lower propensities had been in a state of active alliance with misdirected devotion, and brought about a conflict in the mind, which the organization could not withstand.

It is quite certain, for instance, that every new sect which appears, inflicts mental derangement upon numbers of its votaries; and the more violent, startling, and extraordinary the doctrines enforced, and the wider the difference between them and those previously entertained, the more extensively will nervous disease and insanity follow; for, in the same proportion will their extravagances be calculated to interest the greater number of powerful faculties, exalt the healthy action of the brain, and excite it to disease; and, accordingly, in speaking of the form of mental derangement generally arising from this cause, under the name of *devout melancholy*, 'There are,' says an author, whose writings are remarkable for sagacity and accuracy of observation, 'few practitioners who have not had opportunities of seeing some shocking instances of this disease. The greatness and excellence of the object, and the satisfaction

the soul experiences in giving itself up to the contemplation of the Almighty, excite too lively a sensation, and *produce in the brain a tension too violent and too continual to be supported* for a long time without injury; it soon throws the mind into fanatical madness, and exhausts the body. I have seen the most amiable young persons, led away by an erroneous system, fade and fall away into decay, neglecting the duties of their calling, in order to give up their thoughts wholly to the Supreme Author of their being, who could not have been more properly glorified than by a strict attention to those duties.'*

The preceding is a sketch evidently drawn from nature, but an example or two will make its accuracy more striking, and its utility more evident to the reader. A lady of middle age, who had always been cheerful and regular in her devotions, went, during the winter, on a visit to a family — followers of Swedenborg. Being pressed, she went and heard their doctrines propounded, and for the first time began to doubt the truth of her own views. She returned to London in great disquietude of mind, and in this state accompanied her mother to church on Easter Sunday, and stopt to receive the Sacrament. But when the cup was presented to her, she was greatly disconcerted and confused, to perceive that not a single drop of wine remained for her. She hurried home in dismay, declared she was lost and rejected of God; and furious mania soon came on, of which she was afterwards cured.† In this patient, functional excitement of the organs of the religious sentiments was obviously the cause of the disease which overset reason. But a still more striking instance of over-excitement of Veneration, and the other religious feelings leading to cerebral disease and insanity, is the case of a young gentleman, educated, by his father's particular desire, in the strictest principles of religion, under the care of several divines in succession, each of whom, 'was enjoined to be very attentive to his religious instruction. Many of the *most abstruse doctrines*

* Tissot on the Diseases of Literary and Sedentary Persons, p. 68.

† Burrows' Commentaries, p. 40.

*of theology* were pressed upon him. His mind, consequently, became partially bewildered and enfeebled, and impressed with the most visionary images. At length, he conceived that his sole duty was to pray for a remission of his manifold sins, and to study the Bible and particular homilies. Accordingly, if he walked out when the devotional fit came upon him, he cared not in what puddle he knelt; or if at his meals, his food was quitted for prayer. Soon his spiritual extravagancies were so many, and, if interrupted, his violence so great, that he was pronounced insane,'* and removed to Dr. BURROWS' establishment, where he recovered, but afterwards relapsed, and died maniacal. Numerous other examples might be quoted, but it is altogether unnecessary, as unhappily they are so common that almost every one must have met with them even in private life. In a few cases, I have known pain in the region of the head, corresponding to the organ of Veneration, much complained of.

Besides this more simple kind of morbid excitement of Veneration, there are several varieties, in which the organs of Wonder, Hope, Conscientiousness, and Ideality, seem to be also implicated. Where Wonder is joined to Veneration, the attention of the patient is generally first strongly attracted by the more mysterious parts of our religious faith, and the whole powers of the mind are devoted to their contemplation or solution, till involuntary excitement be produced, which ends in the subversion of health and reason, and leaves the mind a prey to visions, and to the permanent belief and fear of every species of supernatural agency. When Hope and Veneration are the faculties to which the functional excitement extends, brilliant anticipations and confident expectations of a happy futurity mark the character. Under such a form of disease, a lady, mentioned by PINEL, evidently labored, who became insane in consequence of her husband's misfortunes, and who found delightful consolation first in long meditations and fervent prayer, and subsequently in ecstatic fits, during which

* BURROWS' Commentaries, p. 43.

she believed herself raised to the bosom of divinity, and which, from excessive cerebral activity, soon terminated in unequivocal insanity.

Conscientiousness and Veneration similarly affected, and joined to Cautiousness, give rise to that deplorable form of melancholy in which the patient is so overwhelmed by the sense of his guilt in the sight of God, that he cannot for a moment turn his mind to the hopes held out in the Gospel to the repentant sinner; but passes his days and nights in the deepest remorse, insensible to every other impression. Dr. PERFECT gives an instructive example of this kind in a man, naturally of a cheerful disposition and lively imagination, and moderate in his enjoyments. Some conversations which he had with a sombre and melancholy Methodist, made an entire change in his views. He renounced even the most innocent indulgences, gave himself up to solitude, and from that time regarded an eternity of suffering as his inevitable destiny. The injudicious discourse of his friend led him to conceive of the Supreme Being as cruel, revengeful, and delighting in the torment of his creatures. These notions led to sleeplessness, constant moaning, despair, and a tendency to suicide. But, in the course of some time, Dr. PERFECT, assisted by a clergyman of true piety and an enlightened mind, and by a proper moral and physical regimen, succeeded in restoring him to health and happiness.

Much alarm has unnecessarily been expressed by seriously disposed persons at the assertion that madness can ever be caused by indulgence of devotional or religious feelings, to whatever excess these may be carried; and no little obloquy has been thrown upon those observers whose experience has compelled them to state the fact. Even in France, where religion is certainly not cultivated with extreme ardor, public opinion on this subject was so strong some years ago, that PINEL, then the head physician of the largest Asylum in Europe, and the best acquainted with the facts and history of insanity, was so much afraid to brave its censures, that while,

on the one hand, he expressed his conviction that 'nothing is more common in hospitals than cases of alienation produced by too exalted devotion, by scruples carried to a destructive excess, or by religious terrors:' yet felt constrained, by public opinion, to '*suppress his daily notes, containing a mass of details of this kind*,' which had come under his observation, and to take his 'examples elsewhere than in his own country,' or, in other words from the works of English authors! Surely, religion rests on too firm a foundation to require such a sacrifice of truth and candor to supposed expediency and bigotry. And if, in any circumstances, the exercise of our devotional feelings even *seems* to bring on the loss of reason, it is surely not only allowable, but a *positive duty*, for the professional writer under whose cognizance these things occur, to investigate accurately, and state fearlessly, the conditions under which he has seen them happen, that others may be preserved in time from a similar affliction.

The situations in which chiefly the religious feelings become a cause of cerebral disease and of insanity are twofold. The first is when an individual combines a hereditary predisposition to madness, with an endowment of the devotional faculties naturally so preponderating that their activity constitutes the greatest source of pleasure; while the other sentiments and propensities are so moderately possessed, that in his gratification of the former, he is habitually prone to forget and omit those active duties towards society, his neighbors, his family, and himself, which, during his stay among the living, it is one great object of religion to direct and enforce. In such a case, experience has proved that any sudden religious excitement, listening for a season to a very gifted, but injudicious or eccentric preacher, or dwelling with deep interest on disputed doctrinal points, or, in short, any cause which shall keep the already predominant faculties, and their material organs, in unusual and intense activity for a length of time, will so far rouse the hereditary tendency into action, as to induce cerebral disease, attended with every symptom of mental aberration.

It is to such a mental constitution that PINEL's remarks are chiefly applicable, when he says, that 'too exalted piety, considered in a purely medical sense, may act with so much force on weak minds, as to derange the intellectual functions and the phenomena of life, and to render it necessary to have recourse to medical and moral treatment to restore the mind to its soundness: this is the direct result of the facts to be observed in the asylums consecrated to the treatment of madness.'*

If, then, it be TRUE that excessive activity and exclusive indulgence of the devotional feelings may induce cerebral disease and madness, particularly in susceptible subjects, instead of attempting to conceal the fact from a false fear of bringing religion into danger, we ought by every means to make it generally known, that the evil may be avoided by those who otherwise inadvertently fall into it. When fairly examined, indeed, the danger is seen to arise solely from *an abuse* of religion; and the best safeguard is found to consist in a right understanding of its principles, and submission to its precepts. For if the best Christian be he who in meekness, humility, and sincerity, places his trust in God, and seeks to fulfil all his commandments; then he who exhausts his soul in devotion and in prayer, and, at the same time, finds no leisure or no inclination for attending to the active duties of his station, and who so far from arriving at happiness or peace of mind here, becomes every day the further estranged from them, and finds himself at last involved in disease and despair, cannot be held as a follower of Christ, but must rather be regarded as the follower of a phantom assuming the aspect of religion. When insanity, then, attacks the latter, it is obviously not religion that is its cause; it is only the abuse of certain feelings, the regulated activity of which is essential to the right exercise of religion; and against which abuse, a sense of true religion would, in fact, have been the most powerful protection. And the great

* PINEL, Traité de l'Alienation Mentale, p. 41.

benefit to be derived from knowing this is, that whenever we shall meet with such a blind or misdirected excess of our best feelings, in a constitutionally nervous or hereditarily predisposed subject, instead of encouraging its exuberance, as at present we often do, by yielding it our respect and admiration, and even attempting to imitate its intensity, we shall use every effort to temper the excess, to inculcate sounder views, and to point out the inseparable connexion which the Creator has established between the true dictates of religion, and the practical duties of life, which it is part of his purpose in sending us here to fulfil, — a connexion, it may not be superfluous to add, which it is impossible to portray or enforce more strongly than is done in the lives both of the Founder of Christianity and of his disciples. Nowhere is it more clearly demonstrated that true religion is intended, in this life, to be the guide of conduct, and that it is not sent to supersede the active discharge of our social duties, or to encourage us to pour out our minds in mere emanations of feeling, without, at the same time, giving positive evidence, in the amelioration of our lives, that we have been really benefited by the contemplations in which we have been indulging.

When, again, the mind is perplexed by conflicting doctrines, the brain frequently becomes disordered, so far as to produce insanity ; and this is easily intelligible. The interests of religion exceed all others in weight and magnitude ; and it is therefore quite natural that a mind deeply imbued with a sense of their importance, and, at the same time, distracted by opposing tenets, and without a director in whom it can confide, should, in the attempt to reach the truth, and to reconcile all contradictions, become excited to an intense degree, giving rise to a corresponding overaction in its corporeal organ, which shall ultimately precipitate the latter into disease. The merchant or speculator will often pass sleepless nights and restless days, looking forward to impending loss ; and we consider it nothing unusual to learn that a man of keen passion has, in such circumstances, become deranged from excess of cerebral excite-

ment. But to any one who duly appreciates religious truth, the merchant's loss or the speculator's disappointment, will seem as nothing compared to its value. If, then, the lesser cause may so readily induce cerebral disease, is it not still more likely that the greater and more important may also overset health in a susceptible subject ?

Dr. Burrows has some excellent observations on this subject, when advocating the same views. 'I do not recollect,' he says, 'an instance of insanity implying a religious source in any person steadfast to his ancient opinions. Wherever it was suspected to emanate from such a cause, it was clearly to be traced to circumstances which had diverted the lunatic from the authority of primary principles, to the adoption of new tenets, which he had not comprehended, and therefore had misapplied. *The maniacal action appeared always to originate during the conflict in deciding between opposite doctrines, and the exacerbation arrived before conviction was determined ;*' page 39. I concur essentially in these remarks, and think that they deserve much attention ; but there is a period of life at which a less degree of doubt than is implied in Dr. Burrows' observation, frequently gives rise, not indeed to regular mania, or melancholia, but to a state resembling one or other in every respect, except that it is more obviously connected with constitutional disorder, is more tractable, and less liable to recur. I allude chiefly to females, particularly to those of a nervous, delicate temperament, about, and soon after, the age of puberty. I have seen some instances of religious despondency, approaching to despair, in such persons, characterized by great activity of the devotional feelings, and caused, not by doubts of the truth, but by fears for their eternal welfare. At that time of life, reason begins to come more vigorously into play, but the mind is as yet in possession of no fixed principles of judgment or of action ; every situation is new, and the strongest feeling is apt to assume a predominance of which reason disapproves, and hence internal dissatisfaction and melancholy : with this disposition, a strong expression accidently dropped, harsh

harsh denunciations expressed with vehemence and warmth, and eloquent appeals to particular feelings, especially if reiterated, will often sink deep into the mind, gain strength by being brooded over in solitude, produce a change of habits and of temper, and at last plunge the patient into melancholy. Cases of this kind are, I believe, more common than is generally supposed; for, as enough of self-control still remains to fit the patient for the ordinary intercourse of society, and the measures resorted to for the amendment of the general health almost always restore the mental vigor, they are comparatively little noticed out of the families in which they occur.

From what has been said, it will be sufficiently apparent that religion, when once understood, is rather a preventive than a cause of insanity; but that, during the period of doubt, the excitement its interest gives to our highest and best feelings may, where it is not moderated by reason, or directed by the prudent kindness of a parent or friend, prove too overpowering for the strength of the cerebral organs.

Before quitting this part of the subject, it may be observed, that periods of great excitement of the religious sentiments are exceedingly fruitful in the production of insanity, characterized by predominant activity of the religious feelings. 'In whatever nation,' says Dr. Burrows, 'religion is duly respected, and freedom of opinion and worship tolerated, although there will be found in the aggregate fewer lunatics, yet there will be the greatest number, whose malady, if not originating positively in religion, is complicated with religious impressions. In France, where it is too evident that the sense of religion is still very faint, except among old people, we have the authority of Esquirol that religious fanaticism, which formerly occasioned so much insanity, has almost ceased to have any influence. In more than 600 lunatics in La Saltpétrière, he discovered only eight; and in 337 admitted into his private asylum, he recognizes only one whose malady was supposed to arise from that cause!' I have already mentioned, that at an earlier period of French history, Pinel had ascertained no

less than 25 out of 113 cases to have arisen from religious enthusiasm carried to excess. Nothing can show more strongly than this the revolution that has taken place in the religious habits of the French people.

Pinel somewhere makes the remark, that in every country, and under every form of religion, fanaticism, or blind and misdirected zeal, is a frequent cause of loss of reason. And Mr. Madden, in his late Travels in Turkey, gives a curious confirmation of this, in so far as Mahomedanism is concerned. At the time of his visit to the lunatic asylum at Cairo, there were thirteen patients in confinement, and of these, three, or nearly one-fourth, are stated to have become insane through fanaticism. This, it may be observed, gives a larger proportion than we now find from religious causes in European countries under the Christian dispensation.

In inordinate activity of the strictly moral feelings, we discover occasionally exciting causes of cerebral disease and mental derangement. In commercial countries like our own, where so much depends on punctuality, *Conscientiousness*, naturally large, and over-excited by fear of being unable to meet engagements, often leads to cerebral disease, and to a form of insanity characterized by feelings of remorse for imaginary crimes, self-condemnation, and unworthiness. In these cases it is no doubt joined with other feelings, but the sting, or the characteristic quality of stern and unrelenting justice and self-accusation, is derived from it alone. A clerical gentleman, whom I often saw, accused himself of all the crimes ever laid to the charge of Napoleon Bonaparte, and considered himself the most depraved of human beings. Another passed many a miserable night in the apprehension of passing the evening of an honorably spent life in ignominious confinement in prison, from fancied inability to satisfy his creditors. In both of these gentlemen, the organ of Conscientiousness was largely developed, and its activity conspicuous when in health. Joined with Veneration, this sentiment, morbidly roused, leads to an unspeakable sense of guilt in the sight of God, — of guilt too

great even for Him to pardon, and then the darkest gloom overwhelms the soul.

Continued excitement of *Ideality* leads to that endless, vague, and unattainable search after perfection, and restless dissatisfaction with ordinary views and arrangements, which, in some highly nervous and predisposed constitutions, prove sufficient to originate insanity as the result of morbid action in the brain; particularly when it is joined to a great endowment of Self-Esteem, connecting self with all its schemes of aggrandizement and perfection. England is remarkable for the number of eccentric characters, distinguished by the predominance of these two qualities, which ultimately, on some unusual excitement, throw their possessors into decided madness, requiring confinement.

A curious example of morbid excitement of the organ of *Wonder*, will be found in the Phrenological Journal *, which is instructive, as illustrative both of the tendency to cerebral disease which a sudden transition from active life to retirement and idleness produces, and of the efficiency of functional causes to excite mental derangement. The patient, Dr. A., after several years service in the navy, was placed on half-pay, and retired to Cupar. In the course of his reading, when his spirits were depressed from disappointment and want of employment, he met with some articles on Animal Magnetism, which made a great impression on his mind. After pondering long on this subject, he first began to admit the existence of magnetism, and then imagined himself to be under its influence, an opinion which gradually acquired an ascendency over him, till it became so strong as to haunt him continually. His sleep became disturbed, and his mind filled with phantasms. He was convinced that his enemies exerted a malignant influence over him by means of magnetism, and tormented him in the shape of *invisibles*, against whom he complained to the authorities for protection. On all other subjects his judgment was sound, and his reasoning acute. After some years suffer-

* Vol. v. p. 585.

ing, he died suddenly from the bursting of an aortic aneurism. On opening the head, the skull-cap was very thick and hard, affording evidence of long-continued disease; and, over the organ of Wonder, was 'an inflammatory deposit, apparently of old standing, under the arachnoid coat, with thickening of the membrane itself, and adhesion to the parts beneath for about the space of an inch and a half in length, and one in breadth;' but the substance of the brain was not apparently altered. Dr. Scott, who reports the case, does not specify the organ of Wonder as the exact seat of the affection, because, from not being acquainted with Phrenology, he did not know it. But I had a letter from a gentleman who was present at the dissection, and who had studied the subject, stating explicitly, that the deposit had its seat *precisely under the organ of Wonder;* and adding, that the pain complained of during eight years was 'confined to the forehead and coronal surface, but *principally* to the latter region;' and that it was Dr. A.'s invariable practice to apply cold water to these parts every night to abate the extreme heat which he felt in them. By referring to those of the Dublin cases characterized by predominant activity of the same organ, a considerable similarity will be observed in the symptoms.

Functional excitement of the organ of *Imitation* is rarely sufficiently intense or sustained to lead, of itself, to that form of cerebral disease which constitutes insanity; but its influence in inducing other forms of nervous disease, nearly allied to madness, such as chorea, epilepsy, and hysteria, is proverbial. Cabanis gives an account of a man, in whom the tendency to imitate was so strongly marked and active from disease, that 'he experienced insupportable suffering' when he was hindered from yielding to its impulses. But we sometimes meet with it on a much more extensive scale. A person fell down in an epileptic fit, in one of the Dutch hospitals, and great numbers of the patients present immediately became affected in the same manner; and the evil was increasing to such a troublesome degree, that Boerhaave was greatly at a

loss how to stop it, when, on considering that the paroxysms originated in a peculiar mental impression, he thought the best way to cure it would be to substitute a strong mental impression of a different kind. He thereupon ordered a number of irons to be heated and applied as actual cauteries to the first patient who should thereafter have a fit; and so powerfully did this prescription affect their minds, that *not one was attacked.* In hysteria, in like manner, it is well known that the occurrence of a paroxysm in one person, will often induce a fit in another, who never had the disease before. The general fact here stated has indeed been long known; but Phrenology gives it additional value, by showing that the effect results in these cases from strong *cerebral* excitement, just as directly as if fear, anger, grief, intense study, or any other passion or mental operation, carried to an inordinate degree, were the exciting cause.

It has been already remarked, but I must repeat the caution, that although examples are adduced of inordinate action of single faculties of the mind, giving rise to disorder of their cerebral organs, it is not to be inferred from these that the excitement and disturbance were wholly confined to the particular faculty and organ referred to; but merely that the agency of the cause was exerted more directly and strongly upon these than upon the others. This observation applies still more forcibly to the derangement of the moral sentiments of which we have been treating; for, in almost every instance of insanity, characterized by morbid activity in the moral and religious feelings, more than one of these will be found diseased in its functions; and very rarely, indeed, do they stand out singly in the way that *occasionally* happens with the propensities. We seldom meet with morbid activity of Veneration, for instance, without a similar affection of Conscientiousness, or of Cautiousness, or of Wonder, and so on, giving rise to a complication of symptoms, as already illustrated when treating of the combinations of these faculties in a state of disease. But still the predominance of some over the others, and the direct operation of

the exciting cause upon these is generally unequivocally marked, demonstrating most satisfactorily the great leading principle, that intense or continued excitement of any mental feeling or faculty, may induce insanity, by exalting inordinately the action of its cerebral organ.

The *passions* and *feelings* of the human mind, or the *affective* and *moral* powers, are the most prolific sources of mental derangement, because their organs are the largest, — they are the most energetic of the faculties, — and they meet with daily and hourly stimuli in the ordinary affairs of life; but, although more rare, cerebral disease and mental derangement, from inordinate excitement in the *intellectual* faculties and organs, occur frequently enough to be familiar to every observer. But here, again, as the organs become smaller, and the faculties which they manifest comparatively weaker, the number acting together in any single operation seems progressively to increase; and, therefore, we must take classes and not individuals, of the intellectual faculties, to illustrate our position. Occasionally, indeed, curious specimens of disease in a single intellectual faculty, as that of Language, of Color, or of Music, present themselves, the rest remaining apparently sound; but these are so few in number, and are so little necessary to the exposition of our leading principle, that we need not stop to narrate them. I may only add, that numerous cases of affection of the organ of Language are recorded; and that the reader will find, in the third volume of the Phrenological Journal (p. 362,) a very remarkable instance of excitement of the organ of Tune, which occurred in a patient of my own, and which was accompanied by the most intense craving for musical indulgence, which at last overcame all the restraints of debility and external circumstances, and impelled the patient to leap out of bed, lay hold of a guitar, and give vent to her feelings in bursts of melody and song, which, perhaps, in her best health, she could scarcely have equalled, and in which the organic seat was distinctly indicated by severe pain felt during the two preceding days in the exact situation of the organ. In this case the func-

tional excitement was so great as to have caused alarm in the friends, from the apprehension of its being the first stage of delirium.

It is well known, that, when any part is exercised, an afflux of blood takes place towards it, attended with heat and increased action; and that, if this be carried too far, or be persisted in too long, *morbid* will take the place of *healthy* excitement, and derangement of function follow. It is in this way that intense study, deep thought, and excited feelings, bring on cerebral disease and mental disorder; and not only do the cerebral organs of the intellectual faculties suffer from such a cause, but even the less delicate organs of the external senses. Tissot, in his book on the Diseases of Literary and Sedentary People, says, that 'the eyes are among the organs most exposed to injuries from this cause. The continual fatigue they undergo irritates them; sometimes the eyelids and outward parts of the eye are inflamed; more frequently the nerves alone are attacked, without any perceptible external defect. I have seen several men in the prime of life, whose eyes were becoming so exceedingly irritable, that they could no longer bear the light, and were obliged to live and read in rooms so darkened, that I could scarcely distinguish letters of the largest stamp in them;' p. 55. The author then goes on to allude to the disorders of the nerves of the eye from too much reading, of which, he says, he has collected many observations.

Disorders of the eye and of vision, from over exercise of its function, are necessarily much more common than those of the other external senses; for the eyes minister to a greater variety of occupations, and are more constantly in use, than perhaps all the others put together. The reader will find several cases of *blindness*, from excess of action, mentioned at p. 150; and others of a similar nature, attended sometimes with great irritability, and at other times total deprivation of sight, are frequently met with in watchmakers, in printers for newspapers, and other workmen who are intently occupied in minute ob-

jects, especially in lamp or candle light; and the principle is precisely the same as that which leads to the production of cerebral disorder as a consequence of over study or mental excitement.

Hard and continued study, or over exercise of the intellectual organs, is another not uncommon functional cause of cerebral disorder, and of delirium, or insanity; which, considering the relation of the mind to the brain, it is not difficult to understand. If the brain did not require repose, mental exertion would never fatigue, and sleep would not be necessary. But as it is, the mind cannot remain constantly active; and sleep is to the brain what rest, or absence of motion, is to the muscles; and, just as the muscles are injured by excessive or continued activity, is the brain injured by excessive or continued mental exertion. Burton, in his singular book on the Anatomy of Melancholy, in speaking of too much study as a cause, quotes the following quaint passage from Marsilius Ficinus:— 'Other men look to their tools; a painter will wash his pencils; a smith will look to his hammer, anvil, and forge; an husbandman will mend his plough-irons, and grind his hatchet if it be dull; a falconer or huntsman will have an especial care of his hawks, hounds, horses, and dogs; a musician will string and unstring his lute; only scholars neglect that instrument (*their brain and spirits, I mean*), which they daily use, and by which they range over all the world, and which by much study is consumed.' This, he says, dries the brain, extinguisheth natural heat, and whilst the spirits are intent on meditation above in the head, the stomach and liver are left destitute, and thence come black blood, crudities, and melancholy; so that sedentary and diligent men are most part lean, dry, ill-colored, spend their fortunes, lose their wits, and often their lives also, and all through immoderate pains and extraordinary studies.

Among more modern authors who have noticed the same tendency from overstudy, Pinel may be mentioned. He speaks of a young man distinguished for his talents and his profound

knowledge of chemistry, who was occupied with a discovery which he hoped would lead him to fortune and distinction. To effect it the sooner, he resolved to shut himself up in his laboratory for several successive days; and the better to banish sleep, and to raise himself to the level of his labors, he prepared a variety of stimulants. A singing girl shared his retreat; he drank spirits, and smelled frequently odoriferous substances, and sprinkled the room with eau de Cologne. The combined action of all these means, added to the heat of his furnace, roused the cerebral excitement to such a degree, that, at the end of eight days, the most furious delirium took place followed by a regular attack of mania. If any thing can demonstrate the mutual influence of mind and brain, it is surely a case like this, — a case which it is impossible to read withont perceiving how easily the cerebral affection might have been of the violent inflammatory character, which terminates, in a few days, in life or in death; or of the febrile character, that lasts for one or two months, and leaves the mind forever reduced in tone and vigor. The reader will perceive a striking analogy in the circumstances of this case to those related at p. 174, as having occurred in another young man; and the similarity of result in both is another proof of the efficiency of the cause assigned.

The kind of intellectual exertion which is most apt to give rise to cerebral disease, when carried to an inordinate length, is that which stimulates without ever satisfying the faculties. Thus the study of abstract and metaphysical theories, about which an ingenious person may reason plausibly, without ever arriving at a determinate conclusion, will often excite the organs of the reflecting faculties into sleepless and uncontrollable activity and disease; and, in fact, it often did so in former times, when men devoted themselves more to abstract pursuits, and mingled less with the world. There can be no doubt that the vague nature of the study in which Dr. A—— engaged, on his retirement to Cupar, had an influential share in the production of the hallucination under which that gentleman labored. The

study of mechanical forces, also, which are in themselves abstract and complicated, and yet allure by the magnitude of their results, is in minds of limited powers another functional cause of cerebral disease and of insanity, by the stimulus which it affords to the mental organs. In the olden time, alchemy, and the search after the philosopher's stone, were studies of the same description.

It is also well remarked by Tissot, that the disorders produced by the efforts of the mind, fall soonest upon such as are incessantly engaged in the contemplation of the same object. In this case, he adds, there is *only one part of the sensorium* acted upon, *and that is kept always on the stretch; it is not relieved by the action of the other parts, and therefore is sooner fatigued and injured;* the same rule holding with the brain as with the muscles, that the exercise, which, if divided among the different parts of which it is composed will strengthen them, will, if confined to a few, exhaust and impair them. Boerhaave himself, after a long series of intense thinking, suffered for six weeks from excitement of the brain, bordering on madness, and characterized by that want of sleep, irritability, and indifference to ordinary interests, which so often appear as the harbingers of insanity. Sir Isaac Newton, too, greatly injured his mind from intense application; and indeed, his brain never entirely recovered the shock which it received, although he survived it more than thirty years. But it would be difficult to adduce a stronger instance of the tendency of mental excitement to induce cerebral disease, than happened some years ago to a gentleman remarkable for his accuracy in calculation, who, for a wager, lay down upon a bed and calculated mentally a question in geometrical progression, while another person performed the same operation with pen and ink. He repeated his product, which was a line of sixteen figures, and insisted that the other gentleman was wrong, which he proved to be; but he paid very severely for gaining his wager, because, for a considerable time, he had a swimming in

the head, pains in the eyes, and severe headaches, upon attempting to apply to figures.*

Numerous examples of severe and unremitting study, acting as a functional cause of cerebral disease, might be adduced, but after what has been said, I trust the reader will agree with me in thinking them unnecessary. One of the most striking instances I have witnessed was the medical gentleman referred to, as having lost his sight by over study. In him the brain had also become highly irritable, his powers of thinking impaired, his sleep disturbed, and his feelings depressed to such a degree, indeed, that he himself repeatedly expressed his apprehension that he was fast verging to insanity ; but his course was interrupted in time, and in six months his mind had pretty nearly recovered its usual tone.

After the preceding observations were *printed*, a melancholy case occurred in London, the history of which demonstrates so clearly their truth and importance, and is so well calculated to bring home conviction to the mind, even of the careless reader, that no apology can be necessary for its insertion. The account is taken from the Times Newspaper, and is entitled 'William Eyton Tooke, Esquire.'

'*To the Editor of the Times.*

'Sir, — The short notice extracted by you from an evening paper, of the melancholy circumstances attending the death of a lamented and highly-gifted youth, will be best explained by the subjoined report, by two eminent medical gentlemen, of a *post-mortem* examination.

'*It is, unhappily, not the first instance of the fatal consequences of over-tension of mind by incessant study, trespassing on needful hours of rest, and disdaining or disregarding the recreations or relaxations of ordinary life.*

'Mr. Eyton Tooke, from a very early period of life, *devoted himself to the most abstruse inquiries into moral and po-*

*Tissot, p. 10.

*litical philosophy, and has thus fallen a victim to the absorbing and exclusive nature of the pursuit.*

'He obtained the degree of B. A. at Trinity College, Cambridge, where *his intense application laid the foundation of this fatal result*, thus prematurely quenching all the fond hopes which his distracted parents were justified in entertaining, but which constituted the least portion of his claims to their attachment, as his high attainments were all subservient to the better feelings of duty and affection, by which every part of his domestic conduct was influenced.

'I am, Sir, your very humble servant,

'A Near Relative.

'*London, January* 28, 1830.'

'*Results of the Examination of the body of the late William Eyton Tooke, Esquire.*

'On examining, this day, the body of Mr. William Eyton Tooke, we found the blood-vessels of the membranes of the brain more turgid than usual, together with manifest traces of disease in the arachnoid membrane, which was preternaturally opaque from the disposition of coagulable lymph. A considerable quantity of coagulable lymph had also been effused between the arachnoid membrane and the pia matter. These appearances must have been the result of inflammation in that membrane, which, supervening upon a state of previous exhaustion, consequent upon excessive mental exertion, in too ardent a pursuit of knowledge, were, in our opinion, sufficient to account for the degree of excitement which has led to this unfortunate catastrophe. They also fully confirm the justness of the verdict of the jury on the coroner's inquest, namely, "that he destroyed himself while in a fit of temporary delirium."

'P. M. Roget, M. D.

'W. B. Lynn.

'*January* 28, 1830.'

'*Inquest on Mr. W. E. Tooke, jun.*

'Yesterday afternoon, at three o'clock, an inquisition was held at the Red Lion, in Parliament Street, before Mr. GELL, coroner for Westminster, and a highly respectable jury, on view of the body of Mr. W. E. TOOKE, jun. of No. 2, Richmond Terrace, who committed suicide on Wednesday morning.

'The following evidence was adduced: —

'ROBERT COPPIN, a very intelligent man, stated, that he was butler in the family of Mr. TOOKE, sen., who had three sons, of whom the deceased was the eldest. The deceased was of an *exceedingly studious turn, and had for many months past been directing his attention particularly to commercial subjects. This particular subject was his constant study, and the constant theme of conversation with him. It seemed to engross the whole of his attention, and his health, both of body and mind, was evidently impaired by it.* Witness had observed him particularly melancholy within the last few days, and had heard him say several times, placing his hand upon his head, "*This subject is too much for me — my head is distracted.*" On Tuesday, witness waited on him at table, and he seemed more than usually abstracted and melancholy.

'He saw no more of him after he left the dining-room until Wednesday morning, when, in consequence of the alarm given by Mrs. JATLAND, he went to his room and found him in the state described by her. He called Mr. TOOKE, sen., who dropped upon the floor at the sight of the corpse of his son. The deceased was a most amiable young man, and greatly beloved by his family. He completed his 24th year on the day that he committed the dreadful act. Arrangements had been making for some time, and were just completed, for his entering into partnership with his father.

'The coroner and several of the jury questioned the witness as to his belief of the state of mind of the deceased, and he declared his opinion that *intense study and application to business had produced temporary derangement.*'

'Mrs. Ann Jatland, who had been nurse in the family for ten years, gave evidence to the same effect, and observed, that, particularly since Christmas, Mr. Tooke had never been well; but was always very studious and melancholy. The jury, after a brief charge from the coroner, returned a verdict, "That the deceased committed suicide while under the influence of temporary derangement;" — a verdict, the truth of which no one can doubt who has considered either the history of the patient, or the account given by Dr. Roget and Mr. Lynn of the morbid changes which had taken place in the brain.

In addition to this, I may notice another case, also of recent occurrence, in which the concomitance of cerebral excitement with mental activity was made evident on dissection after death. A pupil, named J. B——, who resided for some time in an English boarding-school, and who was uniformly found to be slow, inattentive, and unwilling to exert himself in any way, became, during one-half year, *possessed of extraordinary activity;* his mental constitution underwent a thorough change, and, from being a lazy and inactive boy, he became very studious, exceedingly attentive to his business, and anxious to please his master, and improve himself in every way. At the end of three months, he was suddenly taken ill, and went home, and died in the course of a fortnight. When the body was dissected, he was found to have been carried off by inflammation, terminating in the effusion of water in the head. In these circumstances, then, one of two things must have happened; either the extraordinary mental activity which the boy so suddenly assumed was in reality the accompaniment of the first stage of the inflammatory excitement which afterwards terminated in effusion and in death, and owed its existence solely to morbidly increased cerebral action; or it was a natural activity, caused by the progressive development and consolidation of his brain and constitution, and which became morbid solely from over stimulus, or some other cause, accidentally applied within two or three weeks of the fatal termi-

nation. With the imperfect data which we possess, it would be rash to decide between these two opinions ; but, on either, the principle which I have all along been endeavoring to establish, of the connexion of the mental with the cerebral state, is so obvious that it cannot be overlooked.

Having satisfied ourselves, from the careful examination of every circumstance connected with the origin of insanity, that inordinate mental excitement, whether of the propensities, moral sentiments, or intellectual faculties, is invariably accompanied by a corresponding excess of action in the brain, and that the longer and more intense the former, the greater will be the danger of the latter becoming at last incompatible with the continuance of mental or bodily health, we are quite prepared to go along with GEORGET, when he states, that 'the causes which tend to derange the organization of the brain by the exercise of its own functions, are the most frequent, or, we might almost say, the only ones, capable of producing mental alienation. This is demonstrated by the tables published by various authors, such as Professor PINEL, M. ESQUIROL, TUKE, and other English and American physicians. In going over the numerous examples quoted in the *Traite de la Manie*, we are struck by the number of mental emotions which have provoked delirium or madness. The observations which it has been in my power to collect, and those, still more numerous, which I have been able to consult, have convinced me, that, out of *one hundred* lunatics, at least NINETY-FIVE have become so in consequence of moral affections or commotions. It has become almost a popular truth in the hospital (La Salpètrirèe), that no one loses his senses except by revolutions of mind. The first question which PINEL, puts to a new patient, who still retains some reason, is, whether she has been exposed to any grief, anxiety, vexation, or other moral affection ? And rarely is the answer in the negative.' * With this, and all the other evidence which I have adduced, before us, what are we to think when we find an author of some experience, like Dr.

* GEORGET, sur la Folie, p. 161.

KNIGHT, affirming that he could trace the operation of moral causes in ONE case only out of *seven hundred?* Either the laws which regulate the health and functions of the brain are totally different from those which preside over all other animal organs, and the concurrent testimony of our ablest and most experienced practitioners has been based upon a delusion savoring of insanity, or Dr. KNIGHT has been laboring under some idioscyncrasy of understanding, in regard to the meaning of the word *moral.* Which of them is the true explanation it is not worth while stopping to inquire. The truth will speak for itself to the minds of those who seek it with candor; and, after what has been said, it may safely be left to support itself.

## CHAPTER VI.

### SYMPTOMS OF MENTAL DERANGEMENT.

The phenomena which appear next in order, after the predisposing and exciting causes, are the Symptoms, indicating the supervention of cerebral disease, and of mental derangement as one of its consequences. To their consideration I now proceed.

It is a common occurrence for medical men to be called into a court of law, to determine whether an individual ought to be considered as sane or insane. Their ability to give a correct opinion depends upon the extent of their acquaintance with the healthy and morbid manifestations of mind, the chief conditions by which these are effected, and the signs which reveal the existence of insanity. Such, however, is the prevailing ignorance on all of these topics, that although character, fame, fortune, liberty, peace of mind, and almost every other motive by which man can be influenced, may be involved in the decision, there is scarcely any department of medical science in which greater confusion or variety of opinion prevails. In proof of this statement, I need only to refer to the humiliating appearance made at the late legal inquiry into the sanity of Mr. E. Davies, tea-dealer, London, by several of the professional witnesses, who displayed so much inconsistency of doctrine, and so little knowledge of human nature, as not only to have excited general surprise, but to have called forth from the whole London Press a continued torrent of derision and indignant invective, from

which, although good will ultimately result, neither they nor the profession will speedily recover.

Hitherto the chief impediment to the advancement of our knowledge of insanity, seems to have been the want of a *physiological* system of mental philosophy. In vain will the acutest and profoundest genius continue to observe and meditate on the phenomena, and seek to discover the Laws of Mind, so long as the most important of all its modifying influences, viz. its connexion with a material organ shall be overlooked; and in vain, in studying its pathological states, shall we seek assistance from the works of philosophers, who have paid no regard to, and are unacquainted with, the effects even of the healthy organization. Phrenology alone can claim the solidity of a physiological foundation; and, imperfect as it still is in many respects, it derives so many advantages from this source, that, though almost in its infancy, it already affords us more efficient aid in unravelling the complex and intricate relations of the healthy and morbid manifestations of mind, than all preceding systems put together have ever been able to supply; and, therefore, whether in recurring to its assistance, I shall succeed or not in removing any of the existing obstacles, or in throwing a single ray of light on an obscure subject, the attempt, at least, will not be without benefit to future inquirers, as the failure, if I do fail, will be mine alone, and some future phrenologist may be induced to do the subject greater justice.

Numerous definitions of insanity have been given, but never one which has been considered as satisfactory either by the profession or by philosophers. Dr. SPURZHEIM comes nearer to the mark than most of his predecessors, when he announces his expectation that the day will soon come, when derangement of the intellect and feelings, and cerebral affections, will be placed in the same order of diseases, and *we shall speak only of affections of the brain*, as we do already in regard to the disordered functions of the five senses, which we always refer to their respective organs.* But in his *professed* definition,

* SPURZHEIM on Insanity, p. 40.

even, he is far from being successful, as it rather repeats a truism than conveys any precise information. It is important to remark this fact, because definitions are constantly sought after, in civil and in criminal cases, by lawyers and by judges, and the whole value of a witness's evidence is often made to turn on its relation to a standard, which is in itself the merest assumption, seeing that it is beyond the power of man to invent any brief description, which shall comprehend the various cerebral affections whence insanity originates. Dr. SPURZHEIM states it to be the 'derangement of a sensation, or of an intellectual operation in an individual, who is not capable of distinguishing that diseased state; or the aberration of any sentiment in an individual, who cannot distinguish that aberration, or who has no control over the actions to which it impels him; or, in other words, it is the state of a man who is incapable of distinguishing the derangement of his mental operations, or who acts irresistibly.

On the old system of looking exclusively at the mental symptoms to the neglect of their pathological origin, this definition may seem, and in reality, is better than many others. In announcing that insanity is the derangement of a sensation, or of an intellectual operation in an individual who is not capable of distinguishing that diseased state, Dr. SPURZHEIM, seems, indeed, as if he took it for granted, that those who are of sound mind know intuitively all the conditions constituting mental health, and discern intuitively all aberrations from them; an extent of knowledge and discernment not possessed in regard to any organ of the body, and impossible to be obtained in regard to the organ of the mind, in respect that it is at once the instrument of judging, and the subject to be judged of; but in reality he entertains no such notion, and it is not from any fault of his, but from the nature of the question itself, that he has fallen into this apparent error. It is also worthy of remark, that some lunatics are aware of their condition, and yet do not act irresistibly in the sense alluded to by Dr. SPURZHEIM, which applies, as I understand it, only to those whom no external motive,

save force, can restrain. The very attempt, indeed, to frame one definition inclusive of *all* the organic affections which produce insanity, and that definition made with a reference not to the pathological states, but to the mental symptoms only, is so inconsistent with the principles first so ably advocated by Dr. SPURZHEIM, as to lead to the belief that it had been made more from deference to the usages of other authors, than in obedience to the dictates of his own sounder judgment. A comparison with the course followed in regard to diseases of other organs, will give a clearer notion of the force of this remark.

In treating of the derangements of other functions, as of Sight, for instance, instead of one general description of a morbid state called *disturbed vision*, we look at the variety of diseases from which they originate, give a definition of each, and regard the disorder of sight as a consequence common to them all. We have thus definitions of ophthalmia, of iritis, of cataract, of amaurosis, and of the various other affections to which the eye is liable. If, in like manner, in treating of the derangements of the cerebral and mental functions, we attend to the variety of morbid states which produce them, we shall perceive at once the impossibility of constructing a general delineation of a single morbid condition, called deranged mind, and recognize the necessity which exists of giving a distinctive definition of *each* of the diseases from which it arises. Instead, therefore, of following the common practice, I shall only state, generally, that the existence of insanity implies morbid action in one, in several, or in the whole of the cerebral organs, and, as its necessary consequence, functional derangement in one, in several, or in the whole of the mental faculties which these organs subserve,—and proceed to consider by what symptoms these conditions may be recognized.

In investigating the nature of insanity, the first caution to be observed is not to confound disorders of mental functions with natural qualities, which sometimes strongly resemble them. Many men in the full enjoyment of health are remarkable for

peculiarities of character and idiosyncrasies of thought and feeling, which contrast strongly with the general tone and usages of society; but they are not on that account to be held as insane, because the singularity for which they are distinguished is with them a natural quality, and not the product of disease; and, from the very unlikeness of their manifestations to the modes of acting and of feeling of other men, such persons are, in common language, said to be *eccentric*. It is true that, on the principle already explained, of excess in size of some organs over the rest being favorable to the production of insanity, eccentricity involves, all other things being equal, a greater than usual susceptibility of mental derangement; but still it is not mere strangeness of conduct or singularity of mind which constitutes its presence. *It is the prolonged departure, without an adequate external cause, from the state of feeling and modes of thinking usual to the individual when in health, that is the true feature of disorder in mind*; and the degree at which this disorder ought to be held as constituting *insanity*, is a question of another kind, on which we can scarcely hope for unanimity of sentiment and opinion. Let the disorder, however, be ascertained to be morbid in its nature, and the chief point is secured, viz. a firm basis for an accurate diagnosis; because it is impossible that such derangement can occur unless in consequence of, or in connexion with, a morbid condition of the organ of mind; and thus the abstract mental states, which are justly held to indicate lunacy in one, may, in another, speaking relatively to health, be the strongest proofs of perfect soundness of mind. A brusque, rough, manner, which is natural to one person, indicates nothing but mental health in him; but if another individual, who has always been remarkable for a deferential deportment and habitual politeness, lays these qualities aside, and without provocation or other adequate cause, assumes the unpolished forwardness of the former, we may justly infer that his mind is either already deranged, or on the point of becoming so. Or, if a person who has been noted all his life, for prudence, steadiness, regularity, and sobriety,

suddenly becomes, without any adequate change in his external situation, rash, unsettled, and dissipated in his habits, or *vice versa*, every one recognizes at once these changes, accompanied as they then are by bodily symptoms, evidences of the presence of disease affecting the mind, through the instrumentality of its organs. It is therefore, I repeat, not the abstract act or feeling which constitutes a *symptom;* it is *the departure from the natural and healthy character, temper, and habits, that gives it this meaning;* and in judging of a man's sanity, it is consequently as essential to know what his habitual manifestations, were, as what his present symptoms are. Just as in investigating stomachic affections, we do not compare the variations of appetite, or the strength of digestion, with any fixed or imaginary standard, but always judge of their value as symptoms in relation to their former state; because the moderate appetite which is natural to one constitution, occurring in a person who had previously been remarkable for keenness and power of digestion, would justly be considered as an indication of loss of health; while the voracious appetite natural to a third, would, in a different constitution, be as sure an index of stomachic disease.

The same principle holds, indeed, not only in regard to the mental phenomena, as indicating the condition of their organs in the brain, but also in regard to every part and function of the body, whether animal or mental; and, in ordinary diseases, is so familiarly acted upon, that it would seem like affectation to give it the prominence in regard to mental affections which I am endeavoring to do, were it not that some experienced physicians, such as Dr. Haslam, have expressly advocated a different doctrine, and represented the mind of the physician as the standard by which the sanity of the patient ought to be determined. It is, for instance, solely under its guidance, expressed or implied, that the physician acquainted with the peculiar habits and constitution of a particular patient often looks with indifference at the occurrence of a symptom apparently of an alarming character, because he knows that in

him it is less a sign of disease than a natural appearance ; and it is under its guidance that he looks with calmness on variations in the state of the pulse in one patient, which, occurring in another, would excite his liveliest apprehensions.

But, while we give due weight to changes of disposition and of character, as symptomatic of a morbid condition of the organ of mind, the reader must not infer that I regard every such deviation as allied to insanity. There are many situations in which a change indicates, not disease, but an improvement of our moral nature ; and in which also particular mental qualities are kept for a time in a state of unusual permanent activity, by the mere force of external excitement, without a trace of morbid action, and which it would consequently be ludicrous to regard as indicative of derangement. But, in these cases, the deviation from the preceding mental state is unaccompained by a single symptom of disease, and is exactly proportioned, in extent and permanency, to the external causes which have brought it about, and to the constitution on which these have acted. Whereas, in mental derangement, the deviation from the natural habits and modes of thinking and feeling is either altogether disproportionate to the apparent external cause, or is accompanied by symptoms unequivocally indicating the co-existence of disease ; and, as our exposition is intended not to erect the mental symptoms into the sole signs of insanity, but to show by what standards they ought to be estimated, and the relation which they bear to the corporeal changes, I trust that no one will ascribe to it any other meaning.

In the article *Folie* of the *Dictionnaire de Médicine*, Georget has presented us with an exceedingly graphic description of the *invasion* of insanity, to every line of which the rule above laid down applies with a truth, and exactness, which could not have been surpassed had it been written expressly as an illustration. 'Sometimes,' he says, 'the action of the cause is strong and rapid ; at other times more moderate and slow. In the first case, madness breaks out at the end of some hours or some days, after a state of anxiety and unea-

siness, with headache, sleeplessness, agitation or depression, and threatening of cerebral congestion ; the patient begins to babble, cry, sing, and becomes agitated and wild. He is then often taken for a person in a state of intoxication, and the mistake becomes apparent only after examining the previous circumstances and the duration of the malady. In the other case, thought only becomes affected gradually, and often very slowly ; the patient is generally conscious of some disorder in his intellectual faculties ; he is beset by *new* and *odd notions*, and by *unusual* inclinations ; he feels himself *changing in his affections* ; but, at the same time, he preserves a consciousness of his condition, is vexed at it, and tries to conceal it ; he continues his occupations as much as he can ; and, lastly, as many people do in the first stage of intoxication, *he makes every effort to appear reasonable.* Meantime his health continues to give way, and he either sleeps less or loses sleep altogether ; the appetite diminishes or disappears ; sometimes digestion is difficult, and constipation supervenes ; *en-bon-point* decreases, the features alter, the monthly discharge becomes irregular, weak, and at last is suspended. At the same time, the bystander remarks something *unusual, and even extraordinary, in the tastes of the patient, in his habits, his affections, his character and aptitude for business ;* if he was *gay and communicative,* he becomes *sad, morose,* and *averse to society ;* if he was *orderly* and *economical,* he becomes *confused* and *prodigal ;* if he had long abstained from the pleasures of love, he becomes the victim of insatiable desires, and either seeks to associate with the other sex, or has recourse to disgraceful practices ; if he was *moderate* in his political and religious opinions, he passes to an *extreme exaggeration* in both ; if he was *open* and *candid,* he becomes *suspicious* and *jealous ;* if a wife, she regards with indifference her husband and children ; the merchant neglects his business ; *tears* and *laughter* succeed each other without apparent motive ; the exterior of *candor* and *modesty* gives place to an air of *conceit* and *assurance,* which, especially in women, astonish us. But all these phenomena are less prom-

inent than they may appear to be here, and unless the individual have been insane before, no one may suspect the nature of the ailment which torments him; all the questions put to him lead to no result, except that of fatiguing and giving him pain, for the ignorance which prevails in regard to insanity leads the friends to indulge in offensive insinuations, and to charge him with frivolous accusations, from not perceiving that he is under the influence of disease and not of reason. Sometimes the appetite either remains entire, or is speedily recovered, as well as digestion, nutrition, &c.; and it is in these circumstances that the conduct of the patient gives rise to a host of interpretations on the part of the parents and public.'

'This period of *incubation* of mental alienation during which the true state of the patient is generally misunderstood, or not appreciated, may last a long time. M. PINEL relates, that a man who believed his wife to have been ill only six months, the period of the invasion of furious delirium, agreed, after a multiplicity of questions, that the disease must have been going on for *fifteen years*. The same author mentions elsewhere, that in several instances the maniacal, or melancholic state, has begun four, six, ten, or even fifteen or twenty years previously. It is often easy to go back months, or years, in this way; and we finish by discovering that circumstances, taken for causes by the friends, are frequently only the consequences of unobserved disease. In fact, it often happens at that period of the malady, that a slight contradiction, or paroxysm of anger, or some cause equally insignificant to a person in good health, provokes the immediate and complete subversion of reason, and gives rise to mistakes as to its true cause and duration. M. ESQUIROL has observed, and pointed out this very successfully.'*

But although the symptoms of insanity are in many instances such as *contrast* with the natural character, or with some of its principal features, they are not always of this kind, for dis-

* Dictionnaire de Médecine, tome ix. p. 244.

ease in any part may affect *intensity* as well as *quality* of function, — both, however, equally constituting departures from its ordinary and healthy condition. In this way we meet with examples of mental alienation, of which the chief symptoms are merely an exaggeration, as it were, of the natural qualities of the individual, while we also meet with many in which they form a perfect contrast. In treating of disproportionate development of the different parts of the brain, as predisposing to disease, in virtue of the tendency to inordinate action which all usually developed parts possess, I took occasion to explain physiologically the process by which excessive healthy activity, long kept up and frequently recurring in the same organ, is gradually converted into morbid and involuntary irritation, attended with an exaggeration, both in degree and in duration, of the corresponding function as its characteristic sign; and it is important that the reader should keep the principle in mind, as it admits of very numerous and useful applications. It is from this cause that men of partial genius and unequal endowment of mental qualities, especially if possessed of an irritable constitution, are more prone to insanity than those who are fortunate enough to possess a more harmonious cerebral combination. The result, of course, varies according to the region in which the preponderance exists. If the preponderating organs belong to the anterior lobe, then we have intellectual genius as the mental feature in health, and *intellectual* disorder as the feature in disease. If they belong to the coronal region, then we have, in the healthy state, a straining after moral and religious excellence, or a *genius for morals*, so to speak, which opens up sources of delight and of feeling, which a less gifted person cannot comprehend; and, in disease, we have perhaps religious melancholy, or self-accusation. But if they belong to the basilar and posterior regions, then we have, in health, a vehemence and energy of passion and propensity which are truly formidable, constituting what may be termed a genius for mischief, jealousy, suspicion, violence, dissipation, anger, and all the lower passions; and, in disease, we have all

the fury and recklessness of mania. Humiliating as it may be to human pride, we have thus one physiological condition in common, viz. a preponderance in size and activity of a portion of the brain, between the genius of a NEWTON, the devoted philanthropy of a HOWARD, and the grovelling ferocity of a HARE or a BELLINGHAM; and Nature, having formed the connexion, it becomes our duty, in the spirit of mutual charity and good sense, to open our eyes to its existence — to examine the common relation, in regard to the invasion of mental disease, which it establishes between the different classes of mankind — and not to act as if, by denying its influence, we could annihilate its power.

In practice, accordingly, we meet with individuals of irritable or predisposed constitutions, and of unequal developments of brain, who have become insane from the great activity of their predominant organs having, by the very stimulus of constant exercise, passed beyond the limits of health, and beyond the control of the will, and whose insanity consists, consequently more in an exaggeration of, than a contrast to, their natural qualities and dispositions. It is more difficult to draw the line of distinction between healthy and diseased manifestations in such cases, because the change from the one to the other is gradual, and sometimes imperceptible, but in the extreme points it is abundantly obvious. This was, apparently, one of the obstacles to forming a correct opinion of the state of Mr. DAVIES, whose constitutional peculiarities were so marked and numerous, as to resemble disease even when he was well, and in whom, consesequently, it was not easy to say at what point the exaltation of disease began. Many men in this state of insanity have been executed for crimes, which were in truth, only symptoms of their morbid state. And it would be rendering a service to society to draw attention to the fact. Were it not out of place here, I could easily adduce a variety of instances of this kind from the records of France and of our own country. But, unwilling as I am to trespass on the patience of the reader, there is one which so completely exemplifies the principles laid down

— which is so unquestionably true in its facts, and which occurred in a rank of life so much more likely than any other to escape the dreadful consequences of mistake — that I cannot refrain from quoting it at some length. To save repetition, I shall mark in italics all passages bearing reference to the preceding observations.

About the middle of the last century, LAWRENCE Earl FERRERS was tried before the House of Peers for a murder, committed evidently in a state of mental derangement, characterized by a change, *not in kind, but in degree*, of his natural qualities and dispositions. The circumstances, as abridged from SMOLLET's Continuation of HUME's History of England, were as follows:

Earl FERRERS was, in the opinion of all who knew him, a nobleman of a *violent* spirit, and, as such, had been guilty of *many outrages*. His behavior to his lady was habitually *so brutal* that a separation was effected by act of Parliament. On his trial it was proved that he had long been *beset with unfounded suspicions of plots and conspiracies, unconnected ravings, sudden starts of fury, denunciations of unprovoked revenge, frantic gesticulation, and a strange caprice of temper;* or, in phrenological language, that his preponderating organs belonged to the base and posterior parts of the brain, and their activity was accompanied with that vehemence and energy of passion and propensity, which I have just described as accompanying such a development in irritable constitutions, and as constituting a *genius* for mischief, &c. It was proved that lunacy was hereditary in the family, and affected several of his relations; that *a solicitor of reputation had renounced his business, on the full persuasion of his being disordered in his brain;* that *long before* the unhappy event for which he was tried, his nearest relations had deliberated on the expediency of taking out a commission of lunacy against him, and were prevented only by the apprehension of being convicted of *scandalum magnatum*, should the jury hold him to be of sound mind; a circumstance, adds the historian, the more likely to have happened that his

madness appeared *in his conduct*, and not in his conversation. A physician, skilled in this branch, pronounced him insane, and in that light he had long been regarded by his neighbors. *Even previous to the time of his separation* from Lady FERRERS, his violence of disposition was so conspicuous, that one of the Peers declared from his seat *that he looked upon him as a maniac, and that, if some effectual step was not taken to divest him of the power of doing mischief, he did not doubt but that they should have occasion to try him for murder.* His understanding was naturally good, and had been well cultivated, and his arguments and remarks were very rational, even when his conduct was frantic.

Such were his lordship's natural dispositions. When the act of separation passed, trustees were appointed ; and, at the Earl's own request, Mr. JOHNSON, who had been all his life employed in the family, was appointed receiver of his estates. In the state of morbid irratibility in which he now was, his natural jealousy and suspicion assumed the ascendancy, and he imagined *all his relations to be conspiring against him*, and that JOHNSON had become *one of their accomplices*, (a very usual feature of insanity.) Fired by this supposed collusion, and other imaginary ill-treatment, his lordship attempted to dispossess Mr. JOHNSON of his farm, but found that he had not the power. Provoked and excited still more by the failure, he determined to *gratify his revenge by assassination.* To effect this, he ordered JOHNSON to attend him with his papers ; sent away the male servants on various errands, and, on JOHNSON's arrival, locked the room door ; and, after a warm expostulation, insisted on JOHNSON's signing a paper, acknowledging himself a villain, under pain of being shot. JOHNSON remonstrated against such cruelty, and deprecated the Earl's unjust indignation. The latter was *deaf to his entreaties, commanded him to kneel and implore Heaven's mercy, and then shot him.* Mr. JOHNSON fell over in great agony, which for a moment excited the Earl's pity, and made him have his victim carried to bed, a surgeon sent for, and JOHNSON's family informed of what

had happened, and expressed great anxiety for his recovery. Nobody acquainted with insanity could doubt but this last act was the deed of a madman, hurried on to fury and revenge by supposed injuries arising out of morbid excitement of his predominating propensities. The proofs of its having been so did not, however, stop here. No sooner was Mr. JOHNSON attended to, than the momentary pity vanished, and the Earl declared to Mr. JOHNSON's daughter, and to the surgeon, that he intended to have killed him, *and did not repent what he had done*, for JOHNSON was a villain who deserved his fate. He then drank to intoxication, when his hatred became so inveterate that *he would not allow the wounded man to be removed to his own house, but would keep him near himself 'to plague the villain.'* He then went to his room, *abused and insulted him, and threatened to shoot him through the head, and was with difficulty restrained from using violence.* Next morning Mr. JOHNSON died in great agony.

Notwithstanding all the proofs of insanity which were adduced at the trial, Earl FERRERS was found guilty of murder, and ordered for execution at Tyburn. And as if, even in death, to show his countrymen the cruelty of their judgment, *he dressed gaily for the occasion, in a light-colored suit of clothes, embroidered with silver*; and, although displeased at being hanged like a common felon, behaved with propriety and composure, and took an opportunity of declaring that he had no *malice* against Mr. JOHNSON, and that the *murder was committed in a perturbation of mind, occasioned by a variety of crosses and vexations;* but stoutly disclaimed being insane, having had recourse to this plea solely to satisfy his friends.

It is impossible to read the preceding account of this unfortunate nobleman, without remarking how strongly it corroborates the views previously taken of the influence of inordinate development of some organs in predisposing to insanity from the excessive action to which it gives rise, and the facility with which, in irritable constitutions, it may transgress the limits of health, and pass into disease. Long previous to the deed for

which Earl FERRERS suffered, the prominent features of his mental character were the apparently incongruous qualities of sound understanding, rational conversation, want of moral or even common prudential feeling, jealousy, imperiousness, ungovernable temper, and brutality towards his Lady; and that these were indicated by his cerebral organization is rendered almost certain, by comparing the somewhat analagous case of E. S. mentioned in a former page, as having exhibited equal intelligence and ingenuity in conversation, combined with violent passions, great moral depravity, and repeated attempts at *parricide*, and in whom, from the examination of the head alone, Mr. COMBE predicated most correctly the existence of these very qualities. The points of resemblance between the two cases are indeed so numerous, that we cannot but regret that the prudent and kind resolution, of having the patient put under restraint, so judiciously acted upon by the friends of E. S., and also once entertained by his Lordship's relations, was not followed at the time, and his memory and family thus saved from the stigma subsequently cast upon them.

If, in Earl FERRER'S case, we add, to the natural proneness to excessive action, arising from predominance in size of the animal organs, the hastiness and vivacity arising from a quick and irritable temperament, increased by constant exercise, and the hereditary tendency to insanity, the result will be an impetuousness of mental action in the direction of the propensities, and a corresponding intensity of vascular and nervous excitement in the head, which in his best health would place his cerebral organization constantly on the brink of disease. In such a condition of the system, the departure from the natural state of the mental faculties which I have already mentioned as characteristic of morbid action, is present as much as if the new qualities formed a *contrast* to the old. The difference is in *degree* more than in *kind*. In health, the patient is irascible; in madness, he is furious: in health, he bears provocation to some extent; in madness, he waits for no provocation, but finds causes in every thing · in health, he is prudent and suspicious,

from occurrences which others would disregard; in madness, he becomes pusillanimous, and dreams of plots and stratagems, founded on nothing: in health, he is proud, and full of his own consequence; in madness, he conceives himself a great warrior, an officer of state, an emperor, or a deity. When properly analyzed, however, all these aberrations are found to be as certainly mere departures from the natural state of the mental functions, as when the change is one of quality. An individual with a good endowment of Adhesiveness, for example, will, when the organ is healthy, be attached to his family and friends; but when it is diseased, he may be indifferent to them if it be *diminished* in activity; love them romantically if it be *excited;* or show aversion or dislike to them if the *quality* of the function be vitiated. In like manner, a person with a good Cautiousness will, when the organ is healthy, be prudent and circumspect; but when it is diseased, he may be either rash and thoughtless from *impaired* function; unusually cautious and apprehensive from *excited* function; or have his fears directed to some ridiculous objects, or appearing in some unusual form from a change of *quality;* or a person with a good Benevolence will, in health, be kind and compassionate, but in disease be either cold and indifferent, or generous even to prodigality. In all these instances, therefore, the *chief* circumstance of practical value is the indication of a *departure from the previously healthy condition of the faculty or faculties in which the change has occurred;* and the consequent necessity of deciding upon the patient's sanity from *a comparison of his present manifestations with his previous healthy character and habits,* and not with any abstract standards or with the modes and habits of other individuals differently constituted from himself.

Supposing this view of the circumstances which indicate the existence of insanity to be correct, what encouragement does it hold out to us to attempt the enumeration of *all* the mental symptoms observed in its progress and varieties? Most assuredly very little, either on the score of possibility or utility. How many volumes would it require to delineate all the

varieties of character which present themselves in persons of sound mind? And how many more would it require, were we to add the description of the thousand and one varying hues which appear even in *one* deranged mind, and to point out the distinction between these and the healthy manifestations?* Fortunately for us, the attempt, even if successful, would be as useless as it is in reality impracticable. The proper and only way to acquire a knowledge of the mental phenomena indicative of madness, is, as we do in regard to all other organs, first to ascertain the HEALTHY functions of the primitive faculties of the mind (which can be done only by the phrenological mode of inquiry), secondly, to determine the *previous* relative strength and mode of action of the various faculties *in the individual* under examination, as habitually manifested during health; and, lastly, to hold every departure from that standard, which shall be permanent in duration, or violently disproportioned in degree to the exciting cause, and accompanied with other symptoms of disease, as *ipso facto* a sign of a greater or less degree of morbid action in the brain and nervous system, and of mental derangement. I do not mean to say that every shade of such excitement is to be held as insanity, and as requiring the confinement of the patient. Very far from this: I think infinite mischief is done by treating a man as insane, who is only in a state of temporary nervous irritability, which may be removed by judicious and kind treatment, but which may also be converted into mania by inconsiderate harshness. I only mean to say that the condition of such a person is *morbid*, and that it will require management to save him from insanity, if a predisposition exist, or a strong external cause occur to irritate or annoy him; and, on this view, whenever it happens that, along with evident signs of bodily disease, and without he existence and continued action of any inadequate external cause, the temper, dispositions, or habits of thinking of any

* Quel est celui qui oseroit se flatter d'avoir observé et de pouvoir decrire tous les symptomes de la *manie, meme dans un seul individu?*— ESQUIROL, *Dictionnaire des Sciences Medicales*, tome XXX. p. 446.

one, are permanently altered from their natural state, I hold the mind of that individual to be thereby, and to that extent, disordered; and, if these modes of thinking and feeling be altered to such a degree, as to communicate impulses to action too powerful to be resisted, or to present palpably erroneous views in too plausible a light to be set aside by his own understanding, which would *previously* have been able at once to perceive their falsity, then the derangement of the mental powers becomes such as we are accustomed to designate by the names of Insanity, Melancholy, or Mania.

In studying the pathology of insanity, therefore, it is throwing away time and labor, and even creating fresh difficulties in our path, either to devote much space to the description of the abstract mental symptoms, or to attempt to found any useful nosological classification on so fleeting a basis, it being agreed, on all hands, that the mental features are in themselves innumerable and ever changing.* Esquirol, accordingly, in alluding to the division of mental disorders which he has adopted, and which is founded on the mental symptoms, candidly admits, that 'Insanity takes all these forms successively and alternately; *monomania, mania, dementia, alternate and replace each other in the course of the* same *disease in the* same *individual.*' And almost in the same page he states the converse of this, and says, 'these forms' (monomania, mania, &c.) 'being common to many mental affections of very different *origin, nature, treatment, and termination,* do *not* characterize the species.' All practical writers, indeed, are of one opinion on this point. Dr. Burrows, for example, the latest and best of our English authors, not only regards all such classification of mental disorders 'as worse than useless,'† but unhesitatingly

* '*Les médecins ont voulu classer les nuances de la folie, c'est à dire des choses aussi peu susceptibles d'être classées que les nuages. Quel en a été le resultat? C'est que des mots Grecs ont été substitués à des mots Français intelligibles pour tout le monde, et des idées contradictoires réunies dans le même mot.*' — Regnault, Competence des Médecins, &c. p. 20.

† Vide Comment. on Insanity, p. 252.

expresses his conviction, that 'the long prevailing error of studying the mental to the neglect of those corporeal phenomena which are almost always cognizable,' has been '*the greatest obstacle to the knowledge of the pathology of insanity;*' and, therefore, although spirited delineations of the more striking hallucinations of the insane are often intensely interesting to the general reader, as well as to the student of human nature, I shall avoid them, both as unnecessary, and as easily accessible in all treatises on insanity, and rather direct the attention of the reader to the consideration of the nature of the corporeal disorder, of which insanity is an effect; for all the evidence yet adduced, and all the phenomena hitherto observed, go to prove that disorder of the mental organs situated in the brain constitutes the disease, and that the mental derangement is the mere effect or indication of the existence of the former; and, therefore, if ever we shall succeed in drawing a line of distinction between the different kinds of madness, it will be by the aid of characters which mark the different kinds of cerebral affections, and not by any information derived from the mental phenomena alone.

The symptoms which appear in mania seem at first sight countless in number, and intricate in connexion, beyond the possibility of analysis. But if we keep in view the different parts of which the brain and nervous system are composed, the functions which each performs, and their relations to each other and to the rest of the body, we shall not only perceive the source of the indescribable multiplicity of phenomena in the innumerable combinations into which so many parts may enter, but have a leading principle to guide us through the confusion which shall render all such details unnecessary.

In adverting to the causes of mental alienation, we derived assistance in the clearness of our exposition, from dividing them into three distinct classes, corresponding to the *situation* and twofold *functions* of the brain. In treating of the symptoms, I shall adopt the same plan, and mention first those which are connected locally with the head and brain; secondly, those

which spring out of the relations existing between the brain and remote organs; and, lastly, those which proceed directly from disturbance of function in the parts of the brain subserving the primitive mental powers.

*First*, The *local* symptoms which accompany insanity, are common to this and other affections of the head and brain, and therefore require no particular enumeration. Pain, often confined to one part, heat, a feeling of confusion, weight, or constriction in the head, noise in the ears, flashes of light, throbbing of the arteries, flushing, giddiness, a peculiar expression, frequently with protrusion of the eye, fulness or almost puffiness of the scalp, fulness and oiliness of the face, dullness or other alteration of hearing, of smell, of taste, and often of sensation, with general irritability, are the most commonly met with. But, in regard to such of them as are known only through the testimony of the patient, it is necessary to remark, that, during the acutest period of his illness, he may deny their existence altogether, and yet, on recovery, or in convalescence, almost shrink at the recollection of what he suffered from them. . Silence at this period, therefore, is not to be considered as a proof that they are not present and felt by the patient.

From the details already given in discussing gastric irritation as an exciting cause of insanity, little will require to be said in regard to the *second* order of symptoms, or those which arise out of the relation in which other organs stand to the brain, as the centre of sensation and the fountain of nervous energy. I then noticed the striking remark of Broussais, that moral causes frequently produce their first visible effect on the abdominal viscera, the brain through which they act, and the mental functions which it executes, remaining unaffected, till by sympathy with digestive irritation, they also begin to suffer; and, *vice versa*, that gastric derangement frequently shows itself first by its effects on the brain and mind, and by producing restlessness and irritability of temper, and depression, before the stomach itself indicates any disturbance. This, however, happens only when the organ secondarily affected is either

constitutionally weak, or otherwise prone to disease. And, therefore, although digestive derangement does occasionally precede and produce the mental affection, it is yet generally found, on careful inquiry, that the patient has been subjected to some moral anxiety, exhibited unequivocal symptoms of cerebral disturbance, and been conscious of the involuntary predominance of certain feelings or ideas, which he cannot drive from his mind, before beginning to complain of want of appetite, nausea, bad taste in the mouth, uneasy sensations in the epigastrium, flatulence, and other symptoms of stomachic disorder; and that the increased mental discomfort subsequent to these has been merely an aggravation, from reaction of the stomach upon the brain and nervous system, of a previously existing mental affection. Even in acute cerebral disease, what is more common than to find *nausea* and *vomiting* precede by several days any symptoms bearing a direct reference to its true seat?

When, as in some predisposed subject, the gastric irritation does precede and is the cause, then, as Broussais remarks, the 'symptoms will at first be simply those which characterize dyspepsia, viz. sensibility or pain in the epigastrium, and in one or both hypochondria, flatulence, tardy and uneasy digestion, belching, constipation or diarrhœa, and redness of the tongue, to which may be added a multitude of sensations more or less insupportable, in the head, in the organs of motion, and even in the interior of the body, all of which torment the mind of the patient, dispose him to sadness, to solitude, to continual reflection on his own state, to sleeplessness, to the perusal of medical books, and the pursuit of specifics. He then believes himself to have all the diseases of which he hears any one speak, a host of imaginary evils besets him, and he becomes, from time to time, subject to hallucinations,' * which gradually become more frequent and more permanent, till at last the mind gives way, and pure insanity is the unhappy result.

* Lib. cit. 346.

A curious reciprocity of influence is frequently observed between the several passions and the visceral irritations which they excite. 'For example,' says Broussais, who notices this fact, 'if, on the one hand, fear and surprise can cause palpitations of the heart; so, on the other, do palpitations from a physical cause excite the feelings of fear and surprise; and the same is the case with the stomach. All disagreeable moral impressions, accompanied with a tendency to anger, make it suffer; and, in like manner, derangement of the stomach, from a local cause, is apt to induce sadness and impatience. And there is no organ in which this mutual influence is more evident than in affections of the organs of generation.'* Although, it may be doubted, whether irritation of secondary organs, like the stomach, heart, or uterus excite the corresponding mental passions, and *vice versa*, so generally, as the above statement would lead us to believe, it is quite certain that a relation of some kind subsists between them; and, as a more accurate acquaintance with the circumstances by which that relation is modified, would be of much practical utility, we are at all events indebted to Broussais, for calling attention to this subject, in connexion with many others which his talents and industry have already successfully elucidated.

Sometimes, as alluded to above, the secondary symptoms are such as indicate a morbid condition of the organs of generation, and then the form of alienation corresponds; but, in considering both these and the stomachic symptoms, it ought never to be forgotten, that irritation in the brain excites secondary irritation in, and consequently disturbs the function of that particular organ, which is naturally most predisposed to assume unhealthy action; and, on the other hand, that primary irritation in a remote organ, rarely affects the brain, so as to disturb the mental functions, unless in a subject constitutionally predisposed to cerebral disease, or unless it be of a severe and permanent kind; the *cerebral affection* being in all cases, however produced, the *sine qua non*, or essential constituent of mental derangement.

* Broussais de la Folie, 462.

The *third* and most important class of symptoms includes those directly originating from the disturbance of function of the cerebral organs. It consequently comprehends all manner of morbid sensations, false perceptions, hallucinations of feeling, perversions of affection and of modes of thinking, and, in short, every thing relating to the *mind;* and therefore it presents a mass of phenomena of almost endless detail, which can be understood only by the aid of a sound physiology and mental philosophy.

Keeping in view that derangement of function is neither more nor less than a departure, either *in degree or in quality,* from its natural and healthy condition, we shall first notice the lesions of *sensation* most frequently met with as symptoms of insanity.

In the first chapter, I mentioned that the joint action of nerve and brain is necessary to sensation, and that, as a consequence, the function may suffer from causes affecting one or other, or both. Like the mental functions, those of the nerves may be *diminished, exalted,* or *perverted* by disease. If the former is the state, diminished sensibility to stimuli appears as the symptom: thus it once happened that a lunatic, in the height of a paroxysm, thrust his foot into the fire, and allowed it to be burnt away without a complaint of pain.* Others have been exposed to intense cold, to severe external injuries, and to extremes of hunger, without seeming to be conscious of any thing unusual in their situation. Many have, for instance, had fingers and toes, and even whole extremities, frostbitten, and actually mortified, without being aware of it. This impaired sensibility in regard to cold must not, however, be confounded with a very different condition, in which the result alone is similar. In certain states of the system, the production of animal heat is so rapid, that the patient is able to brave the

* Since the above was written, I have had an opportunity of seeing an extraordinary instance of the same kind in Bethlehem Hospital, where a man was pointed out to me by Dr. WRIGHT, as having laid his head upon some burning wood, and allowed a large portion of the scalp to be burnt away, without flinching or apparent suffering.

severest cold with perfect impunity. In those vast but instructive repertories of human misery, the Salpètrière and Bicétre of Paris, PINEL had ample opportunity of witnessing every variety of both conditions. He notices one man, in particular, at the latter place, who, in the depth of winter, when the thermometer stood at 20, 25, and even 30 degrees below the freezing point, had such a sensation of heat in his system, that he could not bear a single blanket, but remained seated all night on the frozen pavement of his cell; and scarcely was the door open in the morning, when he ran out in his shirt, and applied handfuls of snow to his chest, and allowed it to melt with a delight like that which we experience in breathing a cool air during the dog-days. It has been the observation of such cases as this, which has led to the popular and dangerous error of supposing all maniacs to be insensible to cold, and therefore not needful of shelter and clothing to protect them from the weather, — a position much at variance with fact, and the blind adoption of which has often been the cause of severe suffering.

The nervous functions may be *exalted*, as well as diminished by disease, and then sensibility becomes acute, and moderate cold, slight wounds, accidental injuries, and every sort of external stimulus, are attended with unusual pain and irritation of mind. The nerves may also be perverted in their *mode of action*, and the symptoms will then be strange sensations, as of animals creeping under the skin, of the legs being made of butter, or of glass, causing the patient to keep from the fire, and out of harm's way, for fear they should melt or be broken. From the same cause, particularly when, as explained in the first chapter, the parts of the brain more immediately subserving the external senses are simultaneously affected with the nerves, the senses of taste, hearing, sight, and smell, may be curiously perverted, and then odors are felt and tastes perceived, which no healthy organs can recognize; and occasionally both are so singularly perverted, that, as remarked by BURROWS and others, the most disgusting matters, even ordure,

are eaten, while the purest and most nutritive food is rejected. When sight is affected, flashes of light, insects, and mists seem to intervene and obscure the clear perception of the objects looked at. Hearing, however, is the most frequently deranged of all the senses, being sometimes very obtuse, and at other times so active, as to give rise to all sorts of imaginary sounds, as if some one was talking in the same room or near the patient. In all these cases, it is not the mere phenomena, but *departure from the healthy state of the function*, that gives it the character of a symptom, and bestows on it its diagnostic value.

The disturbances of *muscular motion* in insanity are various. Sometimes muscular power is tremendously excited, and the patient can scarcely be restrained by the combined efforts of several men. At other times the most perfect inertness and aversion to move are observed, and the patient preserves for hours, and even for days, not only the same situation, but the same bodily position. At other times, again, incessant activity and restless agitation are noticed, and the patient walks to and fro every day for many successive hours, taking many times the amount of exercise, which when in health, would have fatigued him almost beyond endurance. The dependence of these symptoms upon the condition of the nervous system, will be apparent to every one who recalls for a moment the bodily agitation, impatience of one position, and increased muscular power, consequent upon a fit of anger or of mental excitement, Occasionally, however, the muscular disturbance seems so disproportioned to the condition of the mind, as to afford good grounds for believing it to have its source in an affection of some cerebral or nervous part, more exclusively appropriated to voluntary motion. Perhaps in such cases the spinal marrow is directly affected.

*Hunger* and *Thirst* being mental qualities, are supposed on good grounds to have special cerebral organs,* disturbance of

* For some interesting remarks on this subject, by Dr. Hoppe, of Copenhagen, see Phrenological Journal, No. V. & VII.

the functions of which would explain all the symptoms, of which these appetites are the source. Sometimes the craving for food is urgent and incessant, and the thirst great. At other times both are too feeble to stimulate the patient to guard against want and abstinence: occasionally the appetite is depraved in quality, and the most nauseous articles are devoured with avidity, each variety of symptoms marking a departure from the usual or healthy state, but presenting no other fixed or common feature.

It is objected that Hunger, or the desire for food, is referrible exclusively to the state of the stomach. Facts, however, are against the objection. A certain condition of the stomach gives rise, no doubt, to the sensation of hunger, just as a certain condition of the eye does to that of light; but the sensation itself takes place in both instances in the brain. If we never experienced a desire to eat or drink, unless when the stomach required food or liquid, intemperance and disease would play a much smaller part in the drama of life than they actually do, and the cultivators of medical science would have a comparatively narrow field in which to employ their labor. Is it the stomach or the mind and brain of the child which sees the display in a confectioner's window, and excites the flow of the saliva in the mouth, and feels the ardent desire to partake? and is it the stomach or the brain, which, although satiated with the roast and the boiled, sees and craves for the pudding and the pie, when they make their *unexpected* appearance? If the stomach were the sole seat of appetite, we should never witness the apparent anomaly of excellent digestion existing without any desire for food; or great craving without the power of digestion; and yet both of these states are common in insanity. In my notes of Esquirol's Clinical Lectures, I find, for instance, a case mentioned by him, in which the patient felt neither hunger nor thirst, although, when desired to eat, she not only did so but *digested well;* while of her own impulse she would never have taken food at all. In other instances, again, the appetite is voracious, and the digestion exceedingly imperfect.

The symptoms arising from morbid action of the cerebral organs, subserving what are usually termed the *internal* faculties of the mind, are however the most numerous and interesting. The parts of the brain proved by Phrenology to have distinct functions may be estimated for the present at thirty-four, each serving for the operation and manifestation of a primitive faculty of feeling or of thought. When disease affects any one of these organs and disturbs its action, it, of necessity, alters the state of the mental function which it performs, and the power of feeling, or faculty of thought connected with it becomes deranged; and when disease disturbs the action of the whole brain, it, of equal necessity, alters the state of all the mental functions, and the whole mind becomes deranged. The *mental symptoms* of insanity must then be neither more nor less than the disturbance of the functions of one, or of several, or of the whole of the cerebral organs; or, in other words, derangement from the healthy state of one, of several, or of the whole faculties of the mind. Here the essential circumstance, be it observed, is the *disturbance from the usual healthy condition*, and not the mere fact of the faculty working in a certain way; and accordingly we have only to follow the phrenological division of the primitive faculties, and every mental symptom will fall almost of itself into the series of phenomena rising out of disturbance of its own function and organ.

The organ of *Amativeness* is established by abundant evidence, and many of the mental symptoms of insanity plainly consist in excitement, diminution, or perversion of its functions. If an individual, previously remarkable for correctness of conduct, and moderation of passion, becomes conspicuous for unusual impetuosity of desire, gross obscenity, and contempt of decency; or shows an unwonted and unfounded aversion to the society of the opposite sex; or rushes headlong into the indulgence of morbid and unnatural appetites, — these constitute so many symptoms of an unhealthy condition of mind, all bearing reference to the faculty above named. *Adhesiveness*,

which constitutes the bond of social and domestic life, is the fountain of another variety of mental symptoms. From excitement of its function, we see persons who, when in health, were no way remarkable for strong affection, displaying, as features of the insane state, a tenderness of attachments as husbands, a depth of filial devotion as sons, and an extent and disinterestedness of affection as lovers, which have no parallel except in romance. (PINEL.) From perverted and diminished function, we have, on the other hand, the common symptoms of dislike, aversion, or lukewarm indifference towards those formerly most loved. Pursuing the inquiry, we find in excitement of *Combativeness* the origin of many symptoms, such as the unceasing propensity to provoke, attack, and fight; the vindictive spirit of contradiction for the sake of quarrelling, and the incessant, mischievous activity mentioned by PINEL as characterizing the lunacy of a young man, who was naturally not only *gentle* and *peaceful*, but absolutely *timid*. And, as contrasts to this, we have numerous examples of men of distinguished courage manifesting, during insanity, a degree of timidity amounting to cowardice; both states equally proving the truth of our leading principle, that it is *the departure from the habitual modes of action of the faculty* which constitutes the sign of disease.

What is more common than to witness rage, violence, causeless revenge, thirst for blood and maniacal fury, all which are symptoms traceable to excited *Destructiveness?* Or; what difficulty is there in perceiving the relation of morbid cupidity and thirst for gain, to exalted activity of Acquisitiveness? There are few hospitals, indeed, which do not present one or more patients, whose eager appropriation to self of every thing within their reach, in utter opposition to their former character, is a direct symptom of their derangement. Frequently, however, the desire of property is impaired, and then the patient allows every thing to slip from his possession, but this also is as evidently a symptom of disordered function as the former. In the same light, in regard to the organ and faculty

of *Secretiveness*, are to be viewed the unexampled cunning and power of deceit acquired by some patients on becoming insane; while others, naturally shy and reserved, display an openness and a disposition to tattle, amounting to foolishness, which equally betoken the presence of disease. The assumption of fictitious dignities and despotic power, so common in the asylums of Europe, constitutes a class of symptoms directly emanating from excited *Self-Esteem*, as do also the deep-self-abasement and humiliation arising from its diminished action. *Love of Approbation* is in like manner related to that class of symptoms consisting of inordinate vanity, towering ambition, and passion for distinction, as well as to that which is occasionally observed, marked by a total and unnatural indifference to public opinion. *Cautiousness* is also the prolific source of many symptoms. In a large proportion of the insane, the existence of the disease shows itself first by unusual depression, melancholy, timidity, suspicion and apprehension. The patient lives in the constant dread of some terrible calamity, or despairs of his present or eternal welfare; while occasionally natural prudence of character is exchanged for headlong rashness and inattention. Even *Benevolence* contributes its share of symptoms, and seems to be the source of that generous liberality, sometimes apparent in insanity, which gives away all to others, and reserves nothing for self but the delight of bestowing. That numerous symptoms of insanity spring from disorder of the functions of *Veneration*, *Wonder*, &c., I need not, after the cases recorded, when treating of the exciting causes, stop to prove. Morbid activity of *Hope* and *Ideality* is manifested in those among the insane, who live full of hope and gaiety in an imaginary world, where every thing is bright and beaming with excellence and perfection. Dr. Willis particularly mentions a patient of his, who was impatient for the return of the paroxysm, from the happiness or perfect beatitude which it procured him; while it continued, he wrote poetry and prose with equal facility, and nothing in theory or in practice ever stopped him short. This state of feeling was

a symptom of disease, and always disappeared with the return of health. Many other authors notice the possession of a powerful poetical imagination during insanity, when, during health, the opposite was the natural state of the mind. *Conscientiousness* again is often diseased, giving rise as symptoms to feelings of remorse for imaginary crimes; to self-condemnation in all its various forms; and to an insurmountable scrupulosity in the daily occupations of life, causing a rigidity of adherence to thoughtless promises, which has been occasionally carried so far as to endanger life.

The symptoms arising from affections of the organs of the intellectual faculties are equally obvious. When the knowing organs, including those of Locality, Form, Size, and Color, are diseased, the lunatics see objects distorted, displaced, and of different colors from what they really possess. Many lunatics, says Esquirol, see the letters lying over upon each other, so that they cannot read; and they mistake their relations for strangers. How many, he continues, mistake the *volume*, the *form*, and the *weight* of the bodies which they touch! The greater part become, in consequence, unfit for any sort of handywork or mechanical employment, and for music and writing. These aberrations, it may be observed, cannot be attributed to the mere external organ of sense, because the eye-ball receives the luminous rays, and depicts the image on the retina as clearly and accurately as in health, and it is the mental faculties only that are unable to judge of the qualities of the image. If it was simply from an affection of the eye that the perception of form or of weight was imperfect, then the power of estimating these correctly by the touch ought to remain unimpaired; but the fact is the reverse. When the same faculties are inordinately excited by insanity, then a genius for mechanical pursuits is developed, which lasts only while the excitement continues, and, on ceasing, leaves the patient dull as before.

The organ of *Number* is sometimes separately diseased. A

young Englishman is mentioned,* who had a nervous attack every other day, during which he saw and heard nothing, as was verified by experiment, and who yet occupied himself particularly with mathematics, arithmetic, and logarithms, and solved with ease new and difficult problems: this seems to arise from the organ of Number being active when other mental powers were lost. Generally, however, the power of calculating is diminished. The organ of *Tune* is often found diseased in lunatics, giving rise to very singular manifestations in persons who in health had no musical ear. Dr. RUSH, PINEL, ESQUIROL, and many others, mention this fact. Dr. RUSH often visited, with great pleasure, a young woman, on account of her exquisite singing and poetical imagination, although before the invasion of insanity, she had *never* shown any talent for music or for poetry. Diseased activity of the organ of *Language* is often met with in a '*babil intarissable*' volubility and fluency of utterance, which are not soon forgotten by the victim on whom they have been inflicted, while at other times words are either misapplied or very sparingly at command.

As to the state of the reflecting faculties in insanity, there is abundant evidence to show that they may be diseased, untouched, or excessively excited, each state giving rise to a diversity of symptoms. They may be suppressed, excited, or deranged. When the reflecting faculties are morbidly excited, it constitutes what PINEL calls Reasoning Insanity, or *Folie Raisonnante*. FODERE, whom no one will suspect of phrenological tendencies, says, 'If the imagination offers for the most part nothing but disjointed sentences and extravagant actions, we are sometimes astonished at the elevation of ideas, purity of language, and *force of reasoning*, of some madmen, during the paroxysm, *who, in their ordinary health, were very ordinary men.*' 'JEAN HUART,' he adds, 'tells us of a page, whose faculties *were, up to the time of the attack, very limited*,

* Journal General de Medecine, vol. xl. p. 155.

but who, in a fit of insanity, believing himself master of the em pire, reasoned on the manner of governing it, in a way that astonished every body, and attracted many auditors less from curiosity than the desire of instruction; but, without laying much stress upon this fact, I may refer the reader to the works of Mead, Willis, Haslam, Cox, Pinel, and Esquirol, all of whom take notice of the singular changes brought about by disease in the operation of the reflecting faculties.

From the preceding exposition of the symptoms of insanity, it will easily be understood how the excitement of fever sometimes restores the idiotic and the imbecile to reason and judgment. When the infirmity of mind depends on weakness and inaction of brain, the febrile paroxysm raises the tone and activity of the latter to the pitch required for the vigorous exercise of its functions; and, so long as the stimulus lasts, the patient manifests talents and dispositions which disappear on its subsidence, and which stand in the same relation to his natural state, that delirium and extravagance occupy in regard to men of sound constitutions.

Having thus traced the origin of all the mental symptoms to diminution, perversion, or exaltation of some one or more of the primitive faculties of the mind, it becomes an easy matter to discover the source of their very partial and limited range in one case, and of the very variable and multifarious phenomena and sudden transitions apparent in another. If, as sometimes happens, only one or two of the mental powers are implicated, the patient is insane only on feelings or ideas related to these, and remains sound as to the objects and functions of all the other faculties, constituting what is called Monomania. If a group of organs, such as those of the moral sentiments, be disordered, then the derangement is characterized by excited, diminished, or perverted moral feeling, constituting in one form what is called Religious Melancholy. Another variety, from the same cause is melancholy from self-accusation, fear of eternal punishment, and morbid scrupulosity. If the moral and religious feelings, are *perverted*, then blasphemy and im-

precations take the place of the devotional and benevolent tendencies previously existing. If, on the other, the morbid group belong to the propensities, then passion, cruelty, suspicion, unceasing mischief, or furious mania, combined with a considerable amount of sound reason and moral sense, are to be observed; in which state, the patient, conscious of the danger to which others are exposed from the ungovernableness of his passions, and of the impossibility of resistance to their impulses on his own part, retains sense and feeling enough to warn the bystander to provide for his safety by flight.

Lastly, if all the organs of the brain are disordered, all the powers of the mind suffer. Natural feeling, moral restraint, and sound judgment are all upset, and the patient raves violence, blasphemy, and folly by turns; or passes, in the course of a few hours, through all the phases of outward character, from the tumultuous agitation of infuriated rage to the deepest dejection of melancholy; and it is in such circumstances that the remark of Esquirol, that mania, monomania, melancholy, and dementia, succeed and alternate with each other, the disease itself remaining the same, is especially exemplified.

From the preceding observations, it is impossible to overrate the importance of attending in time to all *morbid deviations from the natural character*, which do not give way on the disappearance or removal of the external cause which produced them. Their continuance, in such circumstances, can be the effect of nothing but diseased action; and it is a trite remark, that a complaint may be easily cured when proper means are had recourse to at its commencement, which, at a later period, may cost much time and labor to remove, if it do not, as too frequently happens, prove utterly incurable. It is the more necessary to watch these changes, that most lunatics, and especially females, succeed for a long time in suppressing all appearance of mental disorder. They often, as Esquirol justly remarks, 'struggle against their notions and their impulsions before any one can perceive either aberration of judgment, or the internal struggle which precedes the explosion of the deli-

rium. But long before an individual becomes palpably insane, his habits, his tastes, and his passions change. One, for instance, all at once assumes the deepest devotion, is present at a preaching, from which he comes away frightened, and believes himself damned: but the preaching would not have produced any such effect, if the disease had not previously existed.' * If, therefore, we observe a father of a family, who in his usual condition enjoys his home, delights in the society of his family, and communicates with each and all of them with friendly confidence, become, without sufficient external cause, either suddenly or gradually estranged from his domestic circle, shy, silent, or suspicious, sharp or irritable in temper, we may rest assured that, however clear his intellectual powers may remain, and however well he may conduct his affairs, that man is a prey to morbid action in the brain, and on the very brink of insanity. Another individual may indeed display equal suspicion, equal irritability, and equal displeasure with his family; but, if such be his natural disposition, or if causes exist to excite such feelings, the exhibition of these qualities will prove, not his insanity, but his perfect health. It is the change from the ordinary mental state that constitutes disease, and therefore, if, along with bodily symptoms, the latter, without any external motive, were to become unnaturally mild, open-hearted, and obliging, we would begin to suspect the approach of cerebral disturbance in him.

Where, as in monomania, only one or two faculties are disordered, the rest remaining sound, the patient is at first conscious of the aberration of feeling or of thought which it produces, and employs all his powers to suppress and conceal the slightest appearance of its existence. Frequently he accomplishes this so successfully, that he goes on for months unsuspected, except by very close observers, and then, under some casual excitement, losing command of himself, gives full and sudden vent to his delusion in an act of manifest insanity. This often happens in monomania; and, as the act itself may either be a mere

* Dictionnaire des Sciences Medicales, Article Folie, p. 196.

explosion of folly, of harmless passion, or of unaccountable apprehension and hatred, or be a direct infraction of the laws of morality, such as the perpetration of murder without an external motive, it behoves us to be extremely on our guard against condemning as a crime, what is in truth a *symptom* of insanity, and not to add the cruelty and ignominy of condemnation to the already severe visitations of disease. Dr. Marechal mentions a case in point to which I may refer.* A lady, unhappily married, nursed her infant for three months, when she became sad and taciturn, and was often in tears. One day, sitting near the fire, she exclaimed with eagerness and agony, '*Snatch the child from me, or I will throw it into the flames,*' and then confessed that for a long time she had been struggling against an almost irresistible impulse to destroy the child, and that, on approaching a window or fire, the desire always returned. The infant was taken from her: she became melancholy, and, lamenting her unhappy propensity, attempted suicide. She recovered; but three years afterwards had a relapse, and in the second month of nursing was seized with the same unnatural propensity, and, after resisting its force for some time, again parted with the child, and, horrified at her own condition, repeatedly attempted suicide. Many instances have occurred to show, that although, as in this case, the desire to destroy the infant was almost the first symptom of insanity, yet as reason seemed in other respects entire, the mother would have been executed as a criminal, had the act been accomplished, instead of being submitted to medical treatment to be restored to health.

While in the act of correcting the press, that active and able physician Dr. Otto, of Copenhagen, has sent, for insertion in the next number of the Phrenological Journal, an instructive case of the same nature, from which, although not yet published, I am allowed to give a very full quotation. Dr. Otto entitles it, '*Case of sudden propensity to murder and*

*Archives Generales de Médécine, vol. xii.

*suicide*,' and the narrative is as follows: 'FREDERICK JENSEN, workman, 37 years old, had for some time suffered from fits of giddiness, which always obliged him to keep hold of the nearest objects. In the spring of 1828 he lost a beloved daughter, which afflicted him very much. The state of his health was nevertheless *perfect, in mind as well as in body*, when he one day (Sunday, the 28th of September, 1828,) after dinner, told his wife that he would take a walk with his son, a boy 10 years old. He did so, and went with him to the green which encircles the citadel. When he came there, he now relates, a strange confusion came over him, and it appeared like a matter of absolute necessity to him to drown his son and himself in the waters at the citadel. Quite unconscious of what he was doing, he ran towards the water with the boy in his hand. A man, surprised at his behavior, stopped him there, took the boy from him, and tried to persuade him to leave the water; but he became angry, and answered that he intended to take a walk, and asked "whether any body had a right to forbid him to do so?" The man left him, but took the boy along with him. An hour after, he was drawn out from the water, into which he had thrown himself, and taken to prison. As he still showed symptoms of insanity, he was bled and purged; and two days after was brought into the hospital, and committed to the care of my friend Dr. WENDT, who has perfectly cured him, and who kindly afforded me the opportunity to see and to speak with the patient.

'He now very quietly tells the whole event himself, but is not able to explain the cause of his suddenly arising desire to kill himself and the boy, whom he loved heartily. This cause is only to be sought in congestion of blood to the brain, the same which before had caused his giddiness; and whether we adopt an organ of Destructiveness in the brain or not, it is to be assumed, that the propensity to kill himself and the son arose from a morbid excitation of a certain part of the brain. The disposition to congestion originated from a fall he suffered on the head in the year 1828.

'We ask, whether any body, in this case, would have admitted responsibility of crime, if the patient really had executed his plan to murder his son?' This case affords a good illustration of my preceding statement, that frequently the crime is only the first palpable sign of existing insanity, and shows the necessity of scrupulous inquiry being instituted, where an unnatural act is committed by an individual who would previously have revolted at it.

From the same power of long suppressing the appearance of aberration in conduct and in conversation, arises the acknowledged greater difficulty of curing monomania than mania itself. The symptoms are so long concealed, that the disease takes deep root before it is discovered, and even when it is found out, from the barbarous stigma attached to the very name of insanity, there is often great difficulty in subjecting the patient to the necessary medical and moral treatment; and hence, again, the grand importance of substituting attention to morbid changes of character in their earliest stages, instead of waiting for the full development of mental alienation.

Similar changes from the natural state of the nervous functions are observed in affections not involving madness, and it is proper to allude to them to show how closely all forms of cerebral and nervous disease are allied to each other. A gentleman far advanced in life, of a very active temperament, full robust constitution, strong feelings, large head, and apoplectic make, was attacked about a year ago, after some irregularities and exposure to the weather, with headache, giddiness, stupor, loss of memory, and other symptoms of fulness in the head, threatening the invasion of apoplexy. Moderate depletion and spare diet restored him, in a short time, to his usual health. No bodily decay was observable, but his dispositions and habits underwent a change. A certain roughness and violence of temper, into which he often fell, almost disappeared, and were replaced by increased kindness of manner, and unusual attention to the feelings and happiness of his family. He became mild and considerate of every one. At the same time

it was noticed that wine or spirits produced an unusually powerful effect on his brain, and that, from being able to indulge in either almost to any extent, he could now scarcely bear as much spirits as gave a taste to a glass of water, without feeling something approaching to intoxication. At the distance of a year from the apoplectic attack, on returning to the country after a good deal of fatigue in town, he was suddenly seized with rigors, sickness, low fever, and in three days died apparently from effusion in the head, and general breaking up of the constitution. I had then no opportunity of seeing him; but, taking the change of character in connexion with the attack of the preceding autumn, and the unusual susceptibility of the stimulus of spirits, it can hardly be doubted that an affection of the brain had been going on all the time, and appeared in an acute form only a few days previous to his death. A change of character like this certainly does not imply what is generally called derangement of mind; but it has the feature, in common with the latter, of being the result of morbid cerebral action; and it is on this account that I have submitted it to the consideration of the reader, as proving the tendency of all cerebral affections to disturb, in one way or another, the usual mental feelings and habits of the patient. The changes of character and dispositions induced by a cerebral disease, are, it must be admitted, more frequently to the worse than to the better, because the organs of the propensities are more frequently the seat of morbid excitement than those of the moral sentiments. The preceding case is, however, one example only of many which may be adduced, in which the higher faculties of our nature shine out with a brighter lustre than was observable during health. Every extensive asylum offers proofs of this fact; and Dr. Rush expressly remarks, that he has more than once heard the most sublime discourses on morality in the cell of an hospital, and asks who has not seen patients discovering degrees of benevolence and of integrity during their insanity, which were not natural to them in the ordinary course of their lives?

In civil and in criminal trials, physicians have been called in to fix the line of demarcation between insanity and the minor forms of mental disease; but, in practice, the attempt has never been attended with great success. If the principles we have been advocating be true, this must ever continue to be the case. In no organ of the body, however intimately we may be acquainted with its structure and functions, can we always chalk out a marked line of distinction between the various morbid affections to which it is liable. The slighter kinds run, by such imperceptible degrees, into the more permanent and severe, that we are daily unable to determine the point at which the malady stands, and it is often by the event alone that we are enabled to form an accurate opinion. Many cases are, no doubt, so unequivocally marked that we have no hesistation in determining the extent and nature of the disease. But it is not always an easy matter. For, at one time, an affection, apparently of a trivial kind, suddenly assumes the destructive energy of a deadly disease; while, at another, an affection, which has commenced with every mark of severity, changes into a state scarcely deserving the name of morbid. We observe, also, that all the organs are liable to disorders of the most widely different periods of duration. Sometimes, like as in an epileptic fit, convulsions, cramp in the stomach, palpitation of the heart, or common syncope, the affection is sudden and severe, but of very brief duration. And, at other times, as in dyspepsia, tabes mesenterica, or phthisis, the evil is of little apparent urgency, but is, nevertheless, as deadly in its results as it is slow in progress.

Viewing the brain and nervous system as the material organs, whose functions are to minister to sensation and to motion, and to manifest the various faculties of the mind; and considering the morbid condition of the organs, and not the consequent disturbance of function, as constituting the disease, we shall advance in our inquiry with greater consistency, certainty, and facility, than if we had no such principle to guide us. The brain being a constituent part of our organized frame,

and subjected to all the laws of animal life, exactly as the other parts of the system, are, its morbid affections present precisely the same characteristics, modified of course by its peculiarity of structure and function, but still essentially the same; and it is very important for the proper understanding of its diseases, that this analogy should be kept in view. In the dulness and inactivity of mind which now and then beset all of us, we have the counterpart as regards the brain; of the impaired appetite and digestion, as regards the stomach; which often come on without apparent cause, and again disappear. The gradation, indeed, from the mere accidental ill-nature and depression attendant on a fit of bile, to the boisterous passion and insane reasoning of the maniac, is gentle and unbroken; and it is frequently as impossible to detect the points of transition from one stage to another, as we have seen it to be in affections of other parts. One patient will require advice, who has no complaint to make, except of being unusually *cross and impatient*. This is a low degree of cerebral disorder, depending most frequently on intestinal irritation, and in a few days it is removed. Another, in addition to these, may complain of headache, restlessness, inaptitude for labor, and depression of spirits; and in two or three weeks be restored to health by proper treatment. A third may go through the same stages as the preceding, till he becomes perfectly miserable in his feelings, disgusted with business, and even with life, and yet be able to go through his regular duties, and, after the lapse of months, be gradually restored to his former health. A fourth only pass through the same round as the third, and, instead of recovering, may, after a time, lapse into suicidal mania, or profound melancholy. A fifth may, under strong excitement, give way to manifestations of passion, and singularities of thought, which we are accustomed to meet with only in insanity, and yet recover himself when the cause has ceased to operate; or, if he be highly predisposed, and the excitement have been very powerful, he may make a sudden transition from perfect health of mind to decided madness. And a sixth,

from a fracture of the skull, or the invasion of fever, may pass almost at once, from tranquillity and rectitude of mind, into violent delirium. But no one can pretend to point out the exact line at which the one of these states merges into the other ; and, besides, it would serve no practical end to do so, as the principle of treatment that was suited to the minor degree, would require only to be extended to meet the increase, and not altered to meet a change in the nature, of the disease. It is only in deciding on the civil rights of the patient that a distinction is required to determine how far he may be capable of the management of his own affairs ; but even here general descriptions and diagnostics will never apply, and each case must be made to rest on its individual merits.

No greater service could be done to the public, than to make them so far acquainted with the constitution of their own bodies, as to show them the necessity of seeking assistance in the very earliest dawn of mental disease. But this object is in a great measure defeated by the broad, though arbitrary line of distinction commonly drawn between madness and other less serious and more temporary disorders of the mental functions, and which prevents us according either sympathy or assistance to what are often in reality only minor degrees of the same malady, till, either from neglect or maltreatment, the patient is placed beyond the reach of remedial measures. Nothing is more common in society, or at least in the intercourse of private friendship, than to hear complaints of the most severe mental suffering arising from morbid alterations of feeling, in every respect analogous to those which occur in insanity, acknowledging the same causes, accompanied by the same symptoms, and requiring the same method of cure ; and yet few pay any further regard to them than perhaps to smile at the sufferer, or assure him that he is perfectly well, and has no reason whatever to be unhappy ; and it is only when, by the extension of the disease to a greater number of faculties, and to a larger portion of the brain, or by an increase of its severity, reason becomes so palpably unsound as considerably

to affect conduct, that the friends take alarm, and regret their former inactivity and apathy. In many cases, indeed, the aspect the disease is to assume seems entirely to hinge on the existence or non-existence of a predisposition to madness. For although it is common to witness complete recovery from all hypochondriacal affections, where there is no hereditary taint, it rarely enough happens that a severe attack is cut short in a hereditarily predisposed subject, without having run the course of mania or melancholy; and, in point of fact, a large proportion of the cases of suicide, with which the columns of the English papers are constantly filled, occurs in persons suffering from that class of mental affections, which are habitually treated in society as imaginary, but which differ almost in nothing except in extent, or the number of the symptoms, from downright insanity; and, in consequence of the false light in which they are viewed, occurrences of this kind often come upon families with the unexpected suddenness of an electric shock, when the slightest reflection on sounder principles would have shown them many previous indications, soliciting as it were, the exertion of watchfulness and active medical treatment for their prevention.

Facts like these, considered with the eye of reason, bring us always back to the evils arising from erecting a particular mental state into a disease, and regarding every lesser degree, and every other modification of mental symptoms, either as sanity, or as an affection distinct from insanity, when due inquiry into the bodily cause would have satisfied us that the difference was in some instances one of degree only and not of kind, while in others, considered by us as dissimilar, the morbid action was in fact identical. I well remember the almost agony of mind endured by a gentleman, who conceived that he had lost all power of feeling, all sense of attachment to his family, and all talent for business or for reading; and longed so much for death to relieve him from his miseries, that with difficulty he avoided suicide, but who nevertheless went about managing his affairs as usual, and was regarded by many of his friends,

as having become causelessly whimsical. He was not insane, in the ordinary sense of the word, because, in his speech and in his actions, he still comprehended the relations in which he stood to his family and to society, and fulfilled the duties of them as before, except that he did not take the same delight in the occupations and amusements of his children as he was wont to do, although he was equally anxious for their welfare; but in every other respect his condition was analogous to that which constitutes insanity. He displayed the same sleeplessness, restlessness, and irritability, — the same local heat and painful sense of constriction in the head, — the same glistening and unsettled expression of the eye, — the same settled melancholy of feature, — the same aberration of some of his feelings, and soundness of others, — and the same errors in judgment in matters which roused those feelings; showing clearly that the cerebral state was in reality the same, although perhaps affecting different cerebral organs; that the *disease*, in short, was the same. And accordingly, the same principles of treatment were adopted, and with the same beneficial effects, as in pure insanity.

## CHAPTER VII.

### DURATION, PERIODICITY, AND SYMPTOMATIC FORMS OF MENTAL DERANGEMENT.

The advantage of attending to the earliest departures from mental health, is also strongly indicated by a reference to the table published by Esquirol, illustrative of the duration of insanity. It is impossible to look at that table, and to contrast the large number cured within the first few months, with the number in which the derangement has been protracted for years, without having the question brought before the mind, — on what do these differences depend? The experienced practitioner will unhesitatingly answer, that, next to the non-existence of hereditary predisposition, early treatment is the chief circumstance, and this is proved even by the description of cases, which all agree in considering as most likely to recover. It is now generally admitted, that maniacal cases, or those of a violent character, recover most readily; while those of a melancholic, monomaniacal, or partial kind, are the most difficult of cure. Looking at the state of the mind alone, these results are the opposite of what we should have expected; but the reason is apparent enough, on examination. In maniacal attacks, the patient is so violent, that almost from the first dawn of the disease, attention is roused to his condition; and the paroxysm has hardly set in, before his friends eagerly seek for assistance. But in melancholy and in monomania, the

symptoms are so equivocal, and so much resemble mere depression of spirits, eccentricity or caprice, that nobody places any stress upon their appearance, and the disease has been allowed, as it were, to fix itself long before advice is sought.

Viewing, then, the cerebral affection, and not the mere mental aberrations above enumerated, as constituting the disease, we have no difficulty in tracing the connexion existing between all nervous affections, and all forms of mental derangement, from convulsion and delirium downwards; or in perceiving that in numerous instances they are divided from each other only by an arbitrary line, which in practice we cannot recognize. Nervous affections and insanity pass into and produce each other, and thus we have not only every mode of mental disturbance allied to the rest, but we have them all of the most different degrees of duration. In some circumstances a furious maniacal paroxysm may be entirely over, and the health restored in a few days; while a less severe hysterical, or hypochondriacal or epileptic affection, with depression, irritability, and weakness of mind, may continue for months, or change into insanity or dementia. In its shorter, and especially in its milder attacks, derangement often passes under other names, such as depression of spirits, melancholy, or imaginary illness, but the affection is essentially the same as in the most protracted cases. I have seen several individuals who, under strong exciting causes, presented every symptom of aberration, bodily and mental, but *who were not predisposed* to regular insanity, recover their usual health and comfort within a few weeks, without leaving home, or being placed under any restraint, except the unperceived watchfulness of sensible friends, and who, if they had happened to be a little more violent, or to have been seen by a physician unacquainted with their entire history, would most probably have been sent to an asylum, and there fitted by vexation for the confinement put upon them. Many of the cases of nostalgia related by Baron Larrey, seem to have been of this nature, and in several, recovery took place so completely, under well-directed treatment, within a

few weeks, that the patients had no longer even the desire to avail themselves of the furloughs which he had procured for them.

Speaking generally, the duration of insanity is in relation to the cerebral state from which it originates, and to the circumstances which act upon it. Cases from hard drinking last from a few days to a week or two. Those occurring after parturition are also of short continuance. In ordinary mania, great differences are observed according to the stage at which treatment is begun, and the influence of external situation. Esquirol illustrates this by a table, showing, that out of 269 cases, twenty-seven recovered the first month, thirty-two the second, eighteen the third, thirty the fourth, twenty-four the fifth, twenty the sixth, twenty the seventh, nineteen the eighth, twelve the ninth, thirteen the tenth, twenty-three after one year, and eighteen after two years; while both he and Pinel mention cures which took place after ten, fifteen, and even twenty-seven years of furious mania. Within the first six months we have thus 151 recoveries, and within the first eight months 190, or nearly four-fifths of the whole. But favorable as these results are to early treatment, they still represent the mean duration as greater than other facts would warrant our believing it to be. It is no doubt true that the great majority of patients under confinement remain many months in the asylum; but it must be taken into account that the malady has in almost all of them been going on for weeks, for months, and even for years, before reaching the degree of violence that rendered seclusion imperative; and that there is scarcely an asylum existing which can boast of being able to supply the means necessary for recovery, or directors who possess a sufficient knowledge of the principles requisite for the most successful application even of the means in use. Practitioners of every school and country testify to the advantages resulting from early treatment, and the records of some institutions would lead us to suppose, that, were advice to be required as soon as a change in the habits and dispositions of the patient indi-

cated the approach of disease, nineteen out of twenty might be restored to society, and in a much shorter time than is now required.

Broussais, indeed, most positively affirms, that the Physiological Physicians, as he calls his own disciples, can cite numerous cases in which bleeding, and especially leeches applied during several consecutive days, have cut short incipient mania, and restored the patients to reason as quickly as we are accustomed to see pneumonia or gasto-enteritis removed by blood-letting;* and he remarks, that facts previously existed which might have led us to the same conclusion; for, according to Desportes, the medium duration of curable cases was formerly only *fifty-five* days, while in 1822, at the Bicêtre, it was 130 days for the males, and, at the Salpetrière, 145 days for the females; and he therefore infers, that more active employment of medical remedies is much wanted. I have not been able to see a copy of Desportes' publication; but, even if the results at all approximate to the above statement, the inference of Broussais is most correct and instructive, and calls loudly for instant attention.

Judging from the numerous cases to be met with in the works of authors — from such as those related by Baron Larrey, and from the affections we meet with in ordinary medical practice, which so closely resemble insanity in every essential respect, that by almost every observer they are ranked in the same class, and which differ only in their occurring in persons not hereditarily predisposed — the conviction becomes irresistible that a large proportion of maniacal cases admit of a comparatively speedy cure from an EARLY and well directed application of remedies; and that it is only where, from ignorance, false shame, or some other unworthy motive, the disease has been allowed to go on for a long time unchecked, and seriously to affect the constitution, that it becomes so untractable as we find it to be in most of the patients brought to

* Lib. cit. p. 513.

lunatic asylums for treatment. If the baneful prejudices which have been so long prevalent regarding it were once removed, and, instead of resorting to every sort of concealment and mystery, relief were sought at its earliest dawn, as is done in other diseases, there can be no doubt that society would suffer infinitely less from its now wide-spreading influence, and that cures would be greatly more numerous, more certain, and more speedy, and greatly more permanent, when once accomplished.

A remarkable feature in the history of insanity which deserves to be noticed, as connecting it still more closely with the affections of the nervous system, is its tendency to intermit, and even to observe regular periods. The paroxysm, after having continued for weeks or months, will often cease in the course of a few days, and the patient be restored to reason for a longer or shorter time; after which, without any obvious cause, the symptoms will return with as much violence as at first. Some maniacs can tell very accurately whether the fit be really over, and whether they may safely be left without restraint; and also at what time, towards the end of a lucid interval, they cease to feel confidence in their own powers of restraint. But however calm and rational the patient may appear to be during the lucid intervals, as they are called, and while enjoying the quietude of domestic society, or the limited range of a well-regulated asylum, it must never be supposed that he is in as perfect possession of his senses as if he had never been ill. In ordinary circumstances, and under ordinary excitement, his perceptions may be accurate, and his judgment perfectly sound; but a degree of irritability of brain remains behind, which renders him unable to withstand any unusual emotion, any sudden provocation, or any unexpected and pressing emergency. Were not this the case, it is manifest that he would not be more liable to a fresh paroxysm, than if he had never been attacked. And the opposite is notoriously the fact; for relapses are always to be dreaded, not only after a lucid interval, but even after perfect recovery.

And it is but just as well as proper to keep this in mind, as it has too often happened that the lunatic has been visited with the heaviest responsibility for acts committed during such an interval, which, previous to the first attack of the disease, he would have shrunk from with horror. It cannot be said that, in such a state, a person is not responsible at all; but every allowance ought certainly to be made for the unusual excitability of his system; and, if we cannot discover the exact line of justice, we ought to incline the scale to the side of charity rather than to that of cruelty. The friends of the lunatic, for the same reason, cannot have his real condition too strongly impressed on their minds; for they would then be not only much more forbearing in resenting petty provocations, but much more careful to withdraw the patient from all causes of anxiety and irritation, and much more kind and considerate in the treatment of his feelings. The power of a cause to excite disease, must always be estimated with reference to the state of the constitution on which it operates, and, observing this relation, we perceive how strongly trifling quarrels or domestic dissensions may rouse the passions of an individual, whose brain is weak from the previous attack, and how easily he may, in this condition, and under a sudden impulse, give way to the most irrational and disgraceful conduct, and yet be the first to accuse and condemn himself after the passion is over. Precisely the same liability to recur on slight causes, is noticed in all nervous affections. Epilepsy, hysteria, convulsions and neuralgia, when they have occurred once, are always more easily excited, however apparently recovered the subject of them may seem to be, than if they had never happened before.

The diseases with which insanity is most frequently complicated, throw light upon its seat and nature, and all of them have reference to the brain and nervous system, and present many features in common. Among these, apoplexy, palsy, epilepsy, hysteria, convulsions, and febrile delirium, deserve especial notice. Esquirol considers apoplexy to be as one to six in the list of physical causes; and, when it does occur

the chances of ultimate recovery are held to be very small, because it always indicates organic disease. Mania, complicated with epilepsy, is also known to depend so generally on disorganization within the head, that it is regarded as almost incurable, and, for a similar reason, the supervention of paralytic symptoms is considered in the same unfavorable light; while the appearance of hysteria, or of such forms of nervous disorder as are known to proceed from functional derangement, are justly viewed as affording a presumption that the mental affection has a similar origin.

Some of the more common forms under which mental alienation shows itself, remain to be noticed.

The first of these, or Idiocy, is sometimes the result of deficiency in the size of the brain, and is indicated by the external development of the head; and at other times of disorganization of its substance from disease, which is not distinguishable by form or size. Idiocy from defective brain is most frequent, and is perfectly incurable. In some instances the deficiency extends to the whole brain, and to the whole of the mental powers; while in others it is limited to one region of the brain, and to one department of the mind. Sometimes, for example, the frontal region of the head is small, low, and compressed, and the intellectual faculties extremely limited, while the organs of the sentiments and propensities being pretty well developed, considerable tact and correctness of feeling and of conduct in simple matters are observed; but a glaring deficiency becomes obvious the moment that the individual is thrown into a situation requiring the aid of intellect. Occasionally a single mental organ and faculty are possessed in considerable endowment, all the rest being deficient. Among the Cretins in Switzerland, examples of this kind are not uncommon. Many of them imitate or play on musical instruments with considerable success, and some are employed by the watchmakers of Geneva to construct the simpler parts of the machinery, which they do with neatness and dexterity, and yet in every other respect are

purely idiotic. I am indebted to the kindness of a friend for two prints of drawings, made some years ago by a Cretin named *Mind*, which are curious, as having been cleverly executed by a being extremely deficient in every intellectual power. Instances have occurred of individuals who excelled in the acquisition of languages, and could tell the eqvivalent of any word in five or six different tongues, and yet were so sparingly endowed with general intellectual talent, that they could not put two ideas together, or trace the most obvious logical sequence offered to their notice.

Sometimes the largely developed organ is one of those appropriated to the manifestations of the moral sentiments or propensities; in which case, instead of an intellectual talent, some strong feeling or sentiment marks the character. Dr. Rush gives an excellent example of this in his Medical Inquiries. 'I once saw a man,' he says, 'who discovered no one mark of reason, and yet possessed the moral sense or faculty in so high a degree, that he spent his whole life in acts of benevolence. He was not only inoffensive (which is not always the case with idiots), but he was kind and affectionate to every body. He had no ideas of time but what were suggested to him by the return of the stated periods of public worship, in which he appeared to take great delight.' I have seen two idiots differing much in other respects, who agreed in having a predilection for religious worship, and for listening to sermons and prayers. In both, very large organs of Veneration were found in combination with an extreme deficiency of all the intellectual organs, except language, which was large in one of them, and he was fond of repeating, with perfect solemnity of tone, what he considered to be the words of the clergyman, but which were in reality nothing but incoherences, possessing a slight resemblance in sound to the original. In other instances, Self-Esteem, Secretiveness, Amativeness, or some other of the propensities, is very vigorous, and the corresponding faculty seems then to constitute the mind.

Idiocy and partial talent may thus co-exist where the general mass of the brain is defective, and a single organ, or group of

organs is comparatively large; and, as questions involving the property and happiness of families are continually occurring, the right solution of which can be obtained only by determining accurately the mental capacity of the individual, whose will or deeds are sought to be annulled, it is of great importance to have adequate means of forming a sound judgment. Phrenology is of very great use in throwing light upon such cases; and it is impossible to think of the evidence and jarring opinions given by witnesses in testifying to the extent of a man's mental resources (every one being necessarily influenced by personal impressions in the absence of a surer standard), and to experience the facilities afforded by Phrenology, for arriving at a clear, sound, and consistent result, without feeling deeply interested in its progress, and without feeling and lamenting that the very magnitude of Dr. GALL's discovery should be one cause of the aversion of his contemporaries to inquire into its truths, and avail themselves of its advantages.

As an instance in point, I may allude to a case of partial incapacity, which was not attended with much difficulty to the phrenologist, but which, from the conflicting nature of the evidence, gave rise to much litigation, and proved a source of anxiety and trouble to both parties. The individual was a young man, B——, educated for the church, and who had acted as Latin and Greek tutor for several years, and passed his first examination on languages before the presbytery with perfect success, but who failed utterly on proceeding to his second trial, in which reasoning and general intellectual power were more especially required. B——'s cerebral development presented a large endowment of Language, and some of the perceptive faculties, with a great deficiency in the upper part of the forehead, where the organs of the reflecting faculties are situated. Among the propensities, Acquisitiveness, Secretiveness, and Self-Esteem, were largely developed; but the brain was, in other respects, greatly below the average; so that, while B—— was able to learn, and even to teach Latin and Greek, and displayed keenness and adroitness in driving

a bargain, he was obviously deficient in the higher powers of mind, and unfit for the ordinary business and duties of life. Those, however, who came in contact with him only as a scholar or as a purchaser, and found him their match on these points, supposed him to possess the other attributes of mind in equal endowment, and therefore certified, without hesitation, that he was an able and clever man; while those who had occasion to test his powers of reflection and general talents, pronounced him, with the same same confidence, incapable of business. Phrenology at once explained the cause of contradiction in the very unequal proportion of the brain in B——; and had its assistance been resorted to at the first, a great deal of irritation of feeling and expensive litigation would have been avoided.*

In like manner, in the Portsmouth case, many of the difficulties would have been removed by the application of the principles of Phrenology to the determination of the extent of mental capacity really possessed. The Earl's head affords a very accurate index to the intellectual and moral qualities, in their respective states of deficiency and endowment.

Occasionally idiocy is the result of disease affecting the structure of the brain, and then the size and form of the head affords no clew to the degree of intellectual power which still remains. Cases of this kind used to be more common when small-pox was very prevalent, than they are now; but they are still sometimes observed as consequences of hydrocephalus and other cerebral affections, and sometimes also of over-tasking the mind at school.

Dementia is another form of mental affection, not in itself a distinct disease, but arising from a variety of pathological states, each requiring a corresponding treatment. It is characterized by general weakness of mind, involving all the faculties equally; and it is commonly observed as the result of

* For an account of this case, see Combe's System of Phrenology, 2d edit. p. 499.

mania of long standing, or of that form of insanity which is complicated by paralysis or epilepsy, or as a sequel of fever. Sometimes, however, it appears from cerebral debility more than from the continuance of actual disease, and then recovery may take place. In the asylum at Milan, cases of dementia from inanition, and which are cured by nourishing food and tonics, are not rare; but, in ordinary circumstances, its appearance indicates incurable disturbance, or actual disorganization of the brain.

Monomania or Melancholia is the designation given to another combination of mental symptoms, but which is not indicative of a specific disease. These terms are applied to denote those cases in which only one or a few of the mental powers are deranged, the others remaining entire. But, as already explained, a disease may involve one organ or several without any change of nature; and, therefore, the pathological cause which, affecting one organ, produces monomania, may, by affecting the whole brain, produce general mania, and its nature remain all the time the same. Inflammation, for instance, continues to be the same disease whether it affects a whole lung or is confined to one of its lobes, and consequently the primary cause may be identical in mania and in monomania, and require the same mode of treatment; and hence we find, accordingly, all authors testifying to the frequent transition from the one to the other as indicating no change in the original disease.

The varieties of monomania known by the names of Religious Melancholy, Hypochondriacal Depression, Nostalgia, Suicidal Mania, &c. have been already accounted for, in tracing the relation of the mental symptoms to aberration of function in the primitive powers of the mind, as unfolded by Phrenology. Much remains to be done in perfecting this branch of knowledge; but the principle being ascertained, future progress will be more rapid.

After the preceding observations, I need hardly remark,

that general MANIA is not a specific disease, but merely an indication that the disease, whatever it may be, implicates the whole brain, and all the faculties of the mind; but it by no means informs us what the kind of morbid action is which is going on in that organ.

When the morbid affection is strictly limited to one or two of the cerebral organs, it often becomes exceedingly difficult to establish its existence in a court of law, as the patient has often a great degree of control over his manifestations, and displays wonderful adroitness in avoiding any exhibition of his infirmity. In regard to the assistance afforded by Phrenology in such cases, the same remarks apply as in partial idiocy, and therefore need not be repeated.

## CHAPTER VIII.

### APPEARANCES ON DISSECTION AFTER MENTAL DERANGEMENT.

Insanity being the result of various pathological states, and of various degrees of morbid action, may terminate in a variety of ways. The cerebral affection may be purely functional, and, after going on even for years, recovery may take place ; it may alternate with diseases of other organs ; it may end in idiocy ; or, after bringing on disorganization within the skull, accompanied by palsy and the suppression of all mental manifestations, it may terminate in death. But in every form, and in every transformation or termination, its close connection with the nervous system is constantly apparent.

It has been said, and with much plausibility, that if the brain is so uniformly the seat of insanity, we ought, on dissection after death, to discover traces of its existence ; but that, on the contrary, not only has no appearance characteristic of insanity alone been observed, but it often happens that no vestige of any kind of cerebral disease can be detected, even after violent mania : while, on the other hand, extensive disorganization is found in cases in which, during life, the mental manifestations continued to the last unimpaired ; and the conclusion has been drawn, that cerebral disorder is not essential to the existence of madness, and that the true cause and seat are

to be looked for in the digestive organs, in the circulating system, or in the quality of the fluids.

The above statements are perfectly accurate, but we must make distinctions before hastening too rapidly to the inferences deducible from them; for sufficient attention has scarcely been paid to two widely different classes of cases, in which morbid alterations of structure have been sought for after death: These are, *first*, cases in which a fatal termination has occurred from the supervention of other *accidental disease*, the mental affection having continued unchanged; and *second*, those in which the result has arisen *from the progress of the mental derangement, and the bodily changes on which it depends.* If we keep these distinctions in view, it will be found that the exceptions to the general rule are much more rare than has been imagined.

Mental derangement, like most other affections of the nervous system, is known generally to depend on *functional* disorder, so called because the symptoms seem to arise from a change in the *mode of action* of the organ, unconnected with any perceptible alteration of structure, although, from the very disturbance of function, it cannot be doubted that an affection of some kind or other, of the organ exists. Suppose, then, that a lunatic in this stage of insanity were to be cut off by an attack of inflammation, or of any other malady distinct from derangement, it is quite obvious, that, on opening his body after death, we should discover no *organic* lesion, giving rise, or corresponding to, the mental aberration. This occurrence is exemplified in functional diseases of other parts of the body, in which, even where the severity of symptoms during life indicated excessive disorder, still no morbid appearances can be detected after death. But, analogous as these circumstances are, the inferences commonly deduced from them are widely different. On finding no alteration of structure in the case of other organs to which the symptoms manifested during life can be ascribed, instead of concluding that no affection of them had really existed, we are accustomed to infer that the morbid dis-

turbance indicated by the symptoms had been functional only, and not organic. While from the same premises, in the case of the brain, we often consider ourselves warranted to infer that that organ has not been at all affected, and that the disease has had its seat in the abdomen, or in the circulating system. And yet no reason has been assigned why the brain should, in its morbid affections, follow a different law from that which is applicable to the stomach, heart, or lungs. I allude here not to secondary or sympathetic disorder, but to such affections as are undoubtedly primary, and it seems to be utterly unphilosophical and unreasonable to suppose that the same premises can warrant contradictory deductions, merely because the organs to which they refer are situated in different parts and execute different functions.

In accordance with these views, if will be found that most of the cases in which dissection after death does not reveal some cerebral lesion, are those in which the patient has died from another and distinct disease, supervening upon derangement while existing in its *functional* and curable state; and from the advances lately made in morbid anatomy, it is very probable that, *even in these cases*, a minute acquaintance with the structure and healthy appearances of the brain, and a more careful and scientific examination of its condition after death, will ultimately enable us to detect changes which either escape our observation, or are considered not to have any reference to the mental state. At present it is admitted on ali hands that great ignorance in regard to both the structure and functions of the brain is prevalent; and while this continues, we cannot but be very imperfectly acquainted with its pathological alterations.

If, however, we examine the numerous cases in which the mental alienation has arisen from a species of morbid action, involving organic changes by its simple continuance (and such are the examples of chronic meningitis narrated by Bayle,) or in which death has proceeded from the mere progress of the insanity, in consequence of the malady on which it de-

pended having gone so far as to be incompatible with life, we shall generally meet with unequivocal traces of cerebral disease in the various forms of changes of color, of consistence, or alterations of structure; and in such cases we naturally meet, also with the symptoms characteristic of these changes, such as palsy, imbecility, &c. superadded to those of pure insanity. Such, at least, are the results at which I have arrived, and they seem to be so accordant with what occurs in other organs, as to present no unusual difficulties to the pathologist.*

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* After the above observations were printed, I had an excellent opportunity of verifying their general accuracy still farther, by a visit to one of the largest and best managed establishments in the kingdom, viz. the Lancaster County Lunatic Asylum, which contains upwards of four hundred patients, of both sexes, and of every description, and which affords a rich field for investigation. Mr. DAVIDSON, the house-surgeon, has examined, with much care, the bodies of more than two hundred patients, who have died in the hospital since his appointment, and the result is, that he has scarcely met with a single instance in which traces of disease in the brain, or its membranes, were not evident, even when the lunacy was recent, and the patient died of a different disease, and in so far he goes even beyond my statement in the text. The pia mater and cortical substance are the parts he has found most frequently in a morbid state. The former generally injected, thickened, covered with coagulable lymph, or unusually adherent to the cineritious matter beneath, which tears off with it, leaving a rough unequal surface. Changes of color and of consistence, and adhesion to the pia mater, are the changes most commonly met with in the cineritious substance, but not so constantly as FOVILLE describes. These affections are sometimes extensive, and at other times partial, and occupying a small portion only of the membranes or cerebral surface. Mr. DAVIDSON has found the fornix, and others of the deeper seated medullary parts, in a state of ramollissement; but, speaking generally, morbid appearances are much more rare in the fibrous than in the cortical substance and membranes. The minuteness and care with which Mr. DAVIDSON conducts his examination, account for his seldom failing to discover some palpable traces of disease. At the time of my visit, he had just removed a brain from the skull, so that I had the advantage of having his experience explained by a reference to nature.

I cannot leave this subject without expressing my acknowledgments to Mr. DAVIDSON, for the kindness and readiness with which he showed me the arrangements of the Asylum, and communicated every information in his power in regard to the treatment and moral management of the patients, If every practitioner in charge of the insane had the kindness, zeal, activity and talent of Mr. DAVIDSON, it would be well for the future progress of medical science.

Neither the severity, nor the duration, of the mental affection, it must be recollected, is any proof of its not being functional, and, consequently, producing no appreciable alteration of structure. We have innumerable examples of severe stomachic disorders continuing for years, or even causing death itself, without having given rise to perceptible disorganization; and in the instances of death from cramp in the stomach, we can rarely perceive any morbid appearances characteristic of that affection. In the same way, the heart is often the seat of functional disorder for many months without any organic lesion being induced. The brain is subject to precisely the same laws of animal life as the heart and the stomach, and nothing therefore can be more natural than that it should be subject to functional disorder as well as they; and that, if death should occur while that disorder is going on, it should leave no perceptible trace of its previous existence in its structure or appearance.

Let it be said that the violence of a maniacal paroxysm must arise from something more serious than functional disorder, we find an appropiate answer in the history of other affections of the nervous system, which are unquestionably of that description. The disturbance of mind, and violence of convulsive movement which occur in hysteria, sometimes equal in severity any thing seen in insanity, and yet they are so purely functional, that in a few hours the patient may be in his usual health, and in full possession of all his powers. Such, indeed, is the fearful disorder sometimes occurring in hysteria, that were any one who had never heard of it to see it for the first time, he would never expect the patient to recover. Tetanus is another malady of the nervous system, which is so severe, as almost inevitably to end in death, and yet it has hitherto baffled every attempt of the morbid anatomist to reveal its organic origin; and which is, on that very account, still called functional.

It must be admitted, then, that dissection has not revealed any morbid condition of the brain peculiar to and characteris-

tic of insanity; but it is also true that in this respect it offers no exception to the other organs of the body, in which diseases occasionally occur violent enough to induce death, without leaving any vestige behind.

Another very obvious reason why mental derangement presents no appearances peculiar to it alone is, that it is not always the same disease. The starved sailors wrecked in the Medusa, and the ill-fed peasants of some districts of Lombardy, became maniacal from want, while many become so from excesses of an opposite kind. Most of the patients in the situation of the former are cured by wholesome food, and many of the latter by depletion and reduction of diet. But supposing some of each kind to die (both of course *insane*,) would it not be inference of a madman to expect both to exhibit similar states of disease in circumstances so different? Assuredly it would, and if the corporeal cause is thus different in different cases, it is manifest that we shall never be able to detect the same appearances in all.

It is sometimes urged against the cerebral state of insanity, that extensive disorganization of the brain frequently occurs, without impairing or disturbing, in any way, the manifestations of the mind; which, it is alleged, could not possibly happen, were derangement always the result of an affection of the brain. Dr. Abercrombie relates some cases of this kind, and one in particular, in which nearly the whole of the left cerebral hemisphere was found disorganized in a lady who spent the evening preceding her death cheerfully with a party, at the house of a friend,* from which we may suppose that no very striking lesion of the mental faculties existed. At the same time, it would be little less than absurd to maintain, that, in such cases, the mind is manifested in all its original power, and is capable of the same steady application as before. For, if the latter proposition were correctly true, the only logical inference deducible from it would be, not that the brain is

* Abercrombie on Diseases of the Brain, 1st edition, p. 180.

not the corporeal seat of insanity, but that *it is not the organ of the mind.* I am aware that extensive disease may affect one side of the brain, and the patient be neither silly nor delirious, but, on the contrary, reasonable and composed, and yet the degree of mental power may fall far short of that which was possessed during health, although, in common speech a person so situated would be said to retain all his senses entire. There is in reality a wide difference between the small portion of intellect called into action, either in the retirement of the habitual invalid, or in the limited sphere of a sick room, and that required and displayed by the same person when in health, in the wider field of public and private duties ; and it is high time to make the distinction in practice, particularly where important conclusions necessarily depend on the accuracy with which our observations are made. Nothing is more common than to hear it affirmed of a patient, who returns a rational answer to a simple question, that his mind is entirely unimpaired ; and, nevertheless, to find, on inquiry, that he is altogether incapable of following a chain of reasoning, or of comprehending a line of detail, to which, when in health, he would have been much more than adequate ; or, in other words, that his mind, though not in the usual sense deranged, *is greatly impaired in power.* Let any one, who denies this, attempt to think intently, or to study profitably any thing requiring a continued exercise of attention, while he is either recovering from acute disease, suffering from an ordinary fit of bile, or even walking about as a confirmed invalid, and he will soon be convinced of his error. Nothing is more usual, in ordinary life, than to see a person a little unwell lay down his book or his pen from *consciousness of incapacity, or perhaps ask for a novel or volume of tales to pass the time, as he cannot think or attend to any thing serious.* This diminution of mental vigor is met with every day in persons confined even with a common cold, and yet the physician would never scruple to certify, if called upon, that in such circumstances A B was in perfect possession of all his faculties, when, in fact, he was all the time giving

demonstrative proof that, although not raving or absolutely silly, his thinking powers were *impaired*, and palpably inadequate to their usual effort.

Another important circumstance is often overlooked in reasoning from such cases. The state of the intellect is alone attended to, and held to represent the mind, the condition of the propensities and moral faculties being altogether disregarded, when in reality they are as much parts of the mind as the intellect itself, and the portion of the brain dedicated by the Creator to their manifestations is much larger than that allotted to the intellect. The obvious consequence of this last arrangement being, that the parts of the brain belonging to the feelings may be diseased or injured, without necessarily impairing the intellect, the organs of which remain sound and entire. Greater accuracy in making observations, and greater caution in reasoning from them, are imperatively required, before the conclusions arrived at can be made available, either to substantiate or to set aside the opinions generally prevalent on the subject of the mind, and its connexion with the brain.

It must, however, be distinctly admitted, that instances of extensive cerebral disorganization occur, in which no mental or other disturbance appeared during life, of so marked a character as to excite a suspicion that such a thing existed ; but this kind of anomaly is by no means limited to the organ of mind. Numerous cases are recorded, in which a whole lung has been destroyed, or the greater part of the liver disorganized, or a kidney has disappeared, without any suspicion having been entertained during life of the real state of matters ; and it would obviously be as reasonable to infer from them that the lungs were not the organs of respiration, or the seat of phthisis ; the liver, the source of the biliary secretion, or the seat of hepatitis ; as it would be to infer in the former that the brain is not the organ of the mind, or the local seat of insanity. It is true, we may have a difficulty in explaining how extensive organic changes can occur, with so little functional disturbance, when, at other times, we see the greatest disorder follow organic

affections which scarcely leave a perceptible trace behind them. But it is much better to state the difficulty, and to admit our ignorance, than, by way of explanation, to hurry into contradictions, which only serve to retard our future advancement.

Entertaining these views, but anxious for truth alone, I am happy in being able to state the experience of a very intelligent physician, Dr. CRAWFORD, of Dublin, whose official situation, as assistant physician to the Richmond Lunatic Asylum, gives him great facilities for accurate observation, and who does not allow his opportunities to pass unimproved. After perusing the first article on Insanity in the Phrenological Journal, Dr. CRAWFORD was kind enough to write to me, stating that he agreed perfectly with my general positions, but adding some remarks on the pathological appearances, which, as characterized by candor and truthfulness, I shall now extract; only promising my conviction that the discrepancy between us is not so great as at first sight one would suppose, and that, at all events, it is right to mention what he says.

'I am inclined to adopt the principle, that there exists no disease without alteration of matter; that any deviation from the healthy condition of any of the actions of life, must depend upon some deviation from the healthy condition of the organ by which that action is performed. In the present state, however, of our knowledge of morbid anatomy, this cannot always be maintained as a *matter* of *fact*, and must often be received merely as a *reasonable conjecture*. In no class of diseases is this perhaps more frequently the case than in those of the nervous system; the ultimate structure of the brain and nerves is so extremely delicate, and so little known, there is something so subtle in their mode of action, that considerable disturbance often arises in their functions, without our being able to discover any corresponding derangement of structure. Many of their disorders have been unavoidably deranged among what are commonly called *disorders of function;* and such I believe, in our

present state of knowledge, must still be the case with insanity; the numerous post-mortem examinations at least hitherto made, will not, I fear, justify us in stating, as *matter of demonstration*, that the various forms of insanity depend upon one or various kinds of diseased structure. The only morbid alterations found have been such as corresponded with the different diseases of which the lunatics have died, and exactly the same as those observed in persons of *sane mind*, who have died of similar diseases; in lunatics, who have died in a few days of acute disease in some other vital organ besides the brain, the brain has generally been found healthy. I often observe, that in cases of acute mania, there may be at first high fever, and other symptoms evidently indicating organic affection, and leaving, if the patient soon dies, undoubted traces of inflammation, &c. in the brain; but when, after some time, the fever and acute symptoms subside, the mental aberrations and wanderings will continue, for a considerable lapse of time, under every *outward sign* of bodily health. Foville, and some others, describe a reddish rosy hue of the cortical substance, which they have very frequently found in the brains of lunatics, *and in them only*. I have had the opportunity of corroborating their statement, but have not found this alteration sufficiently general to deduce from it any general principle.

'It is to be hoped, however, that if we could, during life, ascertain exactly what parts of the brain are more particularly the seat of the diseased action, we might at last, by a more careful and minute examination of such parts after death, discover changes of structure, which would lead to a more accurate knowledge of the nature of this most interesting and most distressing class of complaints;—in many cases, I should suppose appearances of excitement and increased action, and in others, probably, of languid, deficient, or perverted action.'

When Dr. Crawford mentions, as above, that the only morbid alterations found in many lunatics have been such as corresponded with the different diseases of which they died, and exactly the same as in persons of *sane mind* who have died

of similar diseases, it is manifest that he refers to patients whose alienation was still only in its functional and curable state, and not to those who have died from the natural progress of the morbid action on which the derangement of mind depended; and the former is precisely the class in which it *sometimes* happens that no *apparent* lesion remains after death. But, when we consider the delicacy of the cerebral structure, and the smallness of change required to disorder its functions, I am much disposed to agree with those who expect that morbid appearances will be found even in these cases more frequently, in proportion as our acquaintance with the healthy and morbid conditions of the brain shall become more accurate and precise.

In cases of long standing, singular changes are often observed not only in the brain, but in the skull membranes. It is now many years since Drs. Gall and Spurzheim drew the notice of the profession to the ivory-like hardness and density of the skull, which occurs after chronic insanity, and which is the result of continued increased action. The frequency of this organic alteration, in such circumstances, has been called in question; but, as far as my limited experience goes, the original statement is borne out. I have noticed great density and compactness of structure, even where decided insanity had not existed, but where excitement of feeling, or unusual activity of certain faculties, had been kept up for years at the expense, of course, of increased action in the vessels of the head. In a hypochondriacal case of this description, and of many years standing, which terminated in May, 1826, and in which the mental disturbance had never gone so far as to constitute insanity, the alterations of structure were very remarkable. After sawing through and removing the skull-cap with considerable difficulty, the great thickness and density of the skull attracted attention, as indicating the existence of long continued disease. In most places it was nearly one-half thicker than usual, but the anterior part of the frontal bone presented the most curious appearances. Externally its surface was smooth and reg-

ular, but internally a large portion on each side, corresponding to the situation of the organs of Imitation, Causality, and part of Comparison, presented a distinct, broad and unequal prominence, by which the thickness was increased to rather more than half an inch; while that portion lying over the organ of Benevolence, remained regular and equal, and was not more than a quarter of an inch thick. The rugged and exostosis-like appearance of the projecting part of the inner table of the skull, showed clearly it was the result of morbid action, and not the natural state of the bone: indeed, it was quite evident that the brain had diminished in general size, in the proportion indicated by the increased thickness of the skull, and that the frontal convolutions, corresponding to the thickest part of the frontal bone, had diminished in a proportionally greater degree than the rest of the brain. The appearances were altogether so singular, that I cut away and preserved a portion of the bone.

The brain itself, on being removed from the skull, and examined externally, seemed a little softer, and considerably more vascular than usual. The convolutions were more easily unfolded than we find them in general, and the lateral ventricles contained about an ounce of clear serum; but, so far as I could observe, no part of the brain appeared to be more affected than another. Morgagni, it is well known, remarked considerable differences in different parts of the same brains.

The mental peculiarities of this lady, during the last twenty years of her life, were caprice, restlessness, and activity of mind, and an almost unvarying belief that she was ill of some fatal disease; but, in other respects, she was cheerful and rational, though never remarkable for depth of understanding or steady application.

In another case, in which the patient, T. D., aged 31, a young man of the medical profession, died consumptive, after being twelve years insane, and in which I examined the head, on the 1st July, 1827, forty-two hours after death, the changes were equally remarkable. During the five years preceding his death, the excitement under which he had previously la-

bored abated, and his mind became weaker, and less easily irritated; and, during that period, he used to boast that his powers were now becoming etherialized, and less dependent on his body, as his head was diminishing so rapidly in its dimensions, as to require each time a smaller sized hat than the one previously in use. On dissection, the reduced size of the forehead was very manifest. The integuments were firmly adherent, and the skull so dense as to be sawn with difficulty. It was of very unequal thickness, and presented a large frontal sinus, extending back over the orbitar plates to nearly the bottom of the socket. The dura mater adhered firmly, but, except being, in common with the brain and pia mater, much more vascular on one side than on the other, it presented nothing unusual. One cerebral hemisphere was turgid with blood, and, when cut into, presented numerous red points, and a very deep reddish-brown corpus striatum, and a little serum in the ventricle. The other was paler than natural, forming a contrast in every point with its fellow. No symptom indicated this inequality during life.

But the most remarkable example of this description with which I am acquainted, occurred in February, 1819, at one of Esquirol's clinical lectures, at which I was present. The patient was a woman who had been brought to the Salpétrière four years before, affected with religious melancholy. Some time after, she believed herself possessed of God and of Christ, and became very gay. At last, she fancied M. Esquirol to be the Deity, and under that notion, did whatever he required of her. He expected to cure her by this means, but was deceived. She became more melancholy, refused to eat, and fell ito marasmus. Scurvy next made its appearance; she became weak, and at length fell asleep in death (*elle s'engourdissait*). At the time of her entry, her forehead was so large, that M. Esquirol had a drawing made of it. At her death, it was *small and contracted*, and, on opening the head, the skull was found to be *dense and thick*, and more so at the forehead than elsewhere. The brain was soft. The right ventri-

cle contained some serosity, and the cerebellum was rather firmer. The cerebral convolutions were *shallow, and little marked.*

I found a similar change of structure in the skull of a lady, who died at the age of 47, after having been fifteen years insane. The integuments were perfectly bloodless; the skull was very dense, close, and compact, and of nearly double its usual weight. The dura mater was thick and tough, but not very adherent, although considerably injected and bloody on its surface. The cerebral lobes were extremely injected and vascular throughout, especially on the coronal surface. The arachnoid membrane at the base of the brain was thickened and inflamed. The brain, when cut into, exhibited numerous red points, and was of very firm consistence, the fibres tearing up to the very surface. Both arteries and veins were much distended.

The last case I shall mention is that of a gentleman of middle age, of an active bilious temperament, who, after having been two years in a state of misery, from a hypochondriacal affection, from which he had partially recovered, was suddenly carried off, before medical assistance could be procured. During all that time he was restless, irritable, anxious, and incapable of continued application; his sleep was wretched, and his whole condition indicated undue excitement of the brain. On opening the body, the head was amazingly gorged with blood externally and internally; and on removing the skull-cap, a great quantity continued to flow out, as also a good deal from the spine. The ventricles contained about two ounces of serous fluid. The dura mater at the base of the skull was minutely injected and red. The skull was dense, but not unusually thick, and the brain injected, but otherwise not apparently diseased. The spinal column was not examined. No other morbid alterations could be detected, nor was the cause of the sudden death very evident.

I have specified the preceding cases, because, with perhaps one exception, the fatal termination was, so far as I am able to

judge, in a great degree the result of the *same* morbid action which gave rise to the mental derangement, and they therefore come within that class of cases in which morbid appearances in the head, corresponding to the mental affections, are almost always met with. Except in T. D., who died of phthisis, and whose lungs were full of tubercles, there was no affection of any secondary organ worth mentioning, and the order and progress of the symptoms were entirely such as closely connected themselves with the brain, and the original aberration of mind.

In illustration of a remark on page 258, great density and compactness of texture in the bones of the skull may occur in other diseases of increased action, attended with mental affections different from insanity, I may allude to a case which I met with last year. After a very severe attack of erysipelas of the head, from which the patient apparently recovered, a childishness of manner and unusual excitability were observable during several months, which then diminished; but were followed by inability to read, or even listen to reading, of which the patient used previously to be fond. The spirits now gave way; restlessness and depression, with evident diminution of muscular power, took place, till a few days before death, when acute symptoms, such as headache, sickness, and fever, made their appearance, and speedily terminated in death. The skull was found to be extremely dense, and resisting to the saw, and very thick at the occipital region. Over a large space on the upper surface of the right hemisphere of the brain, a layer of yellowish-white coagulable lymph was effused, which lined the internal surface of the dura mater. A considerable quantity, more nearly resembling pus, was effused, under the arachnoid, over an extent equal to four or five inches. The ventricles contained some bloody serum, and the brain itself was hard and firm. In this instance, the patient was quite collected the day before her death, but her mind had been greatly impaired in power for several months, and it continued weak to the last.

## NOTE.

*Appearances on dissection, &c.* Until a late period it was a general opinion that pathological researches in insanity, had revealed nothing of importance, nor any thing that had not been noticed in other than cerebral diseases. PINEL was of this opinion, and so was ESQUIROL twenty years since, though of late years he finds organic lesions in the brains of the insane that formerly escaped his observation, and it is believed he has changed his opinion.

But these researches have been prosecuted with great zeal and industry by several modern pathologists, particularly by FOVILLE, CALMET, FABRET, and BAYLE; and their labors tend to induce the belief, that ere long not only will *specific* alterations be supposed to exist in the brain, in insanity, but that they will be accurately known and described.

According to M. ANDRAL, these authors agree in the following propositions: — *First*, that in mental alienation the brain invariably presents lesions which can be distinctly recognized; and, *Secondly*, that these lesions vary according to the acute or chronic form of the malady, and according to the character it assumes in its symptoms — whether the affection be simple, that is, confined to intellectual disorder, or complicated with lesions of sensation and motion.

*In simple Alienation*, according to M. FOVILLE, who dissected an immense number of insane, the grey substance of the brain is remarkably and *specifically* altered, while the grey matter of the *interior* of the brain is not at all affected. Again this alteration varies in its characters according to the acute and chronic state of the alienation. In the *acute* variety, the grey cortical matter is altered both in color and consistence. Shades of redness, from rose to crimson, minute echymoses, marblings of various extent, and effusions not larger than a pin's head, are found. The external part of the cortical surface is generally indurated to a certain extent while the contrary takes place in the inner portions.

In the *Chronic* variety, all these appearances are more marked. In the very chronic cases, especially in dementia, he has observed atrophy of the grey substance, and of the cerebral circumvolutions.

*In Mental Alienation with Paralysis, &c.*, the grey substance presented the same alterations as those already described. The white substance was in several cases perfectly normal. In some cases, again, it has been found remarkably altered, of a splendid white color and indurated consistence. Besides the changes thus described, every possible variety of morbid lesions, especially cysts of every kind, may occur as complications of insanity, whether acute or chronic. In conclusion, therefore, *the present state of our knowledge* of the pathology of madness may be enumerated briefly, in the two following propositions :—1. In a few *rare* cases there is no appreciable alteration. 2. In a vast majority of cases there are alterations, some of which appear to be *specific*.

*Weight of Brains.* Different opinions have been advanced respecting the weight of the brain in insanity. M. MIGUEL believed that the brains of the insane were lighter than those of the rational. But M. LEURET has shown this to be incorrect. He has very recently put the matter to the test of accurate experiment, using an extremely delicate hydrostatic balance. He ascertained, by numerous experiments, that the

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| *Standard* Specific Gravity in *Reason* was . . . . | 1. 28 |
| In *Mental Alienation*—Acute delirium . . . . . | 1. 30 |
| Mania . . . . . | 1. 31 |
| Dementia . . . . . | 1. 32 |
| Monomania . . . . . | 1. 34 |
| Mean Sp. gr. . . | 1. 32. |

*Insanity illustrated by Phrenology, &c.* On this curious and very important subject M. ANDRAL, one of the most distinguished pathologists of the age, says, 'I have no hesitation in saying, that I regard the principles of GALL as fully proved; and I believe he is not much astray in assigning particular cerebral parts to special instincts or intellectual faculties; and in reference to the question, whether from certain conformations of the head, the future occurrence of mental alienation may be predicted, and its kind specified,—I am inclined to answer in the affirmative. As a general rule, it may be stated, also, that when the circumference of the head is only between twelve and fifteen inches, the mental condition can be but little above idiocy. Eighteen inches may be regarded as the circumference necessary for intelligence; at twenty, the mental faculties are still more developed; and from twenty to twenty-two inches, they attain their maximum power.'

In connexion with this subject, is a case lately published by Doctor CASIMIR BROUSSAIS, in the Journal de la Societe Phrenologique de Paris. A negro, who had received a severe blow and wound above the ear, on the part where SPURZHEIM places the organ of Destructiveness, became very furious or wild, according as the pressure was made more or less strong upon this part. B.

## CHAPTER IX.

### WHAT ARE THE PROXIMATE CAUSES OF MENTAL DERANGEMENT?

All important as it is to know what the peculiar pathological states are which give rise to insanity, there is perhaps no other single point of doctrine connected with the subject about which we possess so little accurate information. In the following observations, therefore, my objects are, much less to attempt a solution of the problem, than to draw attention to its elucidation and to show that the proximate cause is not the same in all cases; but differs according to the individual constitution, and to the agency of the circumstances which have called the disease into existence.

From the disturbance of the mental operations being the most striking of the phenomena of insanity, the latter is very generally treated of as a specific disease, and the action of remedies discussed as if they were applicable alike to every maniacal patient. This, however, is a very serious error, and differs totally from the view which we take of the functional aberrations and diseases of other organs. When the function of respiration, for example, is deranged, we do not proceed to treat all the patients so affected on one plan, because we know that respiratory disorder may arise from different diseases. If the patient is ill of pleurisy, we use depletion with energy and consistency, because we have a tangible and intelligible affection to deal with, the nature of which is known, and also the rem-

edies by which it may be subdued. But another patient may have his respiration disturbed by an effusion of fluid into the substance of the lungs; and if, trusting to the functional symptom alone, we proceed to treat him on the same principles, it is not improbable that he may die in our hands. Precisely the same doctrine applies to the brain. Disturbance of mental functions may arise from various affections of a different nature; and if we do not adapt our treatment discriminately to the case before us, we shall do serious mischief, instead of that good which we intend to effect.

Among those who are conversant with the insane, this difference of proximate cause or primary disease is, indeed, familiar. Nothing, for instance, could be more strongly expressed than the caution which Esquirol used to give against allowing ourselves to be misled, by the mere similarity of the mental symptoms, to the belief that the bodily affection must therefore be identical. In laying down the principles of treatment, he insisted on attention to the exciting and proximate causes, as the only safe guides to efficacious and positive treatment; and assured his hearers that in following them, they would rarely find themselves deceived; and, accordingly, in the article Folie (p. 231), we find him using the following remarkable expression: '*What numberless accidents and obstacles must those practitioners have met with, who believed that they were treating one and the same disease every time they were called to a case of apyretic delirium,*' or madness. And, as if even that were not strong enough, he states explicitly in another page (218), that there is *no specific treatment of madness*, and that we must often vary, combine, and modify the same means. For, 'as this malady, *is not identical*, or of the same nature in every one, and as in each individual it has its own causes, character, and particular seat, so it demands a new calculation, new combinations, a new problem to be resolved, whenever we are called to treat a new case.' Sydenham, whose accuracy of observation is proverbial, takes notice of the same circumstance; and, in alluding to the particular species of mania, which he had

frequently observed to follow ague, and in which the treatment best adapted for ordinary cases of madness always did harm, and generally induced incurable idiocy, he expresses his surprise that no other authors make mention of the same fact. If it were necessary, I could easily produce abundance of concurring testimony from practical authors to the same effect, but this would only encumber the memory, without adding to the value of the observations.

After the exposition I have given of the symptomatic forms of mental disorder, I need scarcely stop to show that even idiocy is not always the same disease. One species we have seen to exist from birth, and to arise from too small a size of brain. Another is the result of chronic hydrocephalus, and is distinguished by the preternatural enlargement of the whole head. Another seems to follow a scrofulous enlargement, resembling hypertrophy of the brain itself; and a fourth gradually comes on about puberty from exhaustion of the nervous system by onanism, venereal excesses, or even by severe mental application. Others might be mentioned, but these will serve as specimens of the same mental condition accompanying bodily disorders of essentially different nature.

Related to the preceding is that kind of imbecility which frequently follows fever and other acute diseases in young and precocious subjects. Those most exposed to its attack are children with early developed large heads, great activity of mind, and irritability of nervous system, and who, in consequence, from any accidental cause, such as a fall, sitting too near the fire, irregularity of diet, or intestinal irritation, are liable to congestion in the head, convulsions, or inflammatory affections, terminating in idiocy or in death. Sometimes the same result follows external injuries, and other mechanical causes; but in surveying the examples we have given, it is impossible not to perceive that the disease or the element which requires treatment, is different in each, although one of the consequences, or imbecility, is common to them all.

In discussing the exciting causes, I noticed the identity of nature between them and those which produce the more acute

diseases of the brain, and remarked that many advantages would accrue to medical science, were both classes of affections to be studied more in connexion with each other, and with the ordinary laws of the animal economy, than was generally done. In coming now to the examination of the different states whence insanity, properly so called, originates, the accuracy and application of the remark will be still more apparent. Individual peculiarities of temperament, constitution, and circumstances, exert a powerful influence in modifying morbid action, even when excited by similar or identical causes; and, therefore, in enjoining that each case should be viewed according to its own aspects, and its treatment conducted on its own grounds, and not on any general law, Esquirol has given a valuable and excellent advice, which those who have most carefully followed it will be the first to appreciate justly. But, laying aside for the present the minuter differences of individual cases, there are nevertheless some general divisions of morbid action sufficiently distinct in nature, and strongly enough marked, a short notice of which may serve to guide the student to more accurate observation, and to a surer and nicer discrimination. To these, therefore, I shall briefly allude, but again warning the reader that I do not profess to instruct him, but merely to point the way in which he may obtain instruction for himself.

The first and most comprehensive division includes the numerous cases in which the mental disorder is connected with increased action in the blood-vessels, substance, and membranes of the brain, such as we see in a variety of its inflammatory affections. When the inflammation is acute, its progress is generally rapid, the mental disturbance great, and the termination speedily fatal, unless timely and active assistance be administered. When it is chronic, its advances are slower, the disorder of mind is sometimes less violent and less general; but the event, although more remote, is equally serious. In the first case, because the corporeal symptoms are very prominent, and the state of mind subsidiary, we are accustomed to call it ‘ inflammation,’ a name which expresses the

nature of the bodily disorder; but, in the second, because the mental symptoms predominate, and the corporeal disturbance obtrudes itself less forcibly on the senses, we are in the habit of giving it the name of Insanity, a word having reference solely to the state of the mind; but it is most worthy of remark, that the real affinity between the two in a community of bodily cause is thereby only hidden and not destroyed, and that the importance of keeping that affinity in view while conducting the treatment, is not one iota diminished, but, on the contrary, exists in its fullest force.

Mental derangement from increased action in the head of an inflammatory character, is perhaps the most common of all, and it appears in the same kind of subjects as are prone to acute inflammation, viz. in the young, the robust, the sanguine, the active minded, and the high passioned; and under the agency of strong excitement, either external or mental; the chief difference being either the violence or permanency of the cause, or the presence or absence of the hereditary predisposition, but the mode of action of the cause, and the process of the morbid changes, being almost exactly the same. In both, a powerful determination of blood to the head is common, the vascular impetus being great, the face flushed and tumid, the eye suffused, glistening and unsettled, the heat of the head unnatural, and frequently accompanied with pain, giddiness, tinnitus aurium, imaginary sounds, as of persons talking, flashes of light, or the false perception of external objects, and often with impatient restlessness, and rapid transition from one thing or train of thought or feeling to another, and with extreme susceptibility and proneness to violent irritation, or uncontrollable and passionate excitement. Sometimes, however, the face is pale, and the features shrunk, but even then the combination of other symptoms generally suffices to render the character of the complaint sufficiently appreciable; and much assistance will be derived from taking into account the nature of the exciting causes, and of the constitution.

To designate this form of insanity, which may be considered as of a chronic inflammatory character, Dr. Spurzheim has

adopted from Mr. Hill the term Hypersthentic, not as unexceptionable, but as being better than any in common use; and he has given some excellent remarks on the difficulty we sometimes experience in recognizing it, especially when the brain is the only organ affected. The pulse is deceitful, being sometimes hard, suppressed, and almost spasmodic; but it is to be suspected in the young, the plethoric, the well-fed, and the robust, in whom the exciting cause has been stimulating, and weakness has not been produced. *It is often without pain*, which easily leads into error those who forget that *the brain is insensible*, and are ignorant *that fear, fury, and other unnatural and disagreeable mental affections, are to the brain what pain is to the nerves.* This last remark of Dr. Spurzheim's is very important. Violent delirium and fury, regarded by some as the only signs of an inflamed brain, are not so. Inflammation may exist without them, and they without inflammation. Indeed, in many instances, as Dr. Spurzheim further remarks, the symptoms are those of oppression of the nervous power, rather than of apparent excitement of the vascular system. It will produce mania, melancholy, erotomania, or any other form, according to the cerebral part chiefly affected; and hence, whether the patient be in a state of fury, of melancholy, of religious depression, of exalted pride, or of towering ambition, or all these by turns, the treatment must be antiphlogistic in all its details.

In relation to this branch of the subject, simple justice requires me to remark, although somewhat out of place, that Dr. Spurzheim has, in his work on Insanity, published sixteen years ago, in no small degree anticipated later and more popular writers on the pathology of the brain, in some important points of doctrine. In treating of the affections which used to be included under the name of Phrenitis, for example, he expresses his surprise that inflammation of the brain should be so little heard of, and that such men as Dr. Cheyne * should

* Cheyne's first Essay on Hydrocephalus.

affirm that it was scarcely ever seen in Scotland; while numerous dissections, says Dr. SPURZHEIM, induce me to think that *this disease is by no means rare, although it is not always accompanied by those symptoms which, in the opinion of the schools, indicate it.* There is often oppression, he adds, rather than excitation of the faculties; and a very common error is to suppose that it is rare in children. If Dr. SPURZHEIM were publishing another edition now, he would have no reason to complain on this head. The later labor of ABERCROMBIE, LALLEMAND, ROSTAN and BOUILLAUD, have forever destroyed the delusion of its rarity, and have thrown much light on this obscure and once neglected field of pathological inquiry. The preceding remarks, however, confirmed as they have been by the publications of the author just named, point out Dr. SPURZHEIM as a zealous and observing physician, as well as a physiologist.

The labors of Dr. PARRY and others have shown the influence of the vascular system on the condition and functions of the brain; and the increased activity both of intellect and feeling, arising from quickened circulation, has been long known. Some of the cases recorded in Dr. ABERCROMBIE's late important publication are good illustrations of the concomitance of the two states, while they are invaluable as serving to put the practitioner on his guard against a very dangerous and insidious form of disease, and which, as Dr. ABERCROMBIE remarks, is apt to be mistaken for mania, or, in females, for a modification of hysteria. 'It sometimes commences with a depression of spirits, which after a short time passes off very suddenly, and is at once succeeded by an unusual degree of cheerfulness, rapidly followed by maniacal excitement. In other cases these preliminary stages are less remarkable, the affection, when it first excites attention, being in its more confirmed form. This is, in general, distinguished by remarkable quickness of manner, rapid incessant talking, and rambling from one subject to another, with obstinate watchfulness, and a small frequent pulse. Sometimes there is hallucination or conception of per-

sons or things not present, but in others this is entirely wanting.' Its progress is rapid, and the danger great. In one case, the pulse rose to 150, in another to 160, and in the third to 120; and nothing except a highly vascular state of the pia mater and arachnoid, numerous red points in the brain itself, and slight effusion was found on dissection.*

The opposite condition of congestion or fulness of blood in the head gives rise to drowsiness, dulness, or inaptitude for mental exertion, in proportion to the degree in which it exists, and, in some instances, even where no marked predisposition existed, I think I have traced a connexion between fulness of considerable standing but little immediate urgency, and the subsequent occurrence of considerable mental disorder, closely allied to insanity. Severe hypochondriacal depression, bordering on derangement, is not uncommon in young subjects of a sanguine temperament, in whom, *a priori*, we should rarely expect to meet with it. In two or three instances of this kind, which I have seen, there have been fulness in, and considerable determination to, the head at and after puberty, attended with heaviness, redness and vascularity of the face and eyes, headache, giddiness, and occasional stupidity, or unaptitude for application, always relieved by epistaxis, leeching, or laxatives; and this state has continued in a greater or less degree for a number of months or years, without much apparent evil, except inequality in the mental powers, till at last, from otherwise inadequate causes, a permanent depression verging on melancholy has ensued. This state deserves more attention than it has yet received, as I am satisfied that by timely precautions the future development of any serious mental affection might often be prevented.

Another division of cases is connected with a proximate cause, or condition of brain, in many respects the opposite of that just described, and is therefore termed Asthenic by Dr. Spurzheim. There is often quite as much excitement and

* Abercrombie on Diseases of the Brain, 1st edit. p. 63—4.

fury in the one as the other; and indeed so much of general resemblance, that they might easily be confounded, were we to neglect the rule so much insisted on by Esquirol, of judging more from the causes than from the prominent mental symptoms. The true nature of the disease, in fact, can only be determined by taking into account the constitution of the patient, the beginning and progress of the symptoms, and the occurrence of debilitating causes. Such patients are generally weak and delicate, of a lymphatic or sanguine temperament, subject to hemorrhages or other evacuations; and there is congestion towards the head, but not inflammation. It is apparently of this description of cases that Sydenham speaks, when he says, while other kinds of amentia may frequently be cured by copious evacuations, bloodletting, and purging, this can bear none of these remedies; for, although such means may subdue the ferocious fury of the patient, they render him not only fatuous, but altogether incurable. This kind of madness, the same author remarks, although most common after intermittent fevers, especially quartans of long duration, often occurs without fever in those of a cold and weak temperament.* After death, the vessels of the head are found distended but weak, and the brain of a softish consistence. But, even in this class of patients, some inflammatory action occasionally supervenes, requiring all due vigilance and attention on the part of the physician to adopt his treatment to the existing state, and affording another proof of the necessity of studying each case in its own individual aspects, and not trusting too much to exceptionable generalities, which may lead us into serious errors.

The last division of cases which I shall now notice, is that in which the derangement of mind seems to depend chiefly on nervous excitement, unaccompanied with much increase of vascular action. This kind of insanity is met with in persons of a very delicate, irritable, and nervous habit, and particularly in those who have been exhausted by continued mental anxiety,

*Sydenham, Opera Medica, sect. 1. cap. 5.

grief, jealousy, or other disagreeable emotions. It is more common and more dangerous than the preceding, as indeed are most other diseases in such constitutions. The physiology of the brain and nervous system is still too imperfectly understood to explain in what this kind of derangement consists; but it bears a strong affinity to the more common of the nervous affections, in which intense excitement or inordinate action of nervous parts is often witnessed without any *appreciable* organic change, or apparent disturbance of the local circulation. In its aspect it differs widely from the first description of cases, in not presenting the unequivocal signs of increased vascular action in the head, by which they are characterized, and in occurring in thin, delicate, sharp-featured, irritable persons, rather than in the plethoric and robust. In its organ also it differs from the second class of cases, in its subjects not presenting either the cold and infirm temperament of SYDENHAM, or the debilitated state of the system which favors the production of asthenic insanity. Its causes, too, are frequently of an exciting kind, and fail to induce the first species of disease, only because the constitution to which they are applied is essentially different.

Nobody can be more sensible than myself of the deficiencies of the preceding exposition of the various proximate causes which give rise to mental derangement; but, imperfect as it is, I have preferred giving it, because it is calculated to stimulate the reader to pursue the right path in prosecuting his inquiries; whereas to have followed the beaten track would have been only to mislead him further. It is on such distinctions as those of which I have attempted an outline, that rational and discriminative treatment must be based, and not on the evanescent and variable aspects of a purely mental classification. For all the varieties of mania, and of monomania may, with the same *mental* symptoms, arise indiscriminately from any of the three cerebral conditions above mentioned, and therefore require the most opposite medical treatment — a sure proof of the erroneousness of the divisions now in use.

## CHAPTER X.

### PREVENTION AND TREATMENT OF MENTAL DERANGEMENT.

Having already considerably transgressed the limits originally proposed for this work, I am obliged to dedicate less space to the subject of the prevention of insanity, than its importance demands; at the same time, the prevention of the evil is an object of such intense interest to every benevolent and reflecting mind, that I must offer a few remarks upon it. *Venienti occurrite morbo*, is an excellent maxim in every instance, but in none more truly than in that which now occupies our attention. When once established, mental alienation is so tedious in duration, and so difficult of cure, that no effort should be spared to obviate even its most distant approach.

Insanity, being a consequence of cerebral disease, is to be warded off by carefully fulfilling the conditions most conducive to the regular development and healthy action of the brain; and it is here that the physiological principles evolved when treating of the predisposing and exciting causes show their importance; for, if we either neglect or remain unacquainted with the laws which regulate the healthy exercise of the cerebral functions, we may allow causes of mischief to operate before our eyes, without ever thinking of the inevitable result, till perhaps a maniacal paroxysm takes us by surprise, and the evil has become irremediable before its existence has been suspected.

The first condition of health, as formerly remarked, is a sound original constitution of brain, free from any hereditray predisposition to derangement. To prevent the future development of insanity from this cause, alliance by marriage between the members of predisposed families ought to be religiously avoided; and their offspring, where an alliance has already been formed, ought to be educated with express relation to their infirmity, and every precaution adopted to give them security. Children, so circumstanced are frequently of an active, irritable, and acute disposition; they learn easily, are extremely sensitive in their feelings and passions, and prone to nervous and convulsive affections. The nervous system, in short, is prematurely developed; and, instead of being endowed with regular healthy activity, its general tone borders closely on the irritability of disease. To prevent this becoming morbid, we ought carefully to regulate and to limit the amount of mental occupation; never to continue it long without intervals of relaxation and exercise; and never to permit severe study or great excitement late in the evening, when the brain, instead of being stimulated, ought to be disposed for repose; and never immediately after meals, when the nervous energy is absorbed in digestion, and the brain cannot work or the mind exert itself with impunity. By thus avoiding stimuli and diminishing sensibility, and by increasing the vigor and development of the muscular and vascular systems by a great deal of bodily exercise in the open air, bathing, plain mild food, and such other means as we have in our power, we shall often be able to counteract the constitutional predisposition; and as the future disease generally begins by disordering the action of those organs which predominate most in size (in consequence of their natural tendency to excessive activity), our next object ought to be to select a profession, mode of life, and moral treatment, which shall call the weaker faculties into operation, so as to strengthen their organs, and give them some power as checks over those which are in excess. Parents, however, elated by the quickness and cleverness of the child, often run

into the opposite error, and by injudicious praise and other powerful motives, excite it to constant exertion in the very direction in which it requires to be moderated, and by so doing pave the way for its future misery. A delicate and volatile child, of a highly nervous temperament, will thus be shut up in school, deprived of relaxation, of pure air, and bodily exercise, for many successive hours, its intellect strained, its feelings roused by rivalry, emulation, pride, or even less worthy emotions—then be dismissed and sent home to a load of lessons which shall confine it for the rest of the day, and draw tears of bitterness from its eyes. What can come of such insane proceedings but pure insanity, or inveterate nervous disease?

In the first part of this work, I pointed out the influence which the state of the parent during gestation exerts on the liability of the progeny to disease; and as it is both extensive and undeniable, it becomes the duty of the practitioner to caution the mother against any kind of violent mental excitement, and to protect her as far as possible from every cause of annoyance or distress during gestation. Much irrationality, from ignorance chiefly, though partly from the perversities of fashion and caprice, is to be met with in this respect, and ought sedulously to be done away with, by the better education of the young, and by the friendly and well-timed admonitions of the physician.

The close confinement and sedentary occupations of the young in general, the neglect of sufficient exercise in the open air, and of active inspiriting games, taken along with overfeeding, and the heat of warm ill-ventilated rooms, particularly during winter, have great effect in inducing that delicacy and irritability of constitution now so common, and so favorable to the excitement of nervous disease and insanity; and ought therefore to be scrupulously attended to in attempting to avert the approach of madness in those predisposed to it.

A very important requisite in preventing cerebral and mental affections is, to regulate the exercise of the different powers of the mind, so as not to leave those which are naturally in excess

in undisturbed sway over the rest, but to strengthen the latter by well-directed employment; but, to save repetition, I must refer the reader to the chapter on the predisposing causes, where this subject is more fully noticed than can be done here. I must also refer him to the same place for a full exposition of the physiological laws of exercise, from which he will see how essential to the health of the brain well regulated activity of all the faculties of the mind is, and how very influential neglect of this law, either in the way of excess or of deficiency, is in leading to mental and cerebral disease. The means of prevention therewith connected, will not fail to suggest themselves to an attentive reader; and I shall therefore add only one remark, which is, that if those who are exposed to any one of the exciting causes of cerebral disease, or of insanity, put themselves on their guard to secure regular sound sleep, they will do much to ward off an attack. The moment the cause begins to excite sleeplessness by night and restlessness by day, with an involuntary propension of the mind in one direction, at first perceptible perhaps only to the patient himself, it is time to take alarm, and if possible, remove or counteract its agency. If it is excessive application to business, continued anxiety of mind, or excess of study, that is keeping up the activity of the brain, and placing it on the verge of disease, this may often be prevented by timely relaxation, or removal from the scene of anxiety, and particularly by carrying off much of the nervous energy in abundant muscular exercise often repeated, and by rigidly abstaining from mental exertion *at night*, and thereby allowing the brain to fall into that state of quiescence most favorable for repose. I have seen some striking instances of the efficacy of this plan in restoring tranquillity of mind, when on the very verge of derangement. The excitement of company and of tea, sometimes resorted to in such circumstances, may, if carried to any length, only add fresh fuel to the flame, and stimulate the brain beyond recovery; but the society of those whose feelings and pursuits are calculated to soothe those most excited in the patient, and to call others into action, is

very beneficial. If an acquaintance with the philosophy of mind were common among educated persons, and the patient had confidence enough in the knowledge and discretion of his friends to reveal to them the first approach he felt to losing command of his own faculties, the development of the disease might often be prevented; and, in fact, its attacks are, in many instances, just so many punishments for our ignorance and neglect, and the most effectual remedy would be the introduction of a better and more useful system of education among the community at large.

As to the means of preventing the development of insanity from the action of the direct or *functional* causes, I can do little more than say, that all of them ought to be carefully avoided by him who wishes to escape the disease. They are already treated of at considerable length, and from the constant reference made to general laws and principles in their exposition, I trust that the reader will feel it to be unnecessary that I should revert to them now. My chief reason for entering into their examination with so much minuteness and detail, was with a view to the practical advantages which would offer themselves when we should come to treat this branch of the subject.

Having proceeded so far in our inquiry, and seen how various are the morbid conditions from which the different kinds of mental derangement originate, we can readily appreciate the absurdity implied in proposing a specific and invariable method of cure, as if the proximate cause or disease were always identical in its nature; and perceive the necessity which exists of determining not only the virtues of remedial agents, but the states of the system to which they are peculiarly applicable.

There can be little doubt, from the progress already made, and the numerous testimonies afforded by experience, that if the different cerebral affections which derange the mental manifestations were better known, and the physician called in at their commencement, when a change of temper and habits, rather than decided alienation had taken place, many perma-

nent cures would be effected, where, from delay and ignorance, medical aid is of little avail. The perusal of the works of Dr. Spurzheim; and of Georget, Falret, and others, his unavowed but almost implicit followers; and the testimony of Broussais, Burrows, and all late practical writers, force this conviction upon the mind. Broussais, as already mentioned, speaks of his being able to arrest incipient mania with as much certainty as incipient inflammation; and Dr. Ramsay cites the continued experience of the Dundee Asylum, as 'proving beyond all doubt, that insanity at its first appearance yields, for the most part, readily to prompt and judicious measures; and that, by neglect, mismanagement, and delay, it becomes obstinate or altogether incurable.' While Dr. Burrows goes still further, and states the proportion of *recent* cases cured under his care, so high as 91 in 100*, being nearly the same as that given by Captain Hall as occurring in the institution at Hartford, called the Connecticut Retreat, which, if his account be correct, I am disposed to consider as one of the most important philanthropic establishments of the present day.† According to the report of the visiting physicians for the year preceding that of Captain Hall's visit, so admirably is the treatment adapted to the exigencies of the disease, that no less than TWENTY-ONE out of *twenty-three* recent cases, or *ninety-one three-tenths* per cent. recovered; whereas in most of our public institutions, the proportion of cures in similar cases is said to vary from only 34 to 54 per cent.; and in two other highly respectable asylums in the United States, the proportion runs so low as from 25 to 51 in 100.

Uncertain as to the perfect accuracy of the latter statements, whether there may not be differences in the kind of cases thus classed as recent, and which may partly account for the difference of result, still a vast disproportion must be allowed to exist; and the practical testimony thus given by Dr. Burrows and Dr. Todd, physician to the Connecticut Retreat,

* Lib. cit. 532. † Hall's Travels in North America, vol. ii. p. 197.

as to the comparative curability of recent cases, is not less gratifying to our highest moral feelings, than it is startling to our pride, and cheering to our future endeavors. It is, however, to be regretted that Captain HALL has not furnished more copious information in regard to the medical treatment pursued by Dr. TODD, for either some material difference must exist in the description of patients admitted by him, and those received into our establishments, or he must apply his professional knowledge with a degree of discrimination, and soundness of judgment, not common among us; and nothing could be more interesting or instructive than to know what his success is to be attributed to, and how far he agrees with Dr. BURROWS, whose results coincide so nearly with his own.*

Much as Dr. SPURZHEIM's work on insanity has been ostensibly overlooked by subsequent writers, it seems to me, that we are more deeply indebted to him than to any other author for the impulse and right direction lately given to the study of mental affections. The great object which he had in view throughout was, by a constant reference to sound physiology, to enforce the necessity of applying the general principles of pathology to the brain, as well as to all other parts of the body, and to treat its diseases in conformity with their nature, and with its structure and functions, instead of resorting to the incongruous variety of means at the same moment, which were

* The medical treatment so successfully pursued by Dr. TODD at the Connecticut Retreat for the Insane, differs in some respects from that of Dr. BURROWS, and more resembles that adopted and advised by Dr. F. WILLIS. Dr. TODD seldom has recourse to venesection, but makes a more free use of tonics and narcotics than have been recommended by most writers on insanity. He makes great use of the Conium Maculatum, Stramonium, and Hyoscyamus, and of the preparations of Iron, together with bark and wine, in the treatment of the insane, and believes he has derived more benefit from this plan of treatment than from any other.

The late Medical Reports of the Connecticut Retreat shows that this Institution still continues as successful in the relief of insanity as at the time alluded to by Mr. COMBE, and its inmates have greatly increased. At the present time, 1833, the number of the insane at the Institution is 63.

B.

so long in vogue. Now, this is precisely the improvement which is at present in progress, and which many labor to complete, without ever referring to the source from which it has chiefly sprung. In one sense, indeed, the objection to Dr. Spurzheim's views of treatment, that they contain nothing new, is well founded, as he proposes no new remedy. But if, as we hold, the establishment of fixed principles, by which to regulate more successfully the application of remedies already known, is a more important service than the discovery of a new article of materia medica, we can safely say, that for that, at least, Dr. Spurzheim is entitled to our warmest gratitude. I am ready to admit, however, that his work being based on phrenological principles, its value, as a guide, is more easily appreciated by those who have studied the new doctrines, than by those who read it in ignorance of its fundamental propositions.

In the administration of active medical aid, our first object must therefore be, to determine the nature of the individual case, and to adopt our means accordingly.

If the mental manifestations are imperfect, from defective development of the brain or organ of mind, as when it presents itself scarcely larger than the fist in a being arrived at maturity, medical aid is powerless, and nothing remains to be done except to attend to the animal functions, and promote the bodily comfort of the patient. But if imbecility or dementia occurs as a symptom of a weakened condition of the brain, consequent, for instance, on too debilitating a treatment of mania, on fever, loss of blood, starvation, or any other debilitating cause, then a tonic treatment, and a well-regulated application of stimuli are required, and may be successful even after several years of marked fatuity. But if the same mental condition supervenes on mania, as its natural termination in disorganization of the brain, cure by any means is utterly hopeless. Correctly speaking, however, these various causes of dementia constitute distinct diseases, having dementia for a symptom, and on this account alone require appropriate means of cure. Attention

to the bowels, tonics, good diet, dry warm habitations, pure air, exercise, rubefacients to the spine, setons, stimulating lotions to the head, aromatic baths, &c. constitute the general remedies for curable dementia, each of course being selected in reference to the proximate cause. Long perseverance in their application ought always to be encouraged, where we are not certain that disorganization exists. Moxas applied to the head or neck have succeeded in removing dementia of considerable standing in several instances, but being extremely energetic when applied to the head, and having even caused fatal encephalitis, they must be resorted to with great caution.

Coming next to cases of mania, or derangement of mind arising from external injuries of the brain, concussion, effusion of blood, &c.; these must be treated according to the ordinary surgical and medical principles, whatever the form in which the mental disorder shows itself, whether as mania, monomania, or dementia. But Dr. Spurzheim remarks that weakness of the blood-vessels often remains long after concussion, and gives rise to impaired vigor of mind. In such instances he has found cold lotions, vinous and aromatic fomentations, useful in giving tone, avoiding, at the same time, all encephalic irritation and efforts of mind or body; but blisters, vomits, ether, camphor, and opium, frequently enough resorted to, prove very hurtful.

Mania and monomania, in all their forms, are more frequently the results of a cerebral state, characterized by increased vascular action than of any other, and it then admits of active and successful medical treatment, particularly in its earliest stages. It is in such circumstances, that in young and robust subjects, blood-letting is often very beneficial, although, from its indiscriminate employment, in all kinds of cases, it had at one time fallen into unmerited disrepute. Pinel almost proscribed it, and Esquirol is of opinion, that it is rarely admissible, and often hurtful; while Spurzheim, Georget, Broussais, Frank, and others, think it only requires discrimination in its employment to become a very valuable

remedy. When severe headache exists more on one side than on the other, Esquirol, strongly recommends local bleeding, by leeches to the temples and behind the ears. Broussais goes still farther in his recommendation, and not only applies leeches in greater numbers, but repeats them for days in succession, and thus occasionally cuts short an attack. I have seen the very best effects follow cupping and then leeching, where great restlessness, accompanied with fulness and redness of the integuments, and other unequivocal signs of vascular excitement, were present. In one instance, the delusion of several weeks, or rather months' standing, was removed in the course of a few hours, and the expression of the face entirely changed. Where, as occasionally happens, pain or heat is complained of in one part of the head more than in another, leeches applied to the spot will often relieve. The discovery of such local complaints is greatly facilitated by an acquaintance with the situations and functions of the phrenological organs, and the relation between these and the prevailing mental symptoms. It ought never to be forgotten that the cerebral substance being insensible in itself, *uneasy and disturbed function* is to it what pain is to a nerve of sensation ; and that we have thus a clew to the local seat of mental disorders, which may yet be turned to account, when our knowledge shall be farther advanced. In a few instances, I have heard pain complained of in the region of the suffering organ, and some phrenologists affirm, that increased heat in the same situation is very common, even when pain does not exist. My opportunities of verifying this remark have been too few to authorize any expression of opinion about its accuracy, and I therefore leave it to the reader to stand on its own merits, and only add, that Dr. Wright, of Bethlehem Hospital, pointed out to me some cases, in which he had remarked local heat over the organs whose functions were chiefly deranged. In one of them the sensation was too marked not to be perceptible on the slightest examination.

I have seldom had occasion to see or recommend general blood-letting in pure insanity ; but I have observed more deci-

ded benefit from repeated and free local blood-letting than from any other means, and therefore consider it, taken in conjunction with a suitable regimen, and the use of other auxiliaries, as an extremely valuable remedy in the particular class of cases to which it is adapted, viz. those of vascular excitement. But, as Cox justly remarks, as fury, violence, and rage may equally characterize an opposite description of cases, and the pulse afford us little information, we must be careful to seek for other than mental signs to guide our judgment. It is, indeed, often very difficult to draw a true line of distinction between them, and then we must be equally cautious in our practice. But when we see manifest symptoms of general plethora in young, robust, and sanguine subjects, or in females at a critical period, or in those who have lived fully and taken little exercise, or had some customary discharge suppressed, or, in short, been exposed to some cause productive of fullness, if we do not resort to depletion and evacuations, we not only diminish the chance of recovery, but leave the patient exposed to the risk of apoplexy, or organic and incurable disease. In the various public institutions for the insane, blood-letting, local or general, is now much more employed than it was some years ago, and with a marked increase in the number of cures. In the Lancaster Asylum, Mr. Davidson has found it very beneficial.

Dr. Burrows condemns general bleeding, which, as has often been remarked, is not well borne by maniacs, and therefore his testimony in favor of the local abstraction of blood, is the more to be relied on. And he declares that he cannot recollect a *single recent case* (and this, be it observed, embraces every kind of madness), in which the abstraction of blood, either from the head or neighboring parts, has not been distinctly indicated ; and he repeats it without hesitation, so long as fresh excitement continues, even though it should become necessary to give tonics at the same time.* This practice

* Burrows' Commentaries, p. 589 — 592.

cannot be far wrong, when Dr. Burrows cures *nine* out of *ten* by its adoption. When any of the natural evacuations are suppressed, the French physicians are much in the habit of directing applications of leeches to be made as near to the part concerned as possible, and they say with the best effects.

In the same description of cases, cold applications to the shaved head are of primary importance. Laxatives, mild diet, quiet, seclusion, and absence from stimuli, such as too much light, intercourse with friends, and all other causes of excitement of mind or body, are all highly useful; and the activity with which they are to be followed out must depend on the intensity of the disease. But *consistency* in the selection of remedies, and due perseverance in the plan laid down, are absolutely essential; and, therefore, blisters, opium, and irritants of every kind, ought to be avoided, till the vascular action be reduced. Esquirol recommends laxatives to be given one day, and the warm bath the next, and says that he has found this method very successful in relaxing the skin and soothing excitement. He thinks a full dose desirable, and used to state in his lectures, that he found mild saline laxatives answer best in sanguine temperaments, and those of a warm and aromatic kind in lymphatic constitutions, and laxatives, combined with antispasmodics, in nervous temperaments. After fourteen or fifteen days' perseverance, Esquirol recommends an interval of eight or ten days to be made before resuming the same measures. When drastics are used, he advises abundance of nourishment to be given. When a dry state of the skin, restlessness and violence are present, the same author says that great benefit will be derived from the warm bath, taking care that it be not made too hot. In the Salpétrière he orders it to be continued about two hours, and sometimes so long as eight hours daily, and never finds it induce debility when forty-eight hours are allowed to elapse before its repetition. Cold applications to the head, while the patient is in the bath, are considered useful. In his practice, the cold bathing is rarely resorted to in any form.

I have never seen a warm bath carried to the same extent elesewhere, and therefore cannot offer an opinion of its propri-

ety or safety; but I have witnessed its good effects, after due depletion, so often on a more limited scale, that I consider it a remedy of great power, and it is now pretty much employed in our public asylums, so that before long, we may expect to be in possession of fixed rules for guiding us with more precision to the states in which it is applicable. As a preventive, and in procuring sleep, where narcotics cannot be given, it is very valuable. Mr. Davidson informed me, that in the Lancaster Asylum, a bath at 85° was used twice a week, as a means of cleanliness, for all the patients indiscriminately, and with excellent effect; and that, as a remedial agent, the cold or tepid shower-bath was in common use, after local depletion, apparently in the description of cases we are now considering, and that its effects in diminishing increased action, reducing heat and restlessness, and soothing the patient, were very marked; and unattended by any bad consequences, either of reaction or any thing else. From its utility and safety in such circumstances, it is repeated wherever the indications re-appear, occasionally so often as three or four times in twenty-four hours.

While the acute stage, or that attended by unequivocal symptoms of increased action in the head continues, seclusion and abstraction of stimuli are to be insisted on; but when that period is past, and the mental aberration, although perhaps equally well characterized, is not accompanied by vascular activity or congestion towards the head, but is more purely the result of what may be called nervous excitement, exercise in the open air becomes an auxiliary of the first importance; but I shall defer farther allusion to it till I come to the moral treatment.

Antimony, in nauseating doses, emetics, digitalis, calomel, and opium, and a variety of other remedies, have been employed; but their administration must be regulated by the ordinary principles of therapeutics, and need not be specially dwelt upon here.

The same kind of diet is not suitable for every kind of insanity. In that depending on increased action, especially at its commencement, the food ought to be reduced in quantity, and

to consist of the plainest and mildest articles, avoiding animal food, wine, porter, and every thing else that heats, excites, or irritates. Milk, farinacea, eggs, light bread-pudding, and articles of a similar nature, are alone admissible. But after the excitement has subsided, we must be careful not to delay too long returning to a more nourishing diet.

The same principles, in short, must regulate the treatment of affections of the brain as of every other part. The brain, as a part of the animal frame is subject to the ordinary laws by which the animal system is regulated, and the constant endeavor of the physician must be to apply the same principles to the study and treatment of its pathological conditions, which he takes for guides on every other occasion; and never to allow morbid action to go on in the brain unchecked, which, occurring in a less important situation, he would at once proceed to obviate. Ignorance has led to inactivity, and it can scarcely be doubted that madness has often become incurable, only from not having been treated. Broussais, in alluding to this, remarks, with much justice, that, manifold as have been the blessings resulting from the benevolent and philosophical labors of Pinel in inculcating mildness and humanity in the management of the insane, evil has in some degree arisen from his comparatively total neglect of active medical treatment; as the weight of his well-earned reputation went to enforce his faults or omissions almost as much as his positive virtues. But indispensable as moral means are, 'they are preposterous,' as is well observed by Dr. Ramsay, 'as the sole, or even the chief, remedy of madness, where the cause is of a physical or corporeal nature, as it very frequently is; or, as it always is, according to the opinion of many learned and able physicians. In such cases our reliance on moral regimen were as absurd as a course of logic for the delirium of typhus fever, or that which follows a fracture and depression of the skull; and in every modification of insanity, we continue to meet with a pressing demand for the aid of medicine in restoring the functions of the body and mind to a natural and healthy state.' This is the evidence of a practical man, and not of a theorist.

As mentioned in the preceding chapter, there is a state of the nervous system very different from, and in some respects opposed to, the preceding, yet attended by the same exaltation of passion, the same aberration of intellect, and the same kind of mental symptoms; assuming at one time the form of pure maniacal excitement, and at another, that of deep depression and melancholy; and in which depletion and the antiphlogistic regimen, instead of benefiting the patient, add to the violence of the disease. This state is much less frequent than that connected with increased vascular action; and is to be distinguished from it by a careful examination of the constitution of the patient, the nature of the exciting causes, and the absence of the usual signs of vascular activity. Sometimes, however, the diagnostic signs are extremely obscure, and it is only by the cautious trial of remedies that its true nature can be ascertained; and, in this respect also, the analogy holds between the acute diseases of the brain and those productive of insanity. I have already alluded, on page 271, to a class of acute insiduous and dangerous affections, mentioned by Dr. Abercrombie, as often assuming the appearance of mania. In the second edition of his work, that able physician and acute observer has added a case which occurred to him after his first publication, and which, being full of interest and instruction, and bearing directly upon the present subject, I shall now quote. The patient, 'a lady aged 38, was recovering from her eleventh accouchement, when, at the end of a fortnight, she became affected with a deep-seated hard swelling in the right side of the pelvis, which was tender to the touch, and was accompanied by a considerable degree of fever. After repeated topical bleeding, and other remedies, the febrile state subsided, the swelling lost its tenderness, and seemed to be gradually diminishing in size, but its progress was very slow, and, after three or four weeks, she was still confined to bed, and suffering a good deal of uneasiness; her pulse was now calm, but she was considerably reduced in strength. At this time she became, one day, alarmed and agitated by some fam-

ily occurrence, and immediately began to talk wildly and incoherently, and, after a restless night, was found next day in a state of the highest excitement, talking incessantly, screaming and struggling, with a wild expression of countenance, and a small rapid pulse. She was treated by topical bleeding, laxatives, cold applications to the head, &c. but with little or no benefit; and, on visiting her on the following day, I found her sitting up in bed, with a look of extreme wildness, both her hands in constant motion, talking incessantly and wildly; and I learnt that she had not ceased talking for one instant for the last twelve hours. Her pulse was now rapid and feeble, and her countenance expressive of exhaustion. In consultation with a highly intelligent friend who had the charge of the case, I mentioned my experience of the fatal nature of the affection, and proposed to make trial of treatment by stimulants. A glass of wine was accordingly given, with evident abatement of the symptoms, and it was ordered to be repeated every hour. At the end of the fourth hour, she was perfectly composed and rational, her pulse about 90, and of good strength; and, from this time, there was no return of the symptoms,' the lady having regained her health, and gone through with another accouchment in the most favorable manner.*

Dr. Abercrombie remarks, that in several other cases of a similar nature he has employed the same mode of treatment with equal success; and that the chief difficulty lies in deciding upon the particular cases to which it is applicable. They appear, he adds, to be those in which the excitement is accompanied by a small and rapid pulse, and an expression of paleness and exhaustion; and, when these characters are present, *however violent the excitement may be*, he has not been deterred from giving stimulants, and, in several instances, he has found this practice successful. He has tried it in cases of common insanity, accompanied by paleness and bodily weakness, *and a natural pulse*, but has not seen the same benefit follow. These remarks deserve much consideration.

* Abercrombie on the Diseases of the Brain, 2d edit. p. 67.

I have observed that the maniacal state which bears an affinity to the above, is to be distinguished not by any peculiarity in the mental symptoms, but by a careful examination of the constitution of the patient, the nature of the exciting causes, and the absence of the usual signs of increased vascular action. The above case illustrates these positions, as we have first the debilitated condition of the patient, her long confinement to bed, and the previous calmness of the pulse, as indications of a state of the system not prone to sudden inflammatory action; and, secondly, we have the wildness and incoherence following IMMEDIATELY *upon alarm and agitation;* and, thirdly, high excitement, screaming and struggling, and a small rapid pulse. The alarm being a direct stimulant to the cerebral organs to which it addressed itself, and the incoherence being *immediate*, not that of gradual origin consequent upon over-action of an inflammatory character, afforded a presumption of the excitement being chiefly nervous, a conclusion, the soundness of which the result of the treatment made afterwards apparent.

I have said, that different as this state of the nervous system is from the Hypersthenic, it may nevertheless give rise to the same maniacal excitement, or to the same profound melancholy; and it is necessary to keep this in view, as the depression of melancholy indicates *excitement* of one part of the brain as much as the fury of mania does that of another. Of this fact we have a striking proof in another case of a similar nature which occurred to Dr. ABERCROMBIE. The patient, a gentleman, aged 44, suddenly became affected without any known cause, with *extreme depression of spirits, accompanied by a good deal of talking and want of sleep*, which, after two days, went off suddenly. He then recovered excellent spirits, and talked cheerfully. This was, however, soon succeeded by a state of excitement, with rapid incoherent talking, and obstinate watchfulness, and the pulse rose rapidly to 160; and in four days he sunk. In this instance, the phrenologist would be inclined to consider the extreme depression of spirits, tendency to talking and the want of sleep, with which the disease set in, as the re-

sult of morbid *excitement* of one part of the brain, quite as much as the incoherent wildness and obstinate watchfulness proceeding from excitement of another portion. Both cases, however, are very valuable, as showing the co-existence of great mental excitement, with a state of brain requiring the use of stimulants, and showing, after death, no traces of active inflammatory action.

The cerebral state which gives rise to the asthenic forms of insanity, seems to be allied to that condition of the brain in fever, in which, after the period of excitement is past, wandering and delirium still continue from the irritability of weakness, and are removed by the cautious administration of wine, nourishing food, and opiates, which, if given earlier, would have increased the aberration. This affinity is still further exemplified by the fact, that after depletion has been carried to its fullest admissible extent in mania, with increased action, the alienation often continues unaltered for several months, and is only exasperated by perseverance in the same treatment, while it is alleviated or cured by nourishment, tonics, exercise, and and mental occupation properly regulated. Deprivation of a due supply of food to the patients in this state is followed by decided aggravation of the insanity, and often by its conversion into incurable fatuity. During the famine at the early part of the French Revolution, this result was common in the asylums of Bicètre and the Salpeétrière ; and Esquirol even says, that nothing contributes so much to the nocturnal quiet of a lunatic establishment as allowing meat and drink during the night to such patients as really desire them. And hence, as the mass of patients in confinement are beyond the active stage of the disease, the liberal allowance of food now ordered by the standing rules of almost all asylums.

The cure of the asthenic state, says Dr. Spurzheim, is to be attempted by tonics and a nourishing, but not stimulant diet, avoiding spirituous or other stimuli. Friction on the head, with volatile liniments, ether, and cold lotions, are, he thinks, very useful ; and bitters, sulphuric acid, and bark, do great good ; but tea, coffee, and wine should be avoided. Regular exercise of

the bodily powers out of doors, and employment of the mind within, with an occasional tepid bath, of short duration; and in warm weather the cold bath, with steady friction of the surface, are of great importance.

Whether the asthenic state be considered as a primary affection, or merely as a stage of the hypersthenic, it is obviously of great consequence to distinguish between them when presented to us, as our practice must be guided by the facts, and not by the theory, with which they are connected.

It is chiefly in insanity depending on irritability of the nervous system, that tonics, antispasmodics, henbane, opium, columba, iron, bark, &c. are serviceable when seasonably administered, and the bowels are attended to. Even a copious draught of cold water during a paroxysm will sometimes act as a sedative, and give speedy relief. Agreeable exercise, change of scene, and employment suited to the strength and habits of the patient, will also greatly assist. It is this variety that bears the strongest analogy to the other purely nervous affections, and requires to be treated according to the same rules. Dr. Burrows has some good remarks on it when treating of narcotics.

The preceding observations, I repeat, are offered merely as hints for future inquirers, and not as affording positive instruction. They are both meagre and imperfect; but neither the present state of our knowledge, nor the scope of this work — which was intended chiefly to point out in what manner the further investigation of the subject might be most successfully pursued — admitted of greater detail. But I trust enough has been said to show the reader that a fruitful field lies before him, ready to yield an abundant return for any labor he may bestow on its cultivation, and that he has instruments in his hands adequate to the removal of most of the difficulties now so thickly besetting him.

Being more anxious to direct attention to the principles by which medical treatment ought to be regulated and improved,

than to attempt an exposition of individual remedies, or their application to individual examples, I prefer occupying the remaining pages with the discussion of such general rules as apply, in one way or other, to every description of cases, and the rationale of which it is therefore essential thoroughly to understand.

Having ascertained the existence of insanity, the first question comes to be, what is to be done with the patient? Is he to be treated at home, or is he to be forthwith sent to an asylum? We all know that, in such circumstances, the common and almost uniform practice is to shut him up; but before assenting to this very decided step, let us carefully inquire what grounds are sufficient to warrant the seclusion and confinement of the lunatic.

There are only two reasons which can justify our depriving any insane person of his liberty and civil rights. The first is, advantage to himself; and the second, protection to others, from the injuries he would, if at liberty, inflict upon them. If the subject be a maniac who, in his paroxysms of rage, is so strongly impelled by morbid passion as to possess no control over his own actions, and to wreak his infuriate vengeance upon his dearest friend or upon himself, as unhesitatingly as he would upon the lowest of the brute creation, there cannot be two opinions as to the necessity of secluding him from society, and taking means to render his violence innocuous. Or if, without any external impetuosity of manner or apparent wildness of expression or of action, he be an individual in whom reason is so entirely upset as to disturb the perception of his relations to others and to the external world, and consequently to risk his acting under erroneous impressions, to the manifest danger and insecurity both of himself and those about him; or if he be one in whom, without betraying itself by any outward sign, except perhaps depression and love of solitude, weariness of life exists to such a degree as to lead to constant meditation on the means of self-destruction, and to its actual accomplish-

ment, when, to an unobservant eye, he may seem most calm and careless, every one will agree that kindness to the patient demands that he should be placed under due restraint till the return of sounder reason.

But the indications are very far from being always so decided as in these suppositions. We may be very certain that insanity exists, and yet have great difficulty in determining whether the patient should be removed from home, and placed in an asylum. It is one thing to determine that a man's mind is in a state of disease, but it is another and very different thing *to determine to what extent the affection has extended; whether it involves only one, or a few, or the whole of the mental powers; and how far it affects his capacity of proper self-direction in his intercourse with society.* For insanity is not a specific state, always marked out by well-defined lines, which, when it occurs, necessarily unfits a person for mingling in society and in business with his fellow men; but, like affections of other organs, it is a morbid state, which may manifest itself in every posssible degree, from the most obscure to the most striking departure from mental health. Every body knows, for instance, that an individual may be *incurably insane* on all subjects hinging upon one or two faculties of the mind, and yet be perfectly rational and sound on all others; and that in all matters of thought or of business, which do not touch upon that point, he may continue for years, and even for the remainder of a long life, to display as much shrewdness, prudence, and good sense as nine out of ten of those who never had the fear of a strait waistcoat before their eyes; and every one conversant with the insane is aware, that in practice every possible gradation is to be met with, from an insolated affection like the above, to one involving all the faculties of the mind. And, consequently, the true problem to be resolved, where the rights of liberty and of property are concerned, is not so much whether mental derangement exist, but *whether it has extended so far as to deprive the individual of the power of sound judgment in his own affairs, or of regulating his own moral conduct, so that he shall not*

*endanger the welfare either of others or of himself.* Numerous cases, indeed, exist around us of partial affections of the mind, which do not interfere in any marked degree with the business habits of the patient, and in which, therefore, it would be the height of cruelty and injustice to deprive him of civil or moral liberty, but in which, at the same time, every conscientious physician, if judicially examined on the abstract question of the existence or non-existence of insanity, would be obliged to answer in the affirmative. And, on the other hand, there are numerous cases which do interfere with the business habits and thinking powers of the patient, and in which removal to an asylum would nevertheless only serve to aggravate the force, and to diminish the curability of the disease ; where, with early and judicious management at home, the recovery might take place so speedily as to prevent any suspicion getting abroad as to the real nature of the illness. The question, therefore, is not devoid of difficulty ; and the grand objects to be kept in view in attempting its solution are to get rid of the hitherto inseparable association between insanity and a mad-house,and to judge of what is required from a minute investigation and consideration of the individual case, — a task in which Phrenology is of most effectual service.

There is a condition of mind, apparently involving all the faculties which may give rise to conscientious difference of opinion, and in which it becomes doubly necessary to distinguish between *disordered mind and incompetence to business ;* a distinction too often lost sight of in our discussions. It occurs chiefly in persons of a highly excitable and irritable temperament, who, from trifling causes, are carried away by trains of thinking, or idiosyncrasies of feeling, which less susceptible persons experience only after a succession of the most powerful impressions. Persons so constituted pass years of their lives apparently on the verge of insanity, without its ever becoming decided, unless a hereditary predisposition exist, in which case they generally sooner or later lapse into lunacy. In the mean time, however, they are remarkable for unequal

spirits, for doing odd things and manifesting strange feelings; but, upon the whole, they conduct themselves so much like other people, that although every one remarks that they have their peculiarities, few will venture to pronounce them *insane*. But, in such cases when the transition to insanity does occur, it is so gradual, that the most experienced physician, even after maturest examination, is often left in doubt as to the extent to which the disease has proceeded; and, while he feels that the individual is not in a condition to be left entirely to his own guidance, he is at the same time conscious that he retains too much soundness of mind not to be injured by the premature interference either of friends, of doctors, or of lawyers.

The point of difficulty for the physician, therefore, and that for the solution of which we would, in many instances, ardently long for the assistance of an intelligent jury, is to determine, not the mere existence of a mental affection, but *the limit at which that affection begins to deprive the individual of the power of proper self-direction, and at which, therefore, it becomes the duty of the law, and of the friends, to step in for his protection*. The right solution of this problem is no easy task; for it requires in the jurors not only clearness of perception, and soundness of judgment, but a knowledge of human nature, and an acquaintance with the general functions of the body, and with the previous habits and constitution of the suspected lunatic, which unhappily, under our imperfect systems of general education, very few persons are found to possess. And it is in vain to seek for any general rule to help us out of the difficulty; for every human being presents so many points of difference in mind and in body, and in the external circumstances modifying both, that every new case requires the same impartial examination, the same careful analysis, and the same accurate consideration of all the attendant phenomena as the first that ever occurred to us; and he who, disregarding all these conditions, hastens to form his opinion from the applica-

tion of the general rules, will inevitably fall into error, and be the cause of much misery to those who confide in him.*

Even after having determined that the individual is insane, and incompetent to the management of his own affairs, it by no means necessarily follows that confinement will promote his recovery; and this distinction ought never for a moment to be forgotten. Having disposed of the civil question, and provided for the safety of the patient, and for the preservation of his property, the inquiry, whether his restoration to reason and sound mind will be best promoted by treating him at home, or in a private house, or by sending him to an establishment for the express reception of lunatics, next presents itself to the physician, and must be resolved on different grounds. And here, again, the evils of applying general rules to all cases indiscriminately, become apparent. Because confinement is beneficial to the recovery of one class of patients, it has been supposed that it must be equally advantageous for the recovery of all; and to pronounce a person insane, and to send him to a madhouse, have thus come to be considered as almost the same thing; when, in reality, the difference of the disease, and the constant variety of features which it exhibits, render sameness of treatment an utter and injurious absurdity.

Every case ought to be considered in itself, and a treatment in harmony with its own indications resorted to. The patient, for instance, ought never to be sent to an asylum when the means of treatment are equally accessible, and the probabilities of his restoration equally great at home. But if the nature of the derangement be such as to require that constant watchfulness and decided control, which can only be obtained in an establishment devoted to this purpose, there can be no hesitation in deciding upon removal. In such circumstances, the comfort, as well as the safety, of the lunatic demand seclusion;

* It may be proper to state, that the substance of the above remarks appeared in an article, which I published anonymously in the *Scotsman* of 6th February, 1830, from which they were shortly after transferred to several of the medical journals.

and his feelings are less outraged at restraints put upon him by strangers, over whom he never exercised any authority, either of affection or of duty, than by his own family and friends, on whose consideration he is conscious of possessing stronger claims, or whose sympathies he may hope to rouse by the continued and persevering appeals to their kindness and to former friendship. It is on this account that it is common to see maniacs who, in the bosom of their own families, were all turbulence and outrage, become at once peaceable and submissive when taken charge of by strangers. And, whether we look to the ultimate cure or temporary comfort of the patient, it is assuredly an act of direct kindness towards him to withdraw him from the influence of incessant irritation, and place him where the temptation to excitement is diminished, and its room supplied by whatever can soothe and tranquillize.

Where the causes productive of the disease have been in long-continued operation within the sphere of the domestic circle, and the morbid associations have, as often happens, connected themselves inseparably with his own family or friends; the recovery of the lunatic will be greatly promoted by removal from home. In many instances, those formerly most loved become the objects of hatred and suspicion, and their presence tends only to provoke and increase the activity of the disorder. The very walls of the house, the scenery amidst which it is situated, and, in short, every thing capable, from its connexion with the past, of exciting an interest in the patient's mind, give new vigor to his morbid associations, and retard the return of health and reason; while a change of scene and of society, and the well-directed kindness and care of strangers, by giving a new direction to feeling, and a new impetus to thought, are often attended with the most beneficial effects upon his general state, and prepare him for the ameliorating operation of both medical and moral treatment.

If, however, the mental disturbance be of very recent origin, or the speedy result of powerful causes operating beyond the sphere of his own circle, or of a nature not involving the true

relations subsisting between the lunatic and his friends; or, if it be obviously dependent on bodily disorder of a temporary and curable kind, such as occurs after parturition, or from acute digestive derangement, the patient ought, on no account short of absolute necessity, to be removed from home till a fair and systematic trial has been made of the proper means of cure; and the case has fallen, from their failure, within the provisions already alluded to. To act otherwise would be to risk the conversion of a temporary, or curable fit, into a permanent and intractable disease; for no situation can be conceived more distressing to the feelings, or hurtful to the reason, of a person so situated, than, on the dawning of reason, to find himself classed with the insane, and subjected to all the restraints of a mad-house. Many, who have been hurried into premature confinement, have, by the very act, been fitted for remaining the tenants for life of the cells to which heedless rashness had at first consigned them.

Even where the aberration has taken gradual root amid the associations of home; and where the violence of the symptoms seems to require restraint and watchfulness, a great deal more may frequently be effected by placing the patient under the direction of a physician and the superintendence of strangers, either in his own house or in one hired for the purpose, than by confinement in an asylum, especially when there is no strong hereditary taint; and the cause has been purely external; and assistance is called in at the commencement of the disease. By proper management and consistent treatment, the patient may, in many instances, be restored to health and to society in a few weeks or months, with much greater security for the future, than if oppressed with the recollections of confinement. But if the disease has been of long standing, and has arisen chiefly from the mental tendencies and constitution of the patient, little advantage is likely to accrue from this plan, and the preference ought to be given to a well regulated asylum, from the superior means which such an institution affords for enforcing regularity and order, and the various

other measures conducive to the safety, comfort, and recovery of the patient.

When, as too generally happens, the period for active measures is gone by before medical advice is called in, almost every thing must then depend on the proper regulation of the moral treatment, which embraces in its sphere every thing which acts directly upon the mind, and its various faculties of sentiment, propensity, and thought. And here it is impossible not to lament the prevailing ignorance of human nature, which we meet with in every quarter, when we attempt to secure the co-operation of others in subjecting the patient to a proper moral regimen. For want of a philosophy of mind, based upon observation, and applicable to the affairs of life, in those to whose care the patient is entrusted; from the consequent want of acquaintance with the springs which rouse any given faculty of the mind into action; from want of tact in touching these springs, and the jarring and discord arising from accidentally grating upon those chords which ought to have been left untouched; the best concerted and most promising schemes of the practitioner are often defeated, and irreparable mischief done, where every anxiety was felt, and every effort made, to promote his cure.

It is, indeed, too true, that ignorance of the philosophy of the human mind, and of its relations to the brain as its material organ, is one of the greatest obstacles, not only to the present cure of the insane, but to the farther advancement of our medical knowledge of insanity; and till this truth shall be recognized in its fullest force, and the principles of Phrenology be adopted as the physiological, and therefore the surest, basis of a mental philosophy, we shall look in vain for those ameliorations in the management of the insane which are so imperatively required. The numerous publications which have lately appeared, afford demonstrative evidence that the subject of diseased mind, decidedly the highest of which medicine can treat, is at last attracting a degree of notice proportioned to its deep interest and inherent importance; and engaging in its cul-

tivation, men of higher talent, greater philanthropy, and more extensive acquirements, — men, in short, more qualified to do justice to the investigation than have hitherto ventured upon this field of inquiry. But the inconsistency of mankind has ever been remarkable, and never was it more conspicuously displayed than in reference to this very subject. Regarding the mental operations as at once the most elevated and most complicated which can become the objects of human inquiry, as those which confer dignity on man, and raise him pre-eminently above the brute creation by which he is surrounded, we have for many centuries considered the profoundest and most comprehensive minds as alone equal to the task of analyzing the phenomena and developing the philosophy of mind, and of tracing out the numerous applications of that philosophy to education, to morals, to legislation, and to every other purpose of improvement to which the mind, in health, can be directed. But, by an unaccountable perversion of understanding, the moment that our natural difficulties are multiplied in number and increased in force by the addition of *disease*, and that we stand more in need than ever of the soundest judgment, nicest discrimination, and most extensive acquaintance with sound philosophical principles to guide us in the intricate, but most interesting, duty of ministering to the *mind diseased*, and attempting its restoration to health and happiness, — precisely at that point we consider the subject as of too low and degrading a character to merit the notice of the educated and intelligent philosopher and physician, and as fit only to occupy the attention of the rude and illiterate keeper, whose *highest* claims to our regard consist in his physical strength, firmness, courage, kindness of disposition, and common sense, without one particle of acquaintance, either professed or implied, with those philosophical views which the talented and eminent men alluded to, the lights of their ages, have been elaborating from their brains for the last two thousand years! Never was a more biting satire penned or printed than this simple fact, or one more instructive in the conclusions to which it leads us.

What would be thought, for instance, of our NEWTONS, our GALILEOS, and our LAPLACES, and of the principles which they dedicated their lives to unfold, were we to find their labors equally barren in results, and the practical mariner borrowing his astronomical lights solely from the illiterate but observant shepherd? Or, what would we think of the science of chemistry, and of the labors of a DAVY, a BLACK, or a VAUQUELIN, were we to find them thrust aside as useless and vain speculations, and the ill-informed operative, instead of a WATT or a BOLTON, directing the construction of a steam-engine, without any knowledge of the properties or laws of the power he was seeking to wield? And yet the parallel between these supposed examples, and the place occupied by philosophers on mind in regard to the treatment of the insane, is complete and unbroken; and to me it seems as clear as demonstration, that were medical men, and society at large, better informed in regard to their own nature and constitution, and to the relations in which we stand to each other and to external objects, we should be much more successful, not only in curing insanity, but also in preventing its attacks.

In prescribing for the morbid conditions of other parts of the body, we find it necessary to regulate the functions which they perform in such a way as to assist, or at least not to interfere with, the beneficial action of the remedies employed. If the lungs are affected, we forbid exercise, loud speaking, or wind-instruments; because all these tend to accelerate *respiration*, and this necessarily involves increased action in them. If the eye is inflamed, we regulate the admission of light and the exercise of *vision* according to the same rules. In affections of the brain, therefore, whether of an acute or less active kind, we ought, in ordinary consistency, to follow out the same practice; and in the former to withdraw all stimuli, and in the latter to modify their agency, so as to secure beneficial results. When, for instance, we meet with a lunatic suffering from excitement of the organ of Cautiousness, as manifested by gloomy, desponding, and harassing anticipations of future evil, we ought to be scru-

pulous in avoiding every thing calculated to act further upon that particular mental function, as this would inevitably rouse it to higher activity, and make matters worse; or, when we see an individual suffering from morbid exaltation of Veneration, and a prey to the mental symptoms by which it is characterized, we ought carefully to withdraw him from the presence of every object which addresses itself to that faculty till the disease is mitigated, and its renewed exercise becomes requisite to restore it to health. This, accordingly, forms the first grand principle in the moral treatment of the insane, and it is one for the application of which Phrenology affords many facilities. By unfolding to us what the primitive powers of the mind are, and the objects and relations connected with each; and further, by enabling us to distinguish with accuracy the natural dispositions and talents of the patient, or the proportionate strength in which every individual faculty is possessed, Phrenology gives us a power of acting, and of adapting external circumstances to the exigencies of the case, with a precision, confidence, and consistency, which it is impossible to obtain in any other way. We have already seen, that, in the great majority of cases, the madness takes its character from the predominant organization and mental endowment,* and that many lunatics possess the power of concealment and deceit to a degree that frequently defies scrutiny. Now, it gives the physician immense command over such patients, when by the examination of the head he can, as generally happens, discover the natural dispositions so accurately as to know what are the probable points of attack in the mental constitution; when to be on his guard against counterfeit and subterfuge; and what class of motives or line of mental discipline is likely to be attended with the best effects in subduing excitement, and promoting the return of reason. In enabling him to detect the machinations of the cunning, and the devices of the suicide, it is also of signal advantage, as well as in adapting the required precautions to the

* See pages 142, *et. seq.*

character on which they are intended to operate. When he finds a large endowment of Secretiveness and Cautiousness, combined with predominant animal organs, good intellect, and only moderate *moral*, he will at once feel that, however correct, plausible, and rational his patient may seem to be, he is in reality a dangerous neighbor, and in a state demanding the closest watching and superintendence.

Phrenology assists greatly in enabling the practitioner to keep his temper calm and unruffled amidst the insults, and sometimes blows, directed against him, and to overawe the maniac by the union of firmness, kindness, and reason, under the severest provocation; and this is an advantage of no small moment. Perceiving in the maniac's rage the blind outpourings of excited Destructiveness, and aware that even there the higher feelings of our nature will often respond to their exhibition in himself, the physician can sometimes allay the storm with perfect safety, by merely addressing himself in kindness, sympathy, and confidence to the patient's moral nature; for, in almost the worst instance, there is some link or other with humanity, which, if properly taken advantage of, will soothe and comfort the patient; whereas force and restraint, injudiciously applied, will rouse ungovernable fury, not unattended with danger to life. I have seen a patient in this state resist for hours the united efforts of four or five of the strongest men, and in a few minutes led away without disturbance by one individual, whose only means of coercion, were mildness, tact, and firmness.

Connected with this, I may remark, that a hurtful error is prevalent in supposing that all lunatics are inaccessible to reason, and insensible to the ordinary feelings of humanity, and that, therefore, it is lost time to attempt to influence them by rational and consistent kindness and friendly intercourse, and quite unnecessary to be scrupulous or otherwise considerate in what we say to them, as they can neither remember nor judge with accuracy. This, however, is a most pernicious error, favorable only to unworthy deceit, ignorance, and indo-

lence. In the majority of cases, some, however few, of the faculties remain unaltered, and even in those which apparently involve every feeling and faculty, there are glimpses of reason, and tendencies to right and sound action, which, as in all other diseases, ought to be fostered and strengthened into vigor. It is for this reason that it is injurious to recovery to limit the intercourse of the insane to those who are themselves insane, as is done in our public establishments, where the only rational creatures with whom the patient can associate are his keepers and superintendent, men generally of little intellectual superiority, knowledge, or learning, and of little refinement of manner or feeling. Not only is the intellect thus deprived of the ameliorating influence of sound exercise in others, but the feelings, already separated from every object to which formerly value was attached and affection engaged, are thus left ungratified, and perhaps disgusted, and delicacy hurt by the scenes to which they are inevitably exposed ; and in proportion as reason and health return, the evil becomes more afflicting, and its effects more injurious in retarding restoration.

The more nearly we can approximate our treatment of the insane to that of reasonable beings, the greater will be our success. We ought never to deceive them, to do a single act, or utter a single expression to them, which we would not do supposing them to be perfectly sane and able to judge of their own state, and of the propriety of our conduct towards them in the circumstances. One piece of deceit, however harmless, will forfeit confidence as soon as detected, and none are more acute in its detection than the insane. It is, besides, not only bad in itself, but hostile to moral discipline, as it authorizes deceit in others. Consistency and integrity may fail for the moment to soothe the patient, where deceit might for the moment succeed ; but the purchase of present quiet on such terms is too injurious to both patient and physician to render it advisable ; and therefore it ought not to be made. Those who wish to preserve and increase their influence over the lunatic, will be careful never to promise what they never intend to perform,

and never to fail when once they have given their word. They will also habitually consult his feelings, and show an interest in his comfort, happiness and recovery; while they will devote themselves to the removal of every offending cause, and to procuring every enjoyment and interest of society, occupation, and exercise which the patient can appreciate. So far as can be judged from Captain HALL's account of the Connecticut Retreat, already alluded to as remarkable for its superiority in effecting cures, the system pursued by Dr. TODD with such success is marked in every step by kindness, openness, and candor; and every effort is made to gain the sympathies of the inmates, and to connect them by feeling and affection with society. For this purpose, a committee of visitors, including ladies, make frequent and long visits, in the spirit, not of mere form and ceremony, but of active kindness and humanity, and the advantages resulting from such intercourse have proved to be incalculably great. The visiters must, of course, be persons of much sense, good nature, information, and tact, and have some general idea of how to conduct themselves; and, with these qualifications, their intercourse cannot fail to be grateful and salutary. This mode of addressing the feelings of the insane is, in fact, the most direct, and therefore the most powerful way of calling the mental functions and organs into healthy action. From the shyness and suspicion so frequently accompanying insanity, it may be more difficult to obtain access to the sympathies of the lunatic, and to become the object of his better feelings; but the distance and distress at first shown often give way gradually to *sustained* kindness, perfect candor, and imperturbable equanimity, under provocation. For the patient, finding by experience that he has now met with a friend who will remain steady in his benevolent efforts for his comfort, however little return he may make for the kindness shown him, and feeling secure from the attack of caprice and retaliation, at last gives way, and derives consolation, hope, and strength of mind from free communion, not only with his physician, but with such discreet, intelligent, and benevolent friends as the latter may see advisable to admit to his presence.

Moral regimen can scarcely, indeed, be too highly estimated in the cure of insanity, and it requires only to be conducted with discrimination to render it a very effectual remedy. Unfortunately the use of the term *moral* has, from its connexion with mind, withdrawn the notice of the practitioner too much from the bodily conditions under which the intellectual powers and moral feelings act, and thus deprived him of the opportunity of adapting different kinds of moral treatment to different forms of insanity ; and, accordingly, we find all the inmates of an asylum subjected to the same discipline, and their employments and amusements regulated after one general plan. If the superintendent have a decided taste for music, we shall probably find a good deal of stress laid upon its beneficial effects, and every persuasion resorted to, to induce the patients to engage in its performance, whether they have any ear or not, or whether the nature of the music be likely to excite or to soothe. In like manner, if the directors be men of sincere piety, and derive much happiness from devotional exercises, we shall probably find them recommending the indiscriminate attendance of all the patients on religious worship, without regard to the different effects which it is calculated to produce on different forms of madness. When, in fact, physiology shows that, as every emotion and every intellectual faculty are exercised through the medium of organization, excitement of these emotions and faculties is necessarily and unavoidably accompanied with corresponding organic action, and that the latter will prove beneficial or hurtful, exactly as it happens to be adapted or not to the state of the organization at the time ; just as the admission of light is beneficial in one state of the eye, but hurtful in another.

If any one is disposed to doubt the sanative power of moral regimen, let him turn to the exposition already given of the functional causes, and of their mode of action on the brain, and he will not fail to perceive, that if, as there shown, moral causes exert a more direct and energetic influence in deranging the health of the brain and mind, than all others put to-

gether, they must be equally powerful in restoring it to a sound state when judiciously applied ; for it can scarcely be doubted than an object which has power to produce disease must act too strongly on the morbid organ to leave its further influence a matter of indifference. In hypochondriacal patients, and others affected with the lesser degrees of mental disorder, we have daily the opportunity of witnessing the good done by the cheerful conversation and encouragement of a sensible friend, who has tact enough to rouse the other faculties into activity, and to withdraw dexterously the patient's attention from dwelling on his delusion. The sound faculties are thus brought into play and strengthened, new interests are excited, and a temporary oblivion of his distresses takes place, which, as allowing the morbid organs to rest, is extremely favorable to recovery. Travelling and change of scene act in the same way, and their good effects are too well known to require discussion here.

Powerful in modifying the action of the brain, as moral arrangements are thus shown to be, the practice of subjecting all lunatics to the same regimen, appears not less preposterous than would be that of subjecting all who are affected with stomachic disease to one sort of diet ; food being pretty nearly to the stomach what mental stimulus is to the brain. In society we know how variously we must address ourselves to different individuals to produce any impression upon them ; and the effect of disease disturbing the mind is not to smooth down inequalities already existing, but to make natural features stand out in harsher contrast, and therefore the necessity for discriminative occupation and appeals to sentiment becomes only the greater by the addition of disease. The neglect of this circumstance is the chief cause of the discrepant testimonies we possess as to the effects of music, of religious exercises and of various other moral remedies, which, if they act at all, must do mischief when ill applied, as certainly as they do good when used judiciously. And hence the unavoidable evils arising from lunatics associating with none but lunatics, or with keepers of no education or refinement. In such society, there

cannot be the slightest regulation of moral stimuli so as to adapt them to the exigencies of the moment, and of the individual case, and a powerful means of beneficial influence to the patient is thus sacrificed.

For the proper adaptation of moral regimen to the individual case, a combination of good feeling, talent, and knowledge, is required, which cannot be expected to exist in the ordinary uneducated keepers of an asylum; and until this part of the system is improved by the introduction of superior men to act as the friends and associates, as well as superintendents, of the insane, we can form no notion how much more successful our curative measures may become. And yet, so little is this generally understood, that it is scarcely a year since an outcry was raised in Scotland against a parliamentary enactment, extending to that country a law previously in operation in England, obliging every public asylum of more than one hundred patients, to have at least one resident medical officer, a regulation which seems to be not only highly judicious, but absolutely necessary, with a view to both the medical and moral treatment of the insane.

The subject of mind, sound or diseased, is still abundantly obscure, and we are supported by the highest and most experienced Continental, as well as British, authorities, in holding it to be impossible rightly to regulate the feelings and employment of the lunatic, or to prescribe the necessary remedial treatment, without previously studying and becoming acquainted with his vast history and habits, and with his peculiarities of constitution, temper, and dispositions. Even moral treatment, on which so much stress is justly laid, requires this preliminary knowledge to render it conducive to recovery. For, as already mentioned, it stands in something like the same relation to the mind and brain that calomel does to the bile and liver. It applies directly to, and exerts its chief influence on, the diseased organ; and therefore, unless it is conducted skilfully, appropriately, and with perseverance, its efficacy is not only lost, but perverted. But to be able to grapple with mind, and

to influence it beneficially, we must not only have mind ourselves, but we must be intimately acquainted with human nature, with its various feelings and springs of action, and with the relations of these to each other, to the external world, and to the physical system; and we must know the individual qualities of the patient, and live and associate with him, to put all these in proper operation. The mind and the body act and re-act on each other without ceasing, and therefore a knowledge of the organs and functions composing the body, and of the effects of these upon the mental states, is also indispensable. But such a combination of requisites is not to be looked for in the half-educated, although it may be, good-hearted, keeper or superintendent of an asylum. And we should consider even the professional man who possessed them all to be a singularly fortunate and valuable person. It is idle to argue about professional dignity being a barrier to the acceptance of such a situation. This is a groundless and senseless aspersion; for it would be difficult to point out a higher or more dignified office than that of restoring our fellow-creatures to reason, to usefulness, and to society. Good, then, in every sense, will, I think come out of this enactment. Professional knowledge will be increased, the prevalence and spread of insanity be checked by timely treatment, and happiness conferred upon thousands who now suffer the penalties of our ignorance.

The second great principle in conducting the moral treatment of the insane, is to give due exercise and occupation to the mental faculties and cerebral organs which are unaffected. The reader who has kept in mind the exposition of the laws of exercise, given in the beginning of this work, will not fail to appreciate the importance of this principle, and to regret the very small provision made for its fulfilment in most of our asylums. When we see the numerous instances of nervous disease, and of insanity induced by no other cause except want of occupation in persons who have acquired an independence and ceased to labor; in females who have never had any imperative employment; and in retired officers, and other indi-

viduals of the same description, it is impossible to be blind to the fact, that confinement in an asylum, without any means of mental or bodily exercise, must be extremely prejudicial to recovery. We might presume as much, indeed, from knowing that idleness and want of active interests, positively induce the disease; but we have, in addition, the direct testimony of experience to prove, that in proportion as the laws of exercise are obeyed, and the various faculties of the mind are presented with objects calculated to solicit their action, recovery goes on more favorably. All those who have acquired celebrity in the cure of insanity have been careful in providing for this requisite of cerebral and mental health; and, happily, its importance is now beginning to attract some portion of the attention which is due to it; and we may hope that the day is not far distant when every asylum will be provided with means of employment, exercise, and recreation proportioned to the magnitude of the objects to be gained by their application.

It is pleasing, indeed, to see, from the late annual reports of some of our public institutions, how much anxiety is now shown on this point, both by the physicians and directors. In several of the reports of the Dundee Asylum, for example, the subject is recurred to with an earnestness betokening a deep sense of its importance; and the erection of sheds and workshops, in which the patients may exercise their trades, is strongly recommended, and enforced by the success of similar measures in some of the best Continental and British establishments. To secure the same advantages for patients of the upper classes, who are unaccustomed to labor, a bowling-green has already been laid down, and a billiard-table is speedily to be added. In like manner, at James Murray's Royal Asylum, at Perth, in the Lancaster County Asylum, and in many others, efforts are made to employ the patients in husbandry, gardening, and other exercises, and with the best effects; although none of these hospitals have yet been provided with means fully adequate to the end in view. In the Lancaster Asylum, the patients of the lower classes are required

to make their own beds, and keep their rooms clean, and to do such other duties as conduce to general cleanliness and comfort. This practice is decidedly beneficial, both as employing them, and as giving them a pleasing sense of their being useful, and not mere drones in society. The perfect order and neatness which reign in every department would do credit to the best regulated family.

Difficulty is often found in inducing lunatics to work; and sometimes every motive fails to have any effect. Much may, however, be accomplished by good-natured perseverance, by well-timed appeals to sense and reason, and *especially by the moral influence of example*, which goes almost as far with lunatics as with children. With this view the social co-operation of men of sound mind, interspersed with and engaged in the same labor as the insane, is of great consequence in attaining regularity, method, and submission to discipline. The explanation of this must be obvious to every one; and the attempt ought never to be abandoned but from absolute necessity. So far as I have seen, I would say that, after vascular excitement has been subdued in the commencement of the disease, while restlessness, sleeplessness, and want of command over the feelings are still conspicuous, and an uncontrollable current of ideas and sensations continues to pass through the mind, and the functions of the nervous system are in a state of exaltation, nothing acts so decidedly as a sedative, as abundant and often repeated muscular exercise in the open air. If it be had recourse to too early, it increases the intensity of the symptoms and the flow of blood to the head; but when, on cautious trial, its safety becomes apparent, it can scarcely be pushed too far. In several instances I have heard patients expatiate on the advantage they derived from perseverance in this plan. Whether it is that the muscular exercise acts as an outlet to the superfluous nervous energy, which would otherwise accumulate and lead to restless excitement, or by what other principles it may be explained, I shall not venture to determine. The fact, however, is certain, and I have seen

comparative composure of mind, sound sleep, and clearness of thinking, return under abundant exercise where no other means had any effect. Nor does this seem wonderful, if we look to the relative occurrences in health. We know perfectly, by experience, that nothing presents so powerful an obstacle to mental activity as bodily fatigue ; and if we find the sailor boy in his first engagement, dropping asleep from pure bodily exhaustion, in the midst of the din, confusion, and danger of a battle, we may rest assured, that both the same man and the lunatic will be more disposed to slumber and repose, and less inclined to brood over their cares and distresses in continued watchfulness, when they have subjected themselves to the influence of bodily labor and the open air, than they would have been if left quietly to their own meditations. In accordance with this, it is notorious, that those classes of the community who are incessantly employed in severe manual labor are almost incapable of sustained intellectual exertion, and generally go to sleep under the attempt, while those engaged in more sedentary employments, and who do not expend their nervous energy in muscular efforts, such as weavers, &c. are men both of keener sensations, quicker perceptions, and a more reflecting turn ; and they it is, accordingly, who, among the lower classes, are the critics in all that concerns either Church or State : and therefore, in causing the lunatic to expend his nervous excitement in bodily labor, it is quite natural to expect that his feelings should become more composed, and the current of his thoughts less rapid and confused, and more under his own control. Nothing can be acting more in the spirit of true philosophy than for a man to *walk off* his rage when he finds he cannot restrain it.

A striking example of the efficacy of this method in the cure of cerebral excitement, occurred to me in the young friend who nearly lost his reason from excessive study and anxiety to pass a good examination. His eyesight, as already alluded to, gave way under continual reading, and he remained blind for several weeks. His brain was, at the same time, in a state of

involuntary activity, bordering on mental derangement, which, indeed, he seemed to escape only from not being predisposed toits attack, and by the cause being purely external. After the acute symptoms were mitigated by local depletion, removal of stimuli and other means, he was removed to the country, and enjoined to be constantly in the open air, and to keep his mind unemployed. His sight then gradually returned ; but for some time after, on attempting to read, the page soon became confused, and his thoughts bewildered and uncontrollable by any effort, while restlessness, tightness across the head, and indifferent sleep, continued to molest him. In this state, he was desired to leave his book the moment his powers of reading and attention began to give way, and to take a long walk, short only of absolute fatigue, and to repeat this as often in the day as might be necessary. A few days trial satisfied him so thoroughly of the propriety of the advice, that in a short time he was walking daily to the extent of fifteen or twenty miles, in divided stages, and, before the lapse of two or three weeks, he found himself able to extend his reading from half a page to nearly half an hour at one sitting ; while his unpleasant feelings subsided, and sleep returned in the same proportion, and before many months he was perfectly restored.

I have known the same method followed in instances of ordinary derangement with equal success, and have received strong testimonies from more than one patient of the comfort resulting from it in the subsidence of irritability and the increased power of attention which it bestowed. Of course it does not supersede the exhibition of medical remedies, or of strict attention to regimen, but on the contrary promotes their beneficial action, for in every case the combined means suited to its nature, ought to be put in requisition. It is in this way that travelling through interesting tracts of country, in the company of an intelligent companion, does so much good, especially when long excursions are made on foot, and a sufficient motive is in play to compel the exercise ; such, for example, is travelling in a hilly country, where much of the best scenery

can be reached only by pedestrians. In such circumstances, even in spite of the patient, external objects make an impression on the sound faculties, and conduce to tranquillity.

After the preceding observations were written, I met with a strong and gratifying corroboration of their accuracy in the Tenth Report of the Directors of the Dundee Asylum, being that for the year ending in June, 1830, and for which I am indebted to the kindness of a friend, who takes an interest in the subject. The new superintendent, 'Mr. Mackintosh,' says the Report, 'immediately upon his appointment to the charge of the Dundee Asylum, anxious to qualify himself in the most perfect manner for the discharge of his duties, set out on a tour of inspection of all the most celebrated Lunatic Hospitals in Britain, and also of the Salpetrière at Paris, and the Royal Lunatic Asylum, and Dr. Esquirol's private establishment at Charenton. In all of these he found employment more or less resorted to as one of the most powerful efficients towards cure; but, in one establishment in particular, *the beneficial effects arising from it have been such, as to render restraint and confinement seldom, if ever, necessary, and the patients enjoy a freedom scarcely inferior to that which a person enjoys who is under no control.* During their lucid intervals, they are permitted to attend their respective places of worship on Sundays, to go into the town occasionally on the other days of the week, and to take short excursions into the neighboring country, sometimes accompanied by an attendant, and sometimes not; and although opportunities are thus afforded them of effecting a temporary escape, yet but one attempt of the kind has as yet been made, and every individual after his walk or ride returns to the asylum as to the home of his choice. This state of *rational quiet and considerate composure* is to be attributed, in a very great degree, to the *useful occupations or healthful amusements* in which the patients are *regularly* and *systematically* engaged; which, by calling off the thoughts from the objects or associations, which would otherwise disturb them by day, contribute to induce during the night tranquil repose and

refreshing sleep. With these facts before their eyes, the Directors feel it to be a duty imperative upon them to fall upon some plan, without delay, by which the laboring class of patients in the institution, under their care, may be employed in those labors and trades to which they were accustomed previous to their confinement.' It is delightful to see talent and philanthropy thus going hand in hand, and adopting the dictates of enlightened experience.

In the less severe affections of the mind, such as are commonly included under the designation of hypochondriacal, and also in the earlier stages of common derangement, well regulated exercise and mental discipline, when combined with proper medical treatment, will often go far, without confinement, to restore a healthy state of feeling and of thought. The want of perseverance is a frequent cause of failure, but when, by the co-operation and cheering encouragement of the friends, the plan is carried through, it seldom fails to do great good. Dr. Abercrombie, in his recently published work, mentions that he has found nothing so useful with this view as the study of a regular course of history, the leading events being distinctly written out with the proper dates. He has tried the experiment many times, and often succeeded in preventing the development of confirmed insanity where the patient was previously fast advancing towards it. The impossibility of fixing the attention, complained of at first is part of the disease, and gradually yields to repeated application.* The course of reading may be varied, if necessary, to suit the habits and tastes of the patient, but it ought always to be conducted on the same principle — of steady regularity.

I have mentioned, that, as a general rule in directing the minds of the insane, we ought to allow the disordered feeling or current of thought to remain as much as possible untouched, and to exercise the others. This advice rests on the same principle which dictates our prescribing repose to an injured

* Abercrombie on the Intellectual Powers, p. 335 and 339.

muscle, or the exclusion of light to an inflamed eye; as premature exercise of the function of either of these parts would only irritate and aggravate the evil; but there is a period at which repose becomes injurious, and moderate exercise of the function is demanded. The case is the same with the organs of the brain when they are diseased, and hence the mischief caused by the indiscriminate reading of devotional books in religious melancholy, and by constantly condoling with the hypochondriac on the subject of his fears. But in these cases also, a period arrives at which the exercise of the disordered mental function on its appropriate objects, becomes necessary for the perfect recovery of the organ; and at which, consequently, participation in the devotional exercises in which others are engaged becomes advisable. The precise limit is not easily ascertained, but a few prudently-conducted experiments will generally suffice for its determination. In some cases, indeed, a sudden and powerful appeal to the deranged faculty will promote recovery in very unlikely circumstances, just as a sudden shock may at once give rise to insanity; but we are still too ignorant of the laws by which the mental operations are regulated, to warrant our venturing upon any such experiments when the stake is so serious as the possession or the loss of reason. The fact, however, being certain, ought to make us look about, and watch the action of every variety of circumstances upon the human mind, in the hope that ultimately something like certain grounds may be obtained for rational experiments.

Of late a good deal of discussion has taken place as to the propriety of lunatics being present at the regular performances of Divine Worship, and receiving the benefits of religious instruction. If we consider for a moment the deep interests connected with the exercise of the religious feelings, and the power which these have in influencing the mind, it will be evident that much good or much harm must result, according to the fitness or unfitness of the patient, to view them in a

proper light; and that, while much must depend on the judgment with which the portions of the service are selected and enforced, much must also depend on the condition of the lunatic himself. Nobody, for example, would ever think of recommending the admission to divine worship, of those whose reason is so completely unsettled or debilitated, as to render them regardless of control, and totally inaccessible to sentiments befitting the sacred occasion; but, between the two extremes of violence and idiocy, there are many intermediate degrees which demand a nice discrimination, and an accurate acquaintance with the condition of the patient, to determine what should be done; and in which, rightly directed, exercise of the religious feelings might do much good. Even in what is called Religious Melancholy, in which false views are generally entertained, and keep up the morbid state, a cheerful and judicious exposition of the love and compassion of the Divine Being for his suffering creature — Man, enforced as it would be by its reception by the more rational of the patients, could scarcely fail to operate beneficially; whereas, were such an appeal addressed to the individual alone, the impression arising from seeing it taken home to themselves by others, would be lost, and the understanding would be set at work to repel it, or to pervert its meaning. Satisfactory experience on this subject, however can obviously be obtained only in public institutions; and, as I can offer no opinion derived from this source, I am happy to be able to subjoin another extract, which I consider of extreme importance, from the Report already referred to.

In noticing the common supposition that religious excitement is a frequent cause of insanity, the Dundee Directors make the following very judicious observations: 'The plain case appears to be this, — In constitutions prone to mental aberration or in individuals originally so framed and circumstanced, that an exciting cause is only wanting to bring the latent tendency into life and action, vivid representations or conceptions respecting the awful concerns of futurity, are perhaps more

operative in overturning the understanding, than any other single excitement. But madness for the most part is a complicated effect; and it must ever be recollected, that despondent feelings and maniacal horrors, on the score of religion, are more frequently the consequences than the cause of the condition we deplore; but for these consequences, what more powerful alleviation, or indeed what more probable cure, can be suggested, than the comforts and consolations of Christianity, judiciously propounded, and zealously, at the same time tenderly and affectionately, enforced? In one asylum, at least, (that of Glasgow,) a regular course of Sabbatical instruction has been found to be one of the most efficient means of moral and mental management. Speaking upon this subject, the Directors of that Institution say, 'To one who is shut up from the world, and with whom every day is alike, the breaking in upon the ordinary routine by a set of observances at once singular and solemn, cannot fail to make a deep impression, and to fix attention to a high degree. Accordingly, the fact is, that during all the sermons which have hitherto been preached, the most loquacious have remained silent, the restless have become composed, and all have kept their eyes steadily fixed upon the clergyman, as if anxious to hear and to appreciate every word of his discourse.' And, again, in another Report, '*We have now for several years had experience of the practice of preaching in the Asylum;* and, far from attempting to determine the precise degrees of the powers of attentive recollection and judgment, which are necessary to qualify human beings for joining in public worship, we are rather disposed to allow full weight to the sentiment conveyed in the following extract from an interesting letter addressed to the chaplain by one of our patients. '*We know of no law whereby the prayers, entreaties, tears, and sorrows even of lunatics, are debarred from the Throne above.*' None indeed! and, although there may be in every refuge for the insane, some whose mental aberrations are of that extreme and determined character, as entirely unfit them for deriving any benefit and comfort from the services of

religion, yet this is not the case with the majority to whom these services have been found to be particularly gratifying and soothing. It is surely, then, the duty of the Directors of every receptacle for the insane, to afford, as much as lieth in their power, the means of enjoying these inestimable blessings to such of the objects of Heaven's severest visitation, as may be able to partake of them; and who, in consequence of that visitation, have been placed by their friends and relatives under the Directors' immediate care and protection.'

To this testimony I might add that of other institutions, where the same practice has been tried; but as it is substantially to the same effect, the reader will scarcely consider it necessary. It may, however, be remarked, that those who have had experience, concur in enforcing the necessity of making a judicious selection of patients, as the whole benefits must depend on the successful adaptation of the service to their particular state, or rather much discrimination must be exercised in excluding the few who are unfit; as experience has already shown, that a large majority of the inmates of every public institution may safely be admitted, only the clergyman ought to be on his guard not to introduce depressing views, contested or abstract doctrinal points, which such an audience might easily misunderstand, and by ruminating on which some of their worst symptoms might be aggravated.

There is a variety of other topics of great interest, which it would have been requisite to discuss, had this been intended as a regular treatise on insanity, but which do not come within my present design. Such are, the proper construction and constitution of public establishments for lunatics; the modes of classification; the regulation of light, heat, air, and other external stimuli; and, lastly, the application of the leading principles to questions of medical jurisprudence,—certainly one of the most important subjects to which we can direct our attention. Some of these subjects have been incidentally alluded to in the foregoing pages, and others have been scarcely

named. The proper classification of lunatics, for instance, would require a much fuller exposition than has been given, and I can only refer for some additional hints to the pages of Dr. Spurzheim. In all lunatic establishments it is of immense consequence, as that admirable author justly observes, to have subdivisions for the proper classification of the patients, both in the house and in the airing grounds. The furious, the noisy, and the dirty, ought to be separated from the others, and placed *near* the superintendents, as it is they who require most attention; but the common practice is to place them the farthest away, that the keepers may not be annoyed by them. This suggestion of Dr. Spurzheim's would have the double advantage of making the keepers humane and attentive, that they may not themselves be incommoded either by dirt or noise. The division for the tranquil lunatics should be at a distance from the former, and surrounded with walks, airing ground, or garden, and amply provided with the means of recreation, amusement, and employment. This last is of very great consequence, as we have seen that there exists not a more efficient cause of insanity than utter idleness is to a naturally active mind. The convalescents, again, ought to be entirely separated from those under treatment; as their mixing with the latter is apt to lead the mind to dwell on painful recollections, and to retard, if not to obstruct, the cure. Occupation is necessary, in an essential manner, for the convalescent; and on that account, workshops, gardens, &c. ought to be attached to their division, that each may find employment suitable to his taste.

Air, light, and heat act powerfully on the nervous system, and their action being incessant, every asylum ought to have the means of regulating their supply at will. The influence of air is well known, and is generally attended to in selecting a situation for an asylum, as well as in ventilation; but that of light is still less than it ought to be, considering the intensity of its effects both on vegetable and on animal life. Some lunatics are excited by its presence, while others are soothed. Some

are depressed and others excited by its absence, and hence the necessity of regulating its supply on a proper consideration of its effects. The baneful notion of lunatics being insensible to cold is now happily exploded, and there are few houses that do not provide for the comfort of their inmates, in the due regulation of their temperature. The well known effects of heat and cold on the nervous system, show, that even as a remedy, the temperature is not to be despised or neglected ; for it would be difficult to find a more immediate or powerful modifier of nervous action.

## CONCLUSION.

We have now taken a general view of the functions of the brain and nervous system, and seen that every act of sensation, however slight, and of perception, however feeble, — every affective and moral emotion, and every intellectual operation, are, during life, inseparably related to, and influenced by, a corresponding affection of the material organs with which the Creator has connected them. We have thence traced the origin of what are called Mental Diseases to disturbance of cerebral action, and have seen that the intensity and proneness to activity of the various faculties of the mind, perceptive, moral, and intellectual, are greatly modified by the relative size of their respective organs; that this takes place in virtue of an universal law pervading animate and inanimate nature; and which applies to the brain and nervous system in commou with all other parts; that this principle, hitherto overlooked, is nevertheless highly influential in modifying, and in many instances favoring, the action of the numerous causes of disease by which we are constantly surrounded; and that next to the hereditary tendency transmitted from parent to child, it is the most powerful of all the conditions which predispose tbe individual to the invasion of insanity. I have next examined the various conditions required for the healthy action of the brain, and for the full development of the mental powers; and in neglect of some, and contravention of others, we have found fruitful sources of nervous and mental disease. I have shown that, in accordance with this, every circumstance to which the production of mental derangement can be attributed, acts with a frequency and energy proportioned to the previous susceptibility of the patient, and to the directness with which it affects the nervous functions. In

analyzing the multifarious symptoms accompanying insanity, we have been able to trace most of them to their source in disturbed function of some nervous part, and to point out the proper light in which they ought to be viewed as *signs* of the bodily state which gives rise to them. We have considered the duration, periodicity, terminations, and symptomatic forms of the various cerebral affections on which insanity depends, and traced, so far as was practicable, the affinity existing between these and the numerous other disorders to which the nervous system is liable, either in its parts or as a whole. We have endeavored to take such a view of the *post mortem* appearances connected with deranged mind as our limited data seemed to us to warrant, and have shown that the same analogy subsists between the brain and other organs, in its diseases, as is observed to hold between them in their healthy conditions; that if, in the case of the brain, disorder of function is sometimes the *only* sign of the existence of morbid action, so is the same phenomenon occasionally the *only* symptom of disease in other parts. Nor does the analogy fail when mental derangement occurs without leaving after death any appreciable change of structure in the brain, or alterations of structure are met with where, during life, no sign indicated their existence; for exactly the counterpart of this occurs with other organs in which violent and even fatal disorder takes place, without leaving any organic trace to mark its previous existence; and organic alterations, on the other hand, appear on dissection, where during life no corresponding disturbance of function indicated their having taken place; and, lastly, combining the results of the previous exposition, I have attempted to sketch out rules of treatment, medical and moral, in harmony with the existing state for which we are called upon to prescribe, and with those leading principles in Physiology, Pathology, Therapeutics, by which we are accustomed to direct our curative efforts in all other bodily diseases, but which have hitherto been most imperfectly applied to the treatment of a class of affections second to none in inherent interest, or in importance to mankind.

That the objects sought to be attained in the present publication have been very imperfectly realized, may be too true; and that many of scarcely minor importance have been altogether omitted, will be apparent to every one. Still, however, I am not without hopes that the *mode* of investigation which I have adopted will be found to be essentially correct, and that, in the hands of others whose opportunities are greater than my own, its farther pursuit will ultimately lead to a richer harvest of results. In conclusion, I have only to add, that, should no other person better qualified for the task take up the application of the same principles to the elucidation of the numerous and interesting questions connected with the medical jurisprudence of the insane, I may hereafter resume the subject.

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# BIBLIOGRAPHY.

*The following list comprises most of the valuable works on Insanity, which have appeared within the last fifty years.*

*Chrichton* (Alexander,) An Inquiry into the Nature and Origin of Mental Derangement, etc. London, 1798.

*Pinel*, Memoire sur la Manie Periodique ou Intermittente. Tom. 1., des Memoires de la Societe Medicale d'Emulation. Paris, 1797.

*Do.* Recherches et Observations sur le Traitement Moral des Alienes. Tom. 2, des Memoires de la Societe d'Emulation.

*Do.* Observations Sur les Alienes et leurs Divisions en Especes Distinctes. Tom. 3, des Memoires de la Societe d'Emulation.

*Do.* Traite Medico-philosophique sur l'Alienation Mentale ou la Mania. Paris, 1809.

*Cogan*, An Ethiological Treatise en the Passions, 1803.

*Reil*, Rapsodien uber die anwendung der Phychischen curmethode aufgeistes Zerruettungen, 1803.

*Arnold*, Observations on Insanity, etc. London, 1806.

*Amard*, Traite Analytique de la Folie, 1807.

*Haslam*, Observations on Madness, etc. London, 1809.

*Hallaran*, Observations on Insanity, London, 1810.

*Rush*, On Diseases of the Mind.

*Cox*, Practical Observations on Insanity, etc.

*Hill*, On the Prevention and Cure of Insanity, London, 1814.

*Jacquelin-Dubuisson*, Des Vesaines ou Malades Mentales, Paris, 1816.

*Esquirol*, Memoire sur les Crises de l'Alienation Mentale Journal de Medicine de Sedillot, 1804.

*Ditto*, Articles, Folie, Manie, Monomanie, Demence, Idiotisme, du Dictionnaire des Sciences Medicales.

*Esquirol* des Passions considerees comme Causes, Symptom eset moyens de Traitement de l'Alienation, Paris, 1805.

*Georget*, Traite de la Folie, Paris, 1827.

*Do.* Articles, Folie, Idiotic, du Nouveau Dictionnaire de Medicine.

*Do.* Examen Medicale de plusieurs proces Criminels.

*Falret*, du Suicide, de l'Hypochondrie, Paris, 1822.

*Hoffbruer*, Medicine legale, relative aux alienes, etc. trac. de l'allemand pas Chambeyron, avec notes de MM, Esquirol et Hard, Paris, 1826.

*Voison*, des Causes Morales et Physiques des Maladies Mentales, Paris, 1826.

*Bouchet*, et Cazauvielh, de l'Epilepsie consideree dans ses Rupports avec l'Alienation Mentale, Paris, 1826.

*Calmeil*, (L. F.) de la Paralysie consideree chez les Alienes, Paris, 1826.

*Delaye* (J. B.) Dissertation inaugerale sur la paralysie des Alienes, Paris, 1825.

*Bayle*, Traite des Maladies du Cerveau et de ses Membranes, Paris, 1826.

*Knight*, (P. S.) Observations on Derangement of Mind, 1826.

*Halliday, Sir A.* On Lunatic Asylums, London, 1828.

*Burrows*, On Insanity, London, 1828.

*Brouscais*, De l'Irritation et de la Folie, Paris, 1828.

*Conolly*, Indications of Insanity, etc. London, 1830.

*Foville*, Art. Alienation Mentale, Dictionnaire de Medicine, et de Chirurgie Pratiques, 1830.

*Combe*, (Andrew,) Observations on Mental Derangement, 1831.

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