

portion of the blame which by friend and foe has been so freely cast upon him.

I have only to add in conclusion that I have endeavoured to connect in a continuous history the scattered references to Lord Brougham's morbid mental characteristics, which I have been able to find, and I think it more than probable that if such very incidental references point to the conclusion referred to, further knowledge of his life and that of his ancestors would strongly confirm it. As I said before, with such scanty materials at command, I rather bring them forward before the Association to ascertain how they strike other minds, than dogmatically to advocate an opinion myself. If, indeed, I seem to have arrived at a definite conclusion, I wish it to be distinctly understood that I regard it as subject to the correction which fuller evidence may demand, and should feel much indebted to any members who would favour me with unpublished facts which may be known to them, calculated to throw light on this remarkable man's mental history, and thus complete, as far as possible, my very imperfect sketch of the psychological biography of Lord Brougham.

On Physical Disease from Mental Strain. By BENJAMIN W. RICHARDSON, M.D., F.R.S., Fellow of the Royal College of Physicians.

(*Read at the Annual Meeting of the Medico-Psychological Association, held at York, August 2nd, 1869.*)

In an address I had the honour to deliver before the St. Andrew's Medical Graduates Association in November last, I took the opportunity briefly to direct the attention of those practitioners of medicine who are not specially engaged in the treatment of the insane, to the great importance of recognizing the influence of mental action on physical disease. I ventured to press the fact that the most scientific physicians have fallen into the error of studying, with too exclusive a care, the observable conditions of the body, healthy or diseased, and those agents or agencies for curing diseases which produce the most obvious effects—such as knives and other instruments, anæsthetic vapours, active drugs, heat and cold, electrical shocks, and the like. I admitted that as the pure physical existence is the groundwork and the primary neces-

sity of the highest form of living thinking thing, it is by nature the first duty of the healer to make that corporeal frame pure and whole, but I insisted that it is equally his duty to study what shall enter by the senses or windows of the mind, and though invisibly entering, be potent forces for evil or for good. Because an agency is not visible, not tangible, is it, I asked, less real? If a man lose his mind by the failure of his blood, that, it is said, is plain to understand, for it is physical; but if some horror come upon the man through his mind, so that, like poor Horatio, he is be-chilled

“ Almost to jelly by the act of fear,
Stands dumb, and speaks not,”

is not that, too, physical?—an action direct of mind on matter, reversing the physics of the body, and creating disease? It must be so; and in the study of this action, from the universe into the man, there lies, I maintained, a world almost unknown.

I argued further that, with strange acuteness, charlatans of all kinds have touched, without understanding, this unknown world. They have played, it is said, on the credulity of man; they have done more; they have, in ignorance of what they were doing, touched the animal motion through the direct entrances by which the universal spirit enters also. I urged that the need for new contemplation in this direction increases with the intellectual development of the race; that the animal body, in order to maintain equality of power, and be the equal of the soul within it, must, in the course of the suns, be replaced by an organism more finely moulded, more accessible to the external beauty and harmony, more sensitive of pain, more sensible of weakness, less susceptible of maladies evidenced through matter, more susceptible of maladies evidenced through mind, and more impressionable to cure or to injury through the mind than through the baser body. And, lastly, I submitted that to study these changes of existence and action, to open this unknown world of natural truth, not to trade upon the knowledge of its existence, but to comprehend it with the grasp of a philosopher, are tasks to which the man of physic must devote himself with zeal, or recede with humiliation from one of the strongest seats in philosophy.

The subject thus glanced at in the address to which I have referred is the key note of the present effort. I am desirous to bring before you who are most conversant with

the mental side of disease, the question I have opened from its physical point of view, and to illustrate how in many and various ways the practice of medicine becomes a single and simple art and science in the hands of those who treat the disorders exhibited either through the phenomena of the mind or the body. This is my primary object, but there is another, hardly secondary. I am anxious also to put before the world at large the existence of certain physical social evils which are under perfect control, but which, developing with an increasing intelligence, are degrading the physical powers of our most powerful men, and as I think are interfering with the progressive development of powerful generations of men who should, or rather might, belong to the future.

Let me at once guard myself from any suspicion of a desire to exaggerate the evils of mental strain, by the remark that I have no idea of any evil from mental work when that is carried on with evenness and order and generalization. I take the brain to be the most enduring of organs—the organ that admits of most change, the organ that requires most change, the organ that is the most perfect repository of animal force, and the most ready dispenser of it; the organ that can rest in parts when jaded, and work in parts that are not jaded at one and the same time. I look on mental work, and even on hard mental work, as conducive to health of life and length of days. I speak only of evils resulting from extreme strain on one particular series of nervous structures; strain induced either by persistent and prolonged struggle, or by sudden and vehement shock conveyed by the senses and translated too urgently into conscious manifestation.

Subjects of Mental Strain.

Those who become subject to unfair mental influences from intense or prolonged strain belong to particular and easily defined classes of society. They are all mental workers, but as mental workers they constitute classes of themselves—classes distinguished by the character of work in which they move. I divide these classes into six.

First, there is the mere copyist, the man who sits all day at his desk, and transfers copies of writing, or of a speech, to a piece of paper. The clerk, the compositor, the reporter, and the second and third rate author are of this class.

Secondly, there is the thinker and writer, who copies also, but not directly from other writings, nor from thoughts expressed by other minds, but who goes to the great manu-

scripts of the Supreme Author—to the hills, and plains, and oceans, to the living kingdoms of all animals, and of all times, and transfers the pictures of these to canvass or paper, bringing the vastness of the universe, as seen by his superior sense, into moderate compass and legible form, so that lesser minds may read through him the truths he sees and unfolds.

Thirdly, there is the speculative man, usually very selfish and locked up in himself; who from day to day, and night to night, and hour to hour, *schemes*; who walks with his head down, his eyes on the earth, and thinks—thinks how he shall meet this obstacle, waylay that plan, and anticipate such and such events—a truly business man in the world's acceptance; one who is up and down like a Jack-in-the-box, very large when he is up, and out of sight veritably when he is down.

Fourthly, there is the man who carries on his shoulders other people's anxieties, who thinks for others rather than for himself, and must never be tired by the effort: the professional man is here represented; the politician, the physician and surgeon, the lawyer and accountant.

Fifthly, there is the artist, who labours towards perfection at some given task, and, absorbed in his work, forgets the world around, and day after day toils on, supported by the applause of many admirers, and deaf to nearly all else.

Lastly, there is the learner, the student; the child or youth whose will is hardly his own, who works when he is bidden, and plays when he is permitted; who is fed too often with flattery or blows, and between, or by, one and the other, is at length turned out on the world prepared, as it is thought, by education and training, to fight the great and increasing battle of life.

Amongst these classes we meet with those who suffer mainly from the consequences of mental strain; but the injury is very unequally distributed. The copyist, who merely records the impressions he has received, and enters them direct on paper, is subject to little waste of force beyond that which is wasted in muscular action, and his disorders are therefore confined chiefly to dyspepsia, resulting from confinement at the desk, or to the evils of a deficient repose.

The second class of men, those who think as they write, suffer more determinately. With regard their work, however, I believe it need never be made injurious to the health of the body, and that when it is varied and not pressed, it is one of the healthiest of occupations. The dangers to which men of letters are exposed according to my

observation are two only: one the danger of rapid and intense thought with an impulse to chronicle instantly, and at any time, by night as by day what are called "happy conceptions;" the other the danger of writing against time, and sustaining a readiness, at any moment, to write at any length, on any conceivable topic.

The third class of men, the speculators, are a more extreme class, and suffer exceptionally from mental strain. The man who during life has simply to beat down enemies as they come, to take one up and another down, has hard work; but the speculator meets obstacles on all sides, and while he is winning in front, must often find himself held back by a strong hand in the rear. His life is to waylay, to calculate how he shall make up a book that shall win, come what will.

The absorption of this man's thoughts in his own plans and devices removes from him generally the idea of illness and of death. He differs from the man of ordinary business, in fact, in his insusceptibility to the necessities of his own physical existence. His life is surrounded with a kind of vulgar romance, and his own over-weening self-confidence, his consciousness that he either can or ought to devise schemes and calculations, which must or should carry the day, bear with them an enthusiasm which might well be devoted to a better cause. But by-and-by, in spite of himself, and in spite of the absorption, he begins to fail, and then the usual course is to resort to stimulants by way of support. At last he suddenly breaks down; but buoyed on by constant hope of better days, he believes to the end that he shall recover, and retains his propensities with unflinching determination.

The ailments of the speculator are usually compound in character; for he is, in most cases, a man of active life, and the whole of his organism, muscular and nervous, is equally taxed. If he be a betting man, the race-course or some other out-door pursuit calls him into the open air. If he be a gambler, he is subjected to considerable muscular fatigue. Hence it follows that he is exposed to a variety of exhausting influences. His first symptoms usually commence with irregular action of the heart, and this is followed by results pertaining to a failure of that organ. In the majority of cases he succumbs after exposure to some sub-acute inflammatory disorder. He takes cold, suffers from congestion of the lungs or kidneys, and, unable to bear the shock, sinks rapidly under it, his mind becoming intensely irritable, or

even losing its balance. Then he does some foolish thing, trips in his calculation, and is pronounced "insane."

The professional class of men stand amongst those who suffer most severely and decisively from what may be called simple exhaustion of the nervous system, resulting from active over-work. These differ from the other classes in most points. They differ from the original thinker in that they are neither ordinarily closeted in the study nor working out original designs; but having learned certain facts and principles which the world at large does not comprehend, they are constantly putting their knowledge into practice on behalf of others, and seeing the faults, failings, and miseries of humanity, they become in time inured and ready for every surprise. They differ from the speculator in that they have, after a time, but little enthusiasm. They learn of the Preacher that "all things are alike to all;" they incline further with the same authority, that all things come alike to all; that "as it happeneth to the wise, even so to them; and they praise the dead which are already dead more than the living which are yet alive." Notwithstanding this, their philosophy fails them as their physical life advances. They suffer greatly from little annoyances connected with other men's concerns, and in the very fulness of their self-sacrifice—for of all men they least consider their own private concerns—they become morbidly sensitive to slights of every kind and more dissatisfied. Success, which in early time was the object of their life, brings with it terrible cares that are not unfrequently harder to bear than the worst failures. Having made a position, they must maintain a position at all risks; and having attained their rank, must sustain it despite time and labour. Add to these things the responsibility, that the labour done is for others and is open to the criticism of circles of people who know nothing of the difficulties, but are consistent in the belief, that if they had had the management they could have done so much better,—and the picture is complete.

In the members of the professional class the brain is constantly being exercised without enthusiasm, and the body is daily being exercised without any sufficient rest. The result is that the excitement of brain which leads to insanity is exceedingly rare, and that those physical ailments which follow as secondary to the overworked brain become developed. The professional class suffer largely, therefore, perhaps mainly, from physical affections. Diabetes is exceedingly com-

mon. Paralysis of the limbs, with little interference of the mental faculties, is another common type of disease. Affection of the kidneys, degeneration of the structure of those organs, is a third condition; and disorganisation of the heart is a last, and by no means rare, occurrence.

Men whose lives are devoted to the arts are infinitely less subjected to the graver physical evils than are either the professional men or the speculators. Their ailments, however, differ materially, according to the line of art which is pursued. Those who follow painting as an art, while they are sometimes for long hours shut up in the studio, and are working almost like men of literature, are nevertheless allowed recreations and pleasures which greatly relieve the monotony of their lives, and add, in no small degree, to their health and happiness. Thus they make their journeys to Rome, Venice, and various parts of England, and, indeed, lead an existence which is most invigorating and delightful. Exemptions must of course be made for those who suffer from pecuniary difficulties, who labour for the mere means of existence, and are obliged in the studio to conjure up subjects for the pencil from the recollections of the past. But compared with the mass of mental workers these are very few, too few for any inference to be drawn or fact displayed as to their special diseases. Artists, painters, as a whole, may then be considered as exempt from various mischiefs, but they have trials which tell upon the heart, in respect to the position which shall be gained by the work which they have done. I believe this is really the greatest mischief to which the painter is liable. His work is so light, so chaste, so fruitful of enjoyment, and so confined to those hours of the day when the sun shines, that he cannot suffer greatly from real over exertion. But for these very reasons, being retired from the world and understanding little of it, he chafes sorely under unjust criticism, and frets himself into a nervous hesitating condition, which renders life some times a burden, prolonged, and hardly to be borne.

Concerning those who follow poetry as an art, we have heard much said—a vast deal more, I take it, than ever was true—respecting their sufferings. In short, the world has not produced a sufficient number of poets for us to calculate whether poetic art is at all destructive of mind or of body. The instances of destruction are too few and too questionable to be relied upon, and the romance which surrounds destroyed poets is too extreme to be believed in by the physician.

The dramatic artist differs from the classes previously

mentioned, both in his labours and in his sufferings. To men of strong build and firm will—to men who possess by nature the very faculties which they represent—dramatic art may offer few anxieties or perils, and we know from experience that some of our greatest dramatists have passed through their active careers, extending over a long life, without suffering beyond other men; but if my experience serves me rightly, the majority of players are very differently placed. A man in the studio can labour at works of art calmly and quietly, thinking, as he touches the inanimate canvas, of what will be said of the result. But this is very different from the art in which the man transforms his own body into art, and has to appear suddenly before a crowd, exhibiting himself in attitude and character, personifying what he has never seen. To get up to this ordeal, the intensest labour and presence of mind are required, the strongest will and the most refined ideal. We have an illustration of this intensity in those cases common, I believe, to almost every player—when the artist, at his first appearance, is said to be “stage struck,” when for the moment the circulation stands still, when the muscles are rigid and the face deathly. That is the first, and probably the most painful ordeal, but it is an ordeal which rarely ceases altogether with the first appearance. Without manifesting itself with the same active symptoms as those that are combined at the stage struck period, it exhibits itself in a nervous irritable excitement, which intensifies up to the period when the time arrives for taking part in the proceedings, and then gradually subsides during the performance, or is even transformed into enthusiasm, to be followed, when the excitement is over, by a depression that may amount even to despair, a depression which applause and admiration do not satisfy, but which unjust or unfair criticism goads either into melancholy or apathy. Under these influences, many of our really best players sink into second or third positions, not because they are wanting in the talent to stand first, but for the simple reason that they prefer the ease of mediocrity. For this reason, some of our players who do stand first, owing to the constant irritation to which they are subjected, become cross, irritable, or desponding, finding no satisfaction in the temporary approbation which they achieve, but overwhelming chagrin at every shade of disappointment. Still more, in the very act of the sustaining of certain characters on the stage, telling physical efforts are called forth, which de-

mand a degree of muscular exertion, mental strain, and expenditure of vital force altogether, of which the mere looker-on has no adequate conception. Take the play of "Othello," for instance, as indicating the character of the labour that is required in the actor. The mere effort of speaking such a play well is beyond the reach of ninety-nine men out of a hundred; and then to add to the speech the action, the studied expression, the passion,—what can be more onerous, exciting, or severe?

The labours of the players tell mainly on the heart. That organ becomes irregular in its action; then, for a time, large and overstrong, and finally degenerate, feeble and uncertain. With this there are combined excessive timidity, sleeplessness, persistent dyspepsia, paralysis, and gradual decay. Whenever sensations thus excited unfortunately lead the actor to resort to the use of stimulants; when without a stimulant he is unable to meet his audience, or to recover from his labour, he is beginning to suffer from a second destruction, more fatal than the first.

The extent to which over mental strain is injurious to the young, varies according to the kind and character of work. The endeavour to fill the minds of children with artificial information leads to one of two results. Not unfrequently in the very young, it gives rise to direct disease of the brain itself, to deposit of tubercle if there be pre-disposition to that disease, to convulsive attacks, or even to epilepsy. In less extreme cases it causes simple weakness and exhaustion of the mental organs, with irregularity of power. The child may grow up with a memory taxed with technicals, and impressed so forcibly that it is hard to make way for other knowledge, and added to these mischiefs there may be, and often is, the further evil, that the brain, owing to the labour put on it, becomes too fully and easily developed, too firm, and too soon mature, so that it remains throughout manhood always a large child's brain, very wonderful in a child, and equally ridiculous in a man or woman. The development in an excessive degree of one particular faculty is also a common cause of feebleness.

I knew an instance in which a child was "blessed" with a marvellous gift of verbal memory. This being his "forte," his teacher, who wished every scholar to be remarkable for something beyond other scholars, played on this "forte" powerfully, and with wonderful effect. By constant cultivation of the one faculty this marvellous

boy could learn off fifty lines of "Paradise Lost," or of any other English book at a single reading, and could repeat his lesson on the spot, without missing a word or omitting a comma. But the result was this, that when this remarkable boy was sent to a university to learn a profession, he was beaten in the learning of detailed and detached facts by every fellow-student. Seeing slowly but surely where his weakness lay, this student ceased at last to call into play his remarkable talent. It was a terrible task; he accomplished it at last, to a considerable degree; but never effectually. For a long time he made mistakes that were most annoying; he was unable, for instance, to cast up accurately any column of figures, he forgot dates, he ran over or under important appointments, misnamed authors in speaking of works of art or letters, and in reasoning he would mix up two or three subjects. It took him full ten long years to unlearn his wonderful technical art.

For the reasons given I have always persistently opposed the special prize system in schools. As a teacher with large experience, and as a student, I can recall no single instance in which noted prizemen in early youth bore away more than other youths the prizes, that is to say, the successes, of after life. I have, however, known many many times the successful prizeman in the class the least successful afterwards, and as often have known the most ordinary man in class come out as the best man in life.

Overwork in the child and in the student defeats, therefore, its own object; it does not bring out the powerful brain necessary for the man: for all life is as a new and great lesson, and some young brain must be left free for the reception of lesson on lesson. Of this there need be no doubt, and there we may leave the first and leading fact; but the danger of overwork unfortunately is not confined to the brain, it extends to the body as a whole. When the brain is overworked in the growing child, however well the child may be fed, there will be overwaste of substance in proportion to the overwork. There will be stunted growth and a bad bodily framework.

In addition to mental strain induced in the manner suggested above, there is, as I hinted at first, strain from sudden shock, leading to consequences of the most serious character. I have had to determine whether extreme shock requires to be inflicted on feeble or over-sensitive organisms, in order to strike effectively, and I have been drawn to the conclusion

that such is unnecessary, and that the least emotional persons may be influenced. The after effects of sudden mental shocks have, however, been unstudied by that part of medicine which I represent, and I may, therefore, be speaking from too limited experience. Nevertheless, I am clear enough in the fact that I have seen physical evils follow upon mental shock, even in obtuse men.

Special Diseases from Mental Strain.

Diseases following upon mental shock or strain are divisible into two classes. There is a primary class in which the mental shock stands out as the direct and only cause of the malady, and there is a secondary class in which the mental shock or strain appears only to increase or exaggerate symptoms of disease which pre-existed.

In the first class the diseases produced are the same as those which sometimes follow upon the receipt of physical injury to the nervous centres. I notice specially as the most distinct forms of disease of this nature with which I am familiar, diabetes, paralysis (local or general), intermittent pulse, and arterial relaxation with arterial murmur.

Diabetes from sudden mental shock is a true type, a pure type, of a physical malady of mental origin. I have before me the notes of three cases, in which the first excretion of sugar and the profuse diuresis were symptoms as remarkably sequential to severe mental strain, as when, in experiment, we induce the malady by inserting a needle into the brain in the region of the fourth ventricle. The cases constitute a hopeless class, the danger sudden, the course rapid, the fatal end sure.

The symptoms of paralysis from mental strain are usually less sudden in their approach, and are preceded by warnings, which, when noticed correctly, are sufficiently decisive. The most characteristic of these warnings is a sensation on the part of the patient of necessity during any mental effort for frequent rest and sleep; symptoms such as are described so faithfully, by Johnson, as belonging to the case of the Poet Cowley. The cause of these cases is usually clear; it is a progressive course towards general palsy of mind and body, and it is not unlike the decline of mental activity in the age of second childishness and mere oblivion. When this condition exists, at however early a stage, the slightest shock tells on the nervous structures, and transforms suddenly the threatening

malady into the extreme reality. Sudden muscular paralysis is the most common sequence of shock under this condition; it is in most cases, at first, a local paralysis; but it may, at once, be general in respect to all the muscular system under the control of the centres of volition.

Intermittent pulse is, as I have shown on a previous occasion, a physical symptom of cerebral and mental origin. I have never met with a case in which the disorder was not sequential to some anxiety; shock, fear, sorrow, or their similars. I have met with case upon case in which the sufferer has been able from his own perception of the intermittency to register the precise moment when the injury causing it was inflicted.

Arterial relaxation with murmur is the result of injury involving the emotional or organic nervous centres. I have seen it follow on direct physical injury, and I have seen it follow on mental shock as distinctly. It is a common result of intense grief, and is characterised by sudden changes of vascular tension, coldness, chills, frequent perspirations, irregular action of bowels, and, often, diuresis. But the most distressing symptom of all is the arterial murmur. This is usually heard by the patient, and is sometimes mistaken for aneurismal murmur. It is produced at those parts of the arterial tract where an artery runs through a rigid canal, as through the abdominal opening of the diaphragm, or the carotid canal in the base of the skull. In these rigid canals, the arteries being relaxed, the sides of the vessel press, with each impulse of the heart, on the surrounding resisting wall. Thus there is vibration and murmur, and in the case of vibration in the carotid canal the murmur is painfully audible to the patient. In these cases the symptoms are often developed in the most sudden manner, and recovery is again often as equally sudden.

It remains yet to be seen what change in the nervous centres is produced by sudden mental shock. The symptoms lead one to the idea that the change is identical with that which is produced by mechanical shock, or mechanical irritation; but what the nature of the change is has all to be learned. That it is some alteration in molecular arrangement, attended with change in form of matter, is the most reasonable theory; but experiment is still wanting to indicate precisely the modification of structure which is induced.

The class of cases where the symptoms due to nervous

mischiefs are secondary, include, according to my view, syphilis, some chronic eruptions on the skin (psoriasis especially), cancer, epilepsy, and insanity itself. In all these there is some preceding condition, hereditary or acquired, which, either by causing injury to the nervous structures, or by modifying structure of other parts of the organism, leads to a chronic exhaustion, which is intensified by the slightest nervous shock. Thus the symptoms of tertiary syphilis will recur on venereal excess, without any introduction of new venereal poison; thus eruption on the skin will recur from nervous shock; thus cancer so frequently shows the first signs of its presence on mental anxiety;* and in two cases of persons predisposed to epilepsy, I traced the first seizure clearly to mental prostration. Respecting insanity, I doubt whether it is ever the result of simple mental over-strain; on the contrary, I take it rather to be an upshot of extreme mental inactivity; but when the tendency to it is pronounced, then mental strain excites up the evil.

In this abstract of what I hope soon to complete as a distinct work, I have been able only to glance at the many subjects on which I would like to hear your special knowledge. You are accustomed to look at mental as evolved from physical or social, or transmitted causes acting on the mind by the body. I am trying to look at physical devastations as evolved from agencies acting on the body through the mind. I think, I am not sure, I see the reverse side of a subject which has often been discussed, the relation of mental to physical disease; and the picture thus presented to me is that the origin of insanity, as a concrete fact, is rather to be sought for in inactivity, hereditary and individual inactivity of brain, than in exercise of brain; and that excessive exercise of brain is a cause not so much of mental as of physical derangement. Our uneducated, cloddish populations are, in short, as I venture to assume, the breeders of our abstract insanity, while our educated, ambitious, over-straining, untiring, mental workers are the breeders and intensifiers of some of the worst forms of physical malady.

With all simplicity and candour I submit these ideas to your consideration.

* I shall take occasion in the future, I hope with more enlarged experimental knowledge, to show that cancer is primarily a disease of the nervous system, and that the local change we call cancer, with the ulceration which caps it, is the equivalent of the change and death of part after complete arrest, produced by division of nervous communication.