condition of perception, the next step is to examine that faculty in detail. But here two courses present themselves; the one is to analyze perception according to the several classes of objects of which it takes note; the other according to the several varieties of its *forms*. Now the same form is common to more than one kind of perception, and consequently doos not exhibit certain varieties of that faculty. If we would ascertain, therefore, what these are, we must analyze perception in relation to its objects. This then will be our endeavour in the next section. After that is done we shall have to examine it again relative to its *forms* in conjunction with conception, which faculty, unlike perception, has all *its* varieties exhibited by its forms alone. The same is true of reason.

(To be continued.)

The Causes of Mental Disease, by Dr. E. Jarvis, *Massachusets.*

The valuable report on the history and condition of the McLean Asylum for the Insane for the year 1858, derives a peculiar importance from the few pages which the Superintendent devotes to the causes of insanity, so far as they were developed and affected by the peculiar circumstances of the year, and were connected with the recent financial crisis and the religious excitements of that period. Dr. Tyler discourses wisely upon these matters, and gives admonitions which, were they heeded, would save many from mental disturbance and more from mental death.

To all things created and grown there are fixed laws and conditions of being and action. To every living organism, whether animal or vegetable, as equally to dead machinery and structures, there is assigned a definite purpose or function, which it is appointed to fulfil or discharge. If it be properly constructed, its parts or elements suitably arranged and harmonized, and all endowed with their due strength, each performs its own work, or bears its own burden. But neither their structure, nor their organization, nor their strength, will permit them to be applied to any other purpose, or to perform any other work, or to bear any other or greater burden, than those which are appointed for them,

https://doi.org/10.1192/bjp.6.32.119 Published online by Cambridge University Press

without suffering or injury. No machine is strong enough to escape this law; no vehicle or utensil is rude or coarse enough to exempt from these conditions. The carriage intended for passengers is impaired, if it be used for freight; the merchandise wagon is injured, if it be loaded with coals. All kinds of vehicles, the lightest pleasure-gig as well as the heaviest dray or stone-cart, are weakened and loosened in their joints, and perhaps broken, if they are made to carry weights, even of their proper kinds, greater than they are intended to bear. The cotton-carding machine does its appropriate work well and without injury. But if wool, or flax, or harder substances, be put into it, it is soon out of order, and perhaps broken. This law as to the appropriate use of all material things, machinery, vehicles, vessels, and utensils, is universally recognised and respected, and no discreet workman or cautious manager ever presumes to disregard it.

The same law is immovably imposed upon everything endowed with life; upon all animal organs, all that perform the living operations,—the stomach, the muscles, the brain, the nervous system, and even the moral and mental powers, the passions and the affections. Each having its distinct functions to perform and purposes to fulfil, its structure, organization, and endowments are adapted to them. It is supplied with means and strength sufficient for these, and no other. Therefore, in the use of the machinery of life, as well as of that created by human hands, all violations of its conditions of being, all transgressions of the limit of power or the restricted sphere of action, are necessarily followed by injury and disorder. From the beginning until now, in every clime and among every people, this has been shown, by the large proportion of functional disorders, organic diseases, and even general physical derangements, which come upon humanity from the misapplication of the power of some of the organs, or from the excessive expenditure of their strength by overexertion.

Dyspepsia, with its many phases, is produced in great part by the misuses and abuses of the stomach and digestive system, by errors in the selection of food or mistakes in the quantity that is consumed, or by the neglect of other essential conditions of nutrition. Some of the diseases of the locomotive apparatus arise from violations of the conditions of their being, and of the law appointed for their action. If the muscles are applied to purposes not assigned to them, or exercised beyond their strength, they inevitably suffer, and may be weakened or disordered. The brain is subject to similar

https://doi.org/10.1192/bjp.6.32.119 Published online by Cambridge University Press

conditions of life and laws of action. It is endowed with certain limited powers, which can be applied only to distinct and definite purposes, and it cannot go beyond its appointed bounds without danger, nor bear burdens exceeding its strength without suffering, nor labor beyond its accustomed energy without weariness.

The mind, while on earth, is necessarily connected with the animal body, by means of the brain; for that is the essential and only agent of all its operations. So long as the immaterial spirit is inseparably associated with the material substance, all its powers of action and endurance are in exact correspondence with those of the physical organ; its strength to labor, its energy, and its range of application, are those which the brain admits, and no more. It is affected by the infirmities and the liabilities of that part of our frame. Considering, then, this intimate connection of the mind with the brain, in its strength and weakness, in its health and sickness, it is reasonable to assume and to speak of cerebral health and cerebral disease as indications of corresponding conditions of the mind.

The brain has several functions to perform. It is not only the organ of the mind and the instrument of the mental operations; it is also the organ of feeling and emotion, of passion, anxiety, and suffering. It superintends the operations of the body. It supplies the several parts with the stimulus of life and action. It seems to be a storehouse of nervous energy, a part of which is used to fulfil and sustain mental and emotional purposes, and a part is distributed to the several organs of the material frame, and enables them to perform their respective functions.

There is sufficient nervous energy in this storehouse to sustain all the other organs in the performance of their several duties, and the mind in doing its own work, and also to quicken all the moral affections, the healthy emotions and passions, the natural appetites and propensities. There is enough for the life and action of all. Each can draw its due proportion from the brain; but none can safely have more, for the supply is limited. If any one takes more than its due share, the others have less than theirs, and consequently they have less life and less active force; they perform their functions feebly, and perhaps some may be suspended. This is a common occurrence, and probably familiar to all. When one eats food that is hard of digestion, or takes a fuller meal than the stomach can master at once with its usual force, it makes a demand upon the brain for

https://doi.org/10.1192/bjp.6.32.119 Published online by Cambridge University Press

more than its own share of nervous energy to sustain it in its extraordinary work, and consequently less than the due proportion can be given to the other organs or functions. They then act languidly; muscular labor is difficult, the brain refuses to think, or thinks feebly, the whole system craves rest, and perhaps sleep, while the stomach is getting through its excessive and difficult task. On the other hand, the action of the mind may be very powerful, and absorb the nervous energies to such a degree as to interfere with the physical operations. From this cause, deep grief, violent anger, intense anxiety, and other powerful emotions and passions, interrupt the digestive process. Violent muscular exertions also diminish the freedom and fulness of the other functions. While one is running a race, or swinging a sledge-hammer, or working at a fire-engine, he can neither think, nor reason, nor talk upon grave subjects; and the stomach also slackens in its ordinary work, because the muscles demand and use so large a proportion of the nervous energy that enough is not left to sustain the other organs in their usual labor.

Nature has endowed all of the organs with their several powers, and given each its connection with the brain, for the purpose of action. It was not intended that any should pass its life in idleness, but that each should have its opportunity of exercise, both for its own strengthening and for the health of the others. When they are used in obedience to the law of their being, applied to their appropriate purposes, and exerted within their appointed limits, each does its own work easily and successfully, without interfering with the others, and all the voluntary functions are under the control of the will. All the actions of life necessarily imply expenditure of force, and that must be in proportion to its intensity or its duration. Of course, in every case, some weakness or depression of strength follows the exercise of every organ or power. In a healthy person, sufficient means are provided to sustain all appropriate actions, and to restore the force that has been expended. If we work moderately and appropriately with the limbs, they after a while become weary with action, and crave an opportunity to recruit their force. If rest be allowed them, they soon regain their power, and are then as strong as before, and ready for the renewal of labor. But if we work with more than our usual energy, if, for instance, the muscles are compelled to act long or violently, in lifting or straining, beyond their accustomed strength, they are exhausted, become

https://doi.org/10.1192/bjp.6.32.119 Published online by Cambridge University Press

weakened, and require a much longer period of rest to restore them.

If these great and unfitting exertions are long continued or frequently repeated, the exhaustion is carried so far, that no amount of rest completely restores the strength. The muscular force is then permanently reduced, and the limbs are unable to do their previously accustomed work.

The same results of over-action, weariness, exhaustion, and permanent weakness or disease, are manifested in the digestive organs. The stomach and the other parts of the nutritive apparatus are ordained to convert enough food into chyle to replenish the blood, and to supply it with the means of repairing the waste of the textures. When this organ is in good health, when the food is of a proper kind, and taken in due quantities and at suitable seasons, and all the other circumstances and conditions are properly attended to, the work of digestion goes on easily and satisfactorily, and the wants of the blood are supplied. But if the food be not of a suitable kind, if it be of improper material, if it be badly prepared, if the bread be heavy, if the meat be burned, if the mixture be insoluble in the gastric juice,—if, in any way, the food after eating, be digested with difficulty,—the stomach labors, sometimes in pain, often in weariness, and is consequently fatigued, and perhaps all its strength is exhausted when its work is done. But unless there has been too great an expenditure of strength, it is regained by rest, and then the organ is ready, as before, to do its work. But when this labor is violent and excessive, the vigor is not all restored by rest, and the average or constant digestive power is reduced; and if this exhaustive process is perseveringly repeated, the stomach is weakened more and more, until it performs its work only with difficulty and in pain, and sometimes fails entirely.

Indigestion may be produced by manifold causes. Improper food, of any kind, bad cookery, eating rapidly, at unseasonable hours, or in excessive quantities, imperfect mastication, exhaustion of the nervous energies before eating, or occupation of these energies by great physical or mental labour immediately afterward, want of exercise, too intense study, care or anxiety,—any one of these causes will diminish the gastric force, and, if long continued, will waste the powers of the stomach, and establish disease.

It is not usual for any single cause to act alone and produce indigestion. More commonly two or more causes co-operate to effect the result. It is rare that a man is wise and faith-

https://doi.org/10.1192/bjp.6.32.119 Published online by Cambridge University Press

ful in all the duties of self-management but one, and in that alone indiscreet and careless. The student may combine excess of mental action with want of physical exercise and hasty eating. The man of business may allow too little time for his meals. He may carry to his table the burden of his commercial transactions upon his mind. He may be careless as to the food he takes. Regarding the convenience of his counting-house rather than the necessities of nutrition, he may be irregular in the hours of eating. He may add to these errors night-suppers of food that disturbs, but does not strengthen him. In the affectionate wife and mother, who is watching over her sick husband or child, the oppressive anxiety, the disregard of her own physical wants, carelessness or even forgetfulness of the hours of eating, absorbing thought at table, want of exercise, fresh air and sleep, all may be brought to bear at the same time. Out of any one, or any number, or all of these, and other coexisting errors, dyspepsia may grow.

It is therefore frequently difficult to refer a disordered or impaired stomach to any single cause, or to determine how much influence each of the several co-operating causes had in producing the disease or disturbance; nor would it be philosophical to assume any one of these as the source whence any present gastric difficulty sprang. Yet it would be safe to say, that each of these coexisting facts or violations of the law of self-management had its due weight in producing the disorder.

The universal law of philosophy, that like causes produce like effects, applies with unvarying force to the management of life, and the production of health and strength. It is not intended by this to say, that any single cause, or combination of causes, will produce like consequences in all circumstances; for these, differing among themselves, and having various kinds and degrees of influence, of course modify, sometimes by increasing and sometimes by diminishing, the effects which the causes tend to produce. Yet it is certain that like causes produce like effects in like constitutions, states of health, and circumstances.

All the animal organs, and all the mental and moral powers that belong to humanity, come under this law. In all the living operations, cause and effect are inseparably connected. There can be no action of life, without its retribution of good or of evil. With every part of our frames, and every faculty and endowment, obedience to the conditions of being is necessarily followed by invigoration,

https://doi.org/10.1192/bjp.6.32.119 Published online by Cambridge University Press

growth, or comfort, and disobedience by disturbance, pain, or weakness; and these consequences are in strict proportion to the faithfulness to, or the violation of, the law. There need be no mystery in the conditions of health and enjoyment, nor in the events of sickness and suffering. None of these arise or happen without adequate causes. A large proportion of these causes may be ascertained in the present state of science, and many of them are within the control of man, and may be prevented.

Mental derangement and weakness, of every grade and every variety, are produced by errors in the use of the cerebral forces. Much learning is not necessarily a cause of madness; for the strong and disciplined acquire it without suffering. They carry it gracefully, use it skilfully, and gather strength from it, while others fall in the endeavour to acquire it. Nor is a little learning, usually, a dangerous thing; yet there are some to whom even this would be a burden not safely to be borne, for they cannot assume it without sinking, or carry it without staggering.

In the anterior history of some of the patients who are admitted into the asylums for the insane, excessive study, study of metaphysics, phrenology, Fourierism, animal magnetism, Spiritualism, and the Scriptures, or great mental excitement from intense attention to business, care and anxiety,—all the varieties of undue mental application or inappropriate use of the cerebral forces,—are given as the causes of their disorder. In the Reports of eighteen American hospitals for the insane, which state the causes of the disorder of their patients as far as they were supposed to be known, one hundred and seventy-four kinds of events, habits, or circumstances connected with the misuses of the mind in the manifold varieties of mental action, application, and excitement, with the stimulating and the depressing emotions, hope, fear, grief, disappointment, and trouble, and with the malignant passions, are given as the causes of their malady. Among twelve thousand eight hundred and thirty-eight patients, the causes of whose insanity are stated, 22.7 per cent were connected with grief, disappointment, and other depressing emotions, 8.2 with excitements, anxieties, and depressions from religion, 6.9 with property, poverty, and business, and their attendant anxieties, excitements, and losses, and 5.5 per cent from excess of mental action.

These disturbances of mind are not due so much to the amount of the burdens which are assumed, for it is manifest that the large majority of those who gain both the greater

https://doi.org/10.1192/bjp.6.32.119 Published online by Cambridge University Press

and smaller degrees of learning, and sustain responsibilities of every kind, are sound in mind, and free from every mental obliquity. But they are due rather to the disproportion between the load imposed and the strength to bear it, between the natural and original vigor of mind, or the power developed and established by habitual labor, and the purpose which they attempt to accomplish.

There is every grade of difference in men's powers of mental labor and endurance, from him whose understanding comprehends only the simplest ideas and propositions, to the philosopher to whom the most abstruse propositions and their complications are but as child's play,—from the servant or under-worker, who performs only the plainest processes, without thought, under the direction of another mind, up to the statesman who manages the affairs of a nation, almost those of the world, with undisturbed energy, or the financier who passes through commercial revulsions and sustains his part with unruffled calmness.

All of these, both the extremes and those between, are sound in mind; but they have widely different powers of acquirement, of reason, of accomplishment, and of endurance, and it is plain that they must have equally various powers of sustaining themselves under any definite burden which may be thrown upon them. The same amount of study, responsibility, or care, which would be an unfelt trifle on one, would be a load on the mind of a second, would weary a third, exhaust a fourth, and break down a fifth. It is the want of correlation between the load and the strength of the bearer, between the acting force and the purpose to be effected, that is dangerous, and sometimes destructive.

As in commerce, the extreme desire to make great and sudden gains by bold but injudicious means, or the attempt to carry on extensive plans of business, out of proportion to the capital invested or at command, frequently causes embarrassment, and ends in shipwreck of fortune; so, in education and learning, the undue thirst for knowledge, or the prosecution of study with energy and earnestness disproportioned to the power of the brain and the mental capital, defeats its own purpose, and often ends in a wreck of the understanding, or a confused or weakened mind, instead of available acquirement and mental discipline.

There is a common notion that the mind—the spiritual essence—has no law of limitation, no necessary relation to the corporeal structure, and a merely accidental, yet un-

https://doi.org/10.1192/bjp.6.32.119 Published online by Cambridge University Press

willing connection with the brain ; but that, on the contrary, it is endowed with infinite expansibility, so that there is no end to its power for labor, or its capacity of acquiring knowledge. The prevalent plans of education have this boundless object in view. Limitless development and acquirement are held out as possible, and no question is raised as to the amount of work which the brain can do, or as to the variety of subjects to which its powers may be applied.

Whosoever believes that food may be taken merely to gratify appetite, without regard to its nutritive wants or digestive powers, and that the sensual desire may be followed as a guide in respect to diet,—or that his stomach has an indefinite capacity, so that he may eat at any and all times, whenever his appetite may invite him to do so, and whatever it may crave,—is in great danger of being led into error in the selection of his food, and in the quantity he may consume; and if his self-indulgence corresponds to his faith, he will not escape digestive derangement. It is equally certain, that the common belief that the mind will bear indefinite labor shuts men's eyes to the impassable limit of cerebral force, and makes them forget that the mind can work only in connection with the brain. Nevertheless, in the education of early years, in the studies of maturer age, in business, in politics, in the pursuits of public and private life, that involve the necessity of thought, calculation, and care, there is a frequent and even a general pressure upon the mental powers to the full extent of their endurance. From these causes, and from the frequent readiness of persons to endeavour to acquire a degree of knowledge which is great for them, to undertake responsibilities which are large for their mental strength, and to labor with their minds as vigorously as possible, and of course sometimes excessively, it necessarily follows that some must overwork their brains and exhaust their cerebral forces, and that some must become mentally disordered.

Childhood commences its literary and educational life with the notion held out to it, that the mind will bear as much, and can accomplish as much, as it can be induced to attempt, and no thought is given to the brain, nor caution in regard to the use of its powers. Through the school years the same idea prevails; the same boon of unbounded acquirement is offered to boys and girls, and they are encouraged and urged to make their utmost efforts to go on in the path or join in the race of learning. The opinion that

https://doi.org/10.1192/bjp.6.32.119 Published online by Cambridge University Press

they may run in the pursuit of knowledge without danger, is almost universal, and although only a few actually enter the heat of the contest, and strive to be among the foremost on the course, yet nearly all believe the doctrine, and few, perhaps none, are prevented from effort by any fear of injury to their cerebral health. The moderate but respectable scholar looks with envy or congratulation, rather than pity, upon those who are overworking their brains in severe but successful study; and these are held up by teachers and parents, by school superintendents and the friends of education and human progress, as examples for the less active to follow.

In this dangerous race of learning, to which all are invited and from which none are warned away, a comparatively small proportion of the children and youth of the schools, as we have said, enter and continue. The *vis inertiæ* of mind, the want of ambition to excel or of zeal for knowledge, the absence of motive for such vigorous and persevering mental exertion, the activity of other desires, not the fear of danger nor the wish to preserve the cerebral health, not due cautiousness but supposed idleness, not wisdom but imputed folly, prevents others from making the efforts of study that would be injurious to their brains. But the ambitious and the faithful, those who resolve to fulfil the hope of fond parents, and those who are susceptible of influence from teachers and associates, enter this course, and assume burdens which many of them cannot safely bear; and the plans of education, proposed by many zealous instructors, and adopted by many who are of authority in these matters, correspond, in a greater or less degree, with this willingness of parents and children to carry them out.

In a High School now in our view, the teacher proposed to some of his pupils to study the Greek, Latin, French, and German languages, mathematics, grammar, rhetoric, and physiology, all at the same time. The plan was accepted by scholars, approved by parents, and considered as an indication of lofty aim and praiseworthy energy on the part of an accomplished instructor. The pupils have in school seven or eight lessons a day. They are unwilling that the lessons should be short or imperfectly acquired. The brightest and most vigorous minds lead the way, and the others dislike to lag behind. They study earnestly at school in the day, and their evenings at home are given to the same work of acquisition. They are successful in their endeavors to learn much, and are rewarded by the approbation of their own

https://doi.org/10.1192/bjp.6.32.119 Published online by Cambridge University Press

consciences, and by being recognized as an honor to the school, a joy to their friends, and the hope of the coming age. But it is plain that this high mental action is already made at the cost of physical force; for more than a usual pallor rests upon the faces, and a languor seems to pervade the physical frames, of these youths whose minds appear to be so vigorous. These are the fixed habits, indeed, of only such as are considered the best schools, such as include a larger proportion of the most ambitious scholars, who acomplish much in youth, and promise to do much more in mature life. But in most schools, there are some who study thus injuriously, and lay the foundation of mental habits which, in the business and competitions of the world, will tend very strongly to break them down.

It must be admitted that there are not many who are made insane, or who even suffer any manifest impairment of mental health, during the ordinary period of pupilage in childhood and youth, by excessive study; but as all are taught and imbued with the faith, that the mind, being spirit and not matter, is bound by no law of finite beings,—that the highest and worthiest aims are to be accomplished by the greatest study,—that those who learn the most are certain to enjoy the warmest approbation of the wise and good, and the best success in life,—and as they are confidently told that they have taken the surest step toward the most desirable stations, and no voice of warning is lifted up to point out their danger,—it is natural and inevitable that many go away from school ready to apply their minds with the utmost intensity, and to work their brains with unsparing energy and inflexible perseverance, whenever an object sufficiently inviting or a motive strong enough shall present itself to them. These youths go forth to the world, and engage in its interests and affairs, with the same liability to overwork their cerebral powers as they would incur to overtax the powers of their stomach, if they had been taught that the more they ate the more strength would be given them, and the more ability to effect the objects of their being. They then enter upon and labor for their several pursuits with devotion and vigor, proportioned to the motives which their sense of duty, taste, ambition, or prospect of advantage may present to them, and their brains, like the digestive organs of the free liver, are in great danger of being weakened or disordered by over exertion. The consequences are alike in both cases, because the causes are simi

https://doi.org/10.1192/bjp.6.32.119 Published online by Cambridge University Press

lar; strength is wasted, and the regularity of action is disturbed.

The strength of all the animal organs is partly original and inherent; but, to a still greater degree it is a matter of cultivation and development. The strength of the new-born infant is barely enough to enable it to breathe, to cry, and to move its limbs. By slow and gradual training, in progress of time, it grows to be sufficient to perform the labors of manhood. In all the successive stages of growth and maturity, the child, the youth, and the man, can bear a burden precisely in proportion to the power that is developed, and no more. The child can roll about, the boy can play, the youth can do light work, and the man can perform hard labor without faltering, provided each has passed through the preceding and proper stages of training. In all these various stages and conditions, the physical frame can bear a definite amount of exertion, and all attempts to go beyond this not only fail of effecting their purposes, but exhaust the animal forces. Thus, the child cannot do a man's work, the student or the clerk or the tailor cannot perform the labors of the farmer, nor can the inactive lady do the heavy drudgery of the robust servant girl; and yet, probably, by judicious and persevering training, by commencing with a degree of exertion suited to their present strength, and increasing it from time to time as their power increases, most persons belonging to the weaker classes might develop an amount of force sufficient to enable them to perform the heavier labors of the stronger and more active. By this means, the student and the clerk may become farmers, and even stone layers. But this is not the change of a moment. It is the result of slow growth, a gradual progress from weakness to power, produced by careful cultivation and cautious application of the forces as they are created. In this progress, each stage grows out of its predecessor; each is larger than that which went before it, and opens the way for a still larger one to follow after.

There is not only this general law of gradual development, by which the usual progress is made from the weakness of infancy to the strength of manhood, but there are special developments produced by special training, by the application of the muscular system to particular purposes, whereby peculiarities of muscular force are established. Thus, the sailor has strong arms and comparatively weak legs; the rope-dancer and the pedestrian have strong legs and comparatively weak arms. Each of these can do his own usual

https://doi.org/10.1192/bjp.6.32.119 Published online by Cambridge University Press

work without fatigue or exhaustion; but they cannot interchange; the sailor cannot walk with the pedestrian, nor can the walker or the dancer perform the labors of the seaman or the stone-cutter without suffering. The farm-laborer, who works in every variety of posture, uses all his limbs and muscles, in every kind of action, and is therefore endowed with strength in all parts of his locomotive apparatus.

The stomach is subject to similar law of growth and habit. The food of the child and that of the man are very different, and neither would be sustained and made comfortable by that which is suitable for the other. Adults also differ in this respect, according to their different training. One enjoys and is sustained by one kind of diet, and another digests and is strengthened by another kind. The seaman's fare would oppress the delicate scholar, whose diet in turn would be but a meagre support to the sailor. The digestive organs can be trained to new habits, and even to bear that which, in the beginning, is painful. The consumer of tobacco at first is nauseated by its use, while the old and practised chewer and smoker seems to suffer from the want of it. All the powers of life come under this law. They cannot be exerted and applied, with their best success and greatest safety, except in ways in which they have been previously trained; and all attempts to use them otherwise are followed by results less perfect, by increased fatigue, and sometimes by organic or functional derangement.

This law of gradual growth and development is manifested in the brain and the mind. The child learns his alphabet and reads his picture book; the man reads of the affairs of the world; the philosopher studies the mysteries of nature; and all comprehend their several subjects with the same ease, because each has that measure of cerebral power which enables him to work safely and successfully in his own way.

The ordinary plans of education begin with the lowest and simplest elements, which demand only the slightest exertion of the perceptive faculties and the memory, and the least cerebral force, and proceed gradually from one step to another requiring more and more action of the brain, and developing more and more of its power, so that, if judiciously arranged and pursued until maturity, they create sufficient mental energy to transact the usual business and discharge the common responsibilities of life.

There is no employment which does not require some thought, some degree of self-direction, and, of course, some

https://doi.org/10.1192/bjp.6.32.119 Published online by Cambridge University Press

action of the brain. Most kinds of business which men manage on their own responsibility, and by which they obtain their support, necessitate some thought for their administration and execution. Every responsibility which any one assumes, every undertaking to accomplish any object, whether by his own exertions or by the instrumentality of others, is, to its extent, a burden upon the brain, the energies and power of which must be given to the work, as surely as the energy and power of the muscles must be given to any physical labor. Therefore, the management of any business or concerns, whether large or small, of general or of private nature, the administration of any affairs, whether simple or complicated, the discharge of the duties of public office, the responsibilities of high and important station, the control and the direction of other men's actions for the execution of any purpose, the superintendence of the common labors of a farm, a manufacturing establishment, or even of a workshop,—all these necessarily demand and make use of the cerebral forces. If one, with sufficient original mental capacity, and appropriate education and training for the purpose, should assume any of these responsibilities, and give to it only the ordinary attention, at no time expending more mental force than has grown out of the power previously developed, he will discharge his duties easily and successfully, and go on the even tenor of his way through life, without mental disturbance or exhaustion. But if the original or developed force be insufficient to meet the demands for mental action, difficulties must be encountered, and disturbance of mind will probably follow. Consequently, some men sink under their loads of care and anxiety, some are confused with the multiplicity and pressure of their responsibilities, and soon become deranged.

Men sometimes leave their accustomed occupations, which required comparatively little mental exertion, or to which capacity, education, and long habit had adapted them, and engage in others which require much more thought and study. Although most persons may do this safely, yet the change is not without danger; when farmers leave their lands and become traders, when country traders on a small scale become city merchants on a large scale, when regular merchants become speculators, when any one goes out of an old and tried sphere of business and enters a new and untried one, which involves greater responsibility, he increases the pressure upon his brain; and unless he has a well-disciplined mind, and is accustomed to severe labors, he incurs some risk of over-working and impairing his cerebral structure.

https://doi.org/10.1192/bjp.6.32.119 Published online by Cambridge University Press

This is especially the case with those who suddenly change their life from one of quiet ease and irresponsibleness to one of great excitement, labor, and duty. Some, unused to mental toil, float carelessly along the smooth stream of time, until, by a sudden turn of fortune or circumstance, they are placed in laborious positions or elevated to important offices, where the weight and care of business, and the necessity of producing results beyond their former experience and endeavors, press too heavily upon their powers of endurance. Sooner or later, they are found inadequate to the charge they have assumed, and unable to sustain themselves in their new relation without suffering. They expend more cerebral force than the brain can spare without wearing upon its strength, they overdraw upon their vital capital; some break down in health, and some sink in death.

Charles Fox, for many years aimed at the Premiership of Great Britain. He was an active man in Parliament, but was not accustomed to assume great responsibilities, or to bear heavy burdens on his brain long and continuously. He had not exact and laborious habits of mind, and when he attained the object of his ambition, and was placed in the highest office, he found that it required a degree of mental discipline and a continuity of intense mental labor to which he had not been used, and which he could not sustain. In a short time he sank beneath the load, which overtasked his cerebral forces and overstrained his powers.

A much greater and more dangerous change of habit occurs, when one goes out of the track which he has trodden for years, perhaps for life, and enters another which requires, not only a much greater degree, but an entirely different kind of cerebral action. When farmers, or mechanics, or laborers, who have been accustomed to work with their hands, and to exert their mental powers only sufficiently to direct their physical processes, suddenly and without proper training undertake to become scholars; when they endeavor to dive into the mysteries of metaphysics, fathom the depths of philosophy, or solve intricate problems of mathematics; when they give their minds intensely to these or to other kinds of study, whether of literature, science, morals, or theology, or when they enter the field of politics, or tread the mazy paths of law,—when in any way they set the brain, which had been previously inactive, into vigorous action, or impose upon it new and large burdens out of proportion to its power,—there is danger of exhausting its forces, and of having the mind bewildered, and even disordered.

https://doi.org/10.1192/bjp.6.32.119 Published online by Cambridge University Press

New subjects of interest are occasionally presented to the world, and old subjects sometimes attract extraordinary attention from individuals or the community. Religious doctrines, moral questions, political movements, measures of reform, scientific matters at certain seasons, assume an unusual importance to the world, and to some they are of absorbing moment. This last class take hold of them with earnestness, and pursue them even with vehement zeal. They give their minds and their hearts to them, and endeavour with intense application, to understand them. The more enthusiastic converts, desirous that their new doctrines should be believed by all, labor for their diffusion. They become propagandists, and embrace every opportunity to impress their views and their feelings upon others; they talk, they lecture, they preach and they write, as long as their strength lasts. There is a degree of contagious influence connected with some of these matters, which encourages their diffusion, and enlists many to engage in them, and even some to become devotees in their behalf. But while this community of interest increases the zeal of the votaries and their willingness even to sacrifice themselves for the matter they have at heart, it does not increase their power of cerebral action, or of enduring the weight which they take upon their minds. Absorbed in their purpose, they are carried away by the sympathy of associates, and seem to think, that, as there is no apparent limit to the value of the subjects that engross them, there is also no measure to their power to study and to teach them.

Any of the vital actions may be made so intensely powerful as to concentrate, within a short period, the energy that should have been expended through a long time, and to produce at once the mischief that is usually the slower growth, through months or years of continued over-exertion. One great excess in eating, a single surfeit, especially if the food be indigestible, as well as excessive, may oppress and disturb the stomach, and at once create and leave behind functional disorder, perhaps organic disease, that may be long protracted and difficult to be removed. A violent exertion of the muscles, one great effort, may in a few minutes do the evil work of months of hard labor; as when a porter takes upon his shoulders and attempts to carry double or treble his usual burden, or when one works with great violence on an engine at a fire, or in an amateur boat-race, or in a struggle for life. In these cases, a strain or

https://doi.org/10.1192/bjp.6.32.119 Published online by Cambridge University Press

weakness of the muscles and impairment of the locomotive apparatus are sometimes produced, which are not easily removed and may remain permanently. So the brain, by intense excitement, or concentrated labor, becomes unbalanced, and its actions disturbed. In a state of overwhelming anxiety, in very deep study, in some overpowering effort of public speaking, in the almost agonizing excitement of some religious meeting, in the endeavor to fathom the infinite, to search into the mysteries of unseen worlds, to hold communion with spirits, in the absorbing interest of some kind or some stage of business, in a financial crisis or commercial panic, in a scene of gambling, in any great struggle, where much depends upon the turn of a moment,—in these conditions, and such as these, the mind is violently agitated, there is great exaltation of the feelings and powerful cerebral action, the brain is given up to the absorbing interest of the present subject, and, for the moment, its attention cannot be diverted nor its energies directed at will, for the maddening power of the ruling idea or emotion controls all its forces. This violently energetic action of the brain is never without danger. In some, the organ may be left merely in a state of fatigue, from which a period of rest will recover it; in others it may be exhausted and indisposed to labor, for a considerable time; and in others of a more delicate or weaker organization, or less mental discipline, this great agitation may leave the head disordered, and the mind deranged.

The instances of insanity from this class of causes are manifold. They come from many a field whence other issues are expected. The religious revivals, in which the feelings of men and women are vehemently agitated, and the exciting eloquence of some earnest and powerful preachers, have had their victims of disordered mind. In other and less hopeful circumstances, the brain loses its balance. In scenes of disaster, as shipwrecks, fires, railroad crashes, steamboat-explosions, where distress and destruction are spread abroad, in dangers and threatened evils, when men are crushed down with overwhelming apprehension, many lose their self-control, and become bewildered. Their reason is, for the time, overthrown; and although most regain their self-possession when the trouble and the peril are over, yet in others the confusion remains, and in some, mental derangement is established. Among those who think that they can avail themselves of animal magnetism

https://doi.org/10.1192/bjp.6.32.119 Published online by Cambridge University Press

to search into things not revealed, who believe themselves endowed with power to perceive what human eyes cannot see, who profess to be mediums between the spirits of the departed and the minds of the living, or who endeavor to hold communication with dead men's souls, especially among those who associate together for any of these purposes, and increase each other's excitability by mutual sympathy and encouragement, there is necessarily much unnatural and unhealthy excitement, the brains of many are agitated beyond their power of healthy endurance, and of these some become insane.

In like manner, the brain is overworked in the zealous pursuit of public objects. Some give themselves up to the interests and labor of a political campaign. They rush to the contest with all their heart and their intellect; they think of little beside, and care for nothing else: they come to believe and act as if the great interests of the world hung upon the issue of the struggle then going on; their nights and their days are devoted to effecting this great object, their brains are overwrought, their minds know no rest, they are agitated beyond due measure, and their mental health is in danger of suffering from these destructive influences. In national revolutions, the same absorbing excitement lays hold upon people, and grapples them with more power than in political struggles; for here is more to be gained and more to be lost. Here are agonizing fears and exhilarating hopes, and the brain is oppressed with the doubt of the issue and the endeavor to make it successful. Many are disturbed by this state, some sink under it. In some severe commercial crisis, when great prosperity is followed by great adversity, in the transition from supposed and apparent wealth to real bankruptcy, when men struggle to save themselves from sinking, and all their cerebral forces are bent upon their own safety, in doubts, fears, and despair, the mind may wander, the brain lose its balance and become disordered. In public manias, when the world runs mad after great phantoms, as in the South Sea Bubble and Law's magnificent scheme, in lottery-dealing, in land speculations, in these and such as these, the brain is unnaturally excited and agitated. For the time, men lose their ordinary principles of reasoning, they believe too much where their feelings prompt, and too little where their feelings oppose, and their mental balance is suspended, in some permanently lost.

https://doi.org/10.1192/bjp.6.32.119 Published online by Cambridge University Press

Any structure or vehicle, however rude or strong, will be broken down by a weight, if thrown upon it with precipitate violence, which it would have borne and carried, if carefully placed upon it. Any sudden interruption of action always gives a shock to, and often injures, a body in motion, and the injury is in proportion to the velocity of the arrested movement. Thus, when a stone falls among the rapidly moving wheels of a fixed machine, or when a railway train runs swiftly upon an obstacle, the wheels and the engine, the frame and the cars, are injured, and may be destroyed, by the violence of the shock. Likewise, when any one running at his utmost speed strikes against a wall, he is sure to receive a severe blow upon the part which meets the obstacle, a shock to his whole frame, and perhaps serious injury. In the same manner, in any sudden interruption to the mental actions or the emotions in a high state of excitement, as when ardent hopes or earnest and fond expectations are instantaneously cut off, or when one is disappointed in love, in ambition, or in the confident anticipation of fortune or success, there is depression and disturbance. Likewise, when any unexpected burden is thrown at once upon the brain, as when terrible danger, whether real or imagined, suddenly presents itself and causes fright, or when distressing tidings are communicated, as of the death of friends who were supposed to be in good health, or of some other great calamity which had not been anticipated, the violent sorrow sometimes leaves the mental actions in a state of protracted or permanent disorder. In these cases, the mental disturbance comes not from the weight of the distress, but from the suddenness of the impression. Its swift impulse gives it power more than its due. Whereas if the brain had been prepared by anticipation for the painful event, if the mourners had watched over their friend through days and weeks of sickness, and the catastrophe had been foreseen and expected, if death had visibly approached, through the gradual increase of disease and danger, they would have been ready to meet the affliction, if not with less sorrow, at least with greater power to bear it, and the mind would not have been overthrown.

From errors in the use of both the physical and the intellectual powers there proceed all grades of disorder, from the slightest languor or irregularity to positive and severe exhaustion and disease. All the organs and their functions are subject to these gradations of disturbance, and none

https://doi.org/10.1192/bjp.6.32.119 Published online by Cambridge University Press

more than the digestive and the nervous systems. The Protæan forms of dyspepsia, almost infinitely varied, and their numberless degrees of intensity, are equalled by the manifold phases and degrees of mental unsoundness and perversity.

Between the well-balanced and healthy mind and recognized insanity, their is a broad middle ground which neither occupies exclusively, but in every part of which the elements of both, in various proportions and complications, may be found. Here is every grade of mental obliquity and defect, resulting from perversion, or excessive labor, or neglect. Between the mind of average power and dementia, there are those who have every measure of weakness,—the dull, the simple, and the imbecile. Between intellectual soundness and mania, there are all the varieties and degrees of vagary, perversity, and disproportioned and inharmonious qualities and powers. In some, one faculty or element is too active or too sluggish, and in others a different one is exuberant, or comparatively or positively dormant. Some are unbalanced, some are easily excited or disturbed, others are passionate; some, without ordinary motive or reason, adopt new opinions, or engage in new projects; others are odd, eccentric, whimsical, or capricious. In the formation of their principles, and in the conduct of their lives, some are governed by their impulses or by their first impressions rather than by reflection or reason. Some are volatile in their habits, fickle in their affections, untrustworthy in their judgment, wild in forming their schemes, or unstable in the execution of their plans. Others are victims of indecision of character, and come to their conclusions with various degrees of hesitancy and difficulty, if they reach them at all. Some lack firmness of purpose, and are irresolute in action. Others, on the contrary, are wilful and obstinate, and adhere to opinions and purposes once adopted, whatever new reasons or circumstances may be presented for a different course. In some, self-esteem is so large and powerful as to make them disregard the usual common sense of mankind, and to prevent their harmonizing with their fellows and profiting by the wisdom of the world. Through all these and many others there runs a vein of unsoundness, of greater or less extent, due to the measure of the misappropriation of their cerebral forces, the mistakes in the use of their mental and moral powers, and their indulgence in, and cultivation of, unhealthy and perverse habits of mind or of action.

https://doi.org/10.1192/bjp.6.32.119 Published online by Cambridge University Press

As in the administration of financial affairs every wrong appropriation of funds or credit, every wrong purchase or sale, is attended with loss, and every excess of expenditure, however small, over the income, however large, is charged to the pecuniary capital; so in the management of life and its powers, every waste through misappropriation of vital force, however slight, every over-draft and excess of expenditure, is charged to vital capital.

In both business and life the consequences of repeated errors, of the waste or loss of money and of living power, are cumulative. The effect of each, be it ever so small, is added to that of the preceding, and the loss, injury, or impairment gathers weight with each successive transgression. This accumulation of weakness, or disorder, is often very slow and imperceptible in its progress, and it may be long before the evil is recognized. A man may indulge his appetite with food of such kinds, or in such quantities, as require but a little more than his usual and average digestive power to convert it into chyle. He may repeat this through months, perhaps through years, before the over-draft upon his gastric force produces a sensible weakness or pain, and even then the cause of the digestive trouble, the waste of power, and the accumulated disorder are overlooked; for it is not easy to understand or believe, that an article of diet or gastronomic indulgence, which had been so long not only harmless, but, on the contrary, comfortable, should at length become injurious. A man may labor daily somewhat beyond his average muscular strength, and yet make so small an inroad upon his constitutional vigor, and so small an excess in the expenditure of force, that it may be years before he becomes conscious of the depreciation of power; but the effect of persevering waste ultimately manifests itself, and if not then arrested by change of habit and more moderate exertion, the waste goes on, and the weakness increases, until decrepitude is prematurely established. The same law holds in regard to the brain. It is seen in the growing effect of repeated waste and perversion of the cerebral forces, in the increasing consequences of continued neglect or misuse of the moral and intellectual powers. The evil result of each individual error may be extremely small and imperceptible; yet each, however minute, is charged to, and deducted from, the mental capital, and all of the same kind that come after are added to those that have gone before, until their accumulated weight becomes manifest in some weakness, or fixed peculiarity or perversity, or even grave disease of the mind.

https://doi.org/10.1192/bjp.6.32.119 Published online by Cambridge University Press

Any error or mistake in self-management once committed, opens the way for another of the same character to follow, more easily; and the consequent loss of power lessens the means of resistance. The temptation and the facility of commission increase, while the protective and recuperative force diminishes with the repetition. Whoever allows in himself any excessive expenditure or misappropriation of mental force, or any indulgence in passion, caprice, oddity, impulse, or perversity, and takes but a single step from the path of discipline, propriety, or reason, finds the second step easier than the first, the third easier than the second, and each succeeding one less difficult than that which went before. Whatever of wrong or loss is established by the first, is treasured up and increased by the second and the third, and this, if not resisted, may go on, slowly but surely, until it becomes strong enough to influence, perhaps to control, the mental actions of the emotions. Whatever any one may sow within himself, whether it be good or whether it be evil, will grow almost insensibly, by repeated indulgence and persevering cultivation, and sooner or later become, in greater or less degree, an element of his character. Ever-watchful Nature, although generous in her provisions for and bountiful in her gifts to her children, is yet inflexibly just and rigorous in her dealings with them. She requires of every one the complete fulfilment of the conditions of life. She gives to each his due and sure reward for every instance of faithfulness, and exacts from each the penalty corresponding to every disobedience, in the use of all the organs, and all the powers, whether of body or of mind, that are bestowed upon man. There is no forgiveness in these matters. All the consequences of neglect and violations of the law are gathered, in every instance, and charged to the vital capital; and their sum, in every succeeding period, may be found, according to its extent, in mental or physical disorder, in reduction of strength, in the vitiated constitution.

https://doi.org/10.1192/bjp.6.32.119 Published online by Cambridge University Press