

the function of thought, has to supply nervous energy to maintain the stomach in its integrity, so that it may have the inclination to receive and the power to digest food. The heart also requires the assistance of the brain to give it power to propel the vital current through the blood vessels, giving off various important secretions during its passage through the secretory organs, supplying and nourishing those parts which have been removed by natural or accidental means, until it is returned through the veins, reaches the lungs, there to be exposed to the vivifying and purifying effect of contact with the air and become fitted for the purposes of life, and is finally passed on to the heart, ready again to pursue the same course. Now, all the various processes of digestion, assimilation and nutrition are dependent upon a due supply of nervous power to the organs by which these processes are carried on; and hence it will be evident, from the brief physiological sketch already given, that to keep the brain constantly employed, and at the same time to supply the lungs with an impure and deficient quantity of air, must lead to derangement in some of the vital functions.

These deviations from health soon become evident; the countenance tells tales: the appetite disappears, or becomes fastidious and squeamish; instead of buoyancy of spirits and energy there is a quiet gravity, and but little inclination for light and healthy amusements; but still the mind does not perceive the enfeebled state of the body, unless from some sudden impulse, or the occurrence of events which recal old associations, there is an effort to display the physical energy which existed before a studious life was commenced. Yet although under these circumstances there is not positive disease, still there is a condition of the system liable to disease. Atmospheric changes, which before were borne with impunity, readily give rise to catarrh and other disorders of the respiratory organs. Any slight impropriety in diet or indulgence at table, which at one time caused but little and transient inconvenience, is now followed by days of uneasiness; such as nausea, loss of appetite, thirst, and headache, showing that there is a deficiency in the "healing power of nature," and teaching the suffering that law of nature which insists that even a man's habits and enjoyments must be in conformity with his occupation and position in life. Why is it that those of studious and sedentary habits exhibit the countenance "sicklied o'er with the pale cast of thought?" Because the brain, as it were, monopolizes the nervous energy, and the heart, deprived of its proper share, does not possess sufficient power to propel the blood into the smaller vessels on the surface of the body; and because the blood itself, not having been properly purified and oxygenated by contact with pure air when passing through the lungs, it is vitiated in quality as well as decreased in quantity; and it is partly from this latter cause that we see the pimpled face and the various forms of skin diseases to which those of sedentary habits are liable.

Why does the appetite for food fail, and why is it that the small quantity taken often remains as a load to the stomach, causing pain, heart-burn, acidity, offensive breath, and unpleasant taste in the mouth? Because the stomach does not receive a sufficient supply of nervous influence to manifest the *sensation* of hunger; and because the food taken, instead of being subjected to the process of digestion, which is purely a vital process, and one especially governed and maintained by nervous influence, undergoes the same fermentation and putrefaction as all animal and vegetable substances do when exposed to the effects of moisture and warmth; hence acids are formed, gases are extricated, and irritation is caused by an effete and useless mass.

These facts and physiological explanations are thus plainly given, because, by-and-by, important rules for the maintenance of the health, both of teacher and pupil, and, in fact, of all whose occupations are sedentary, will be deduced from them. To proceed. Not only do the functions of the stomach and the power of the heart suffer, when the brain is the organ chiefly exercised, but likewise the nervous system itself suffers; sometimes as an effect or concomitant of gastric derangement, sometimes as an affection *per se*. There is a state of the nervous system from which those of studious and sedentary habits occasionally suffer, which plainly and painfully shows the effects of intense application and mental exhaustion. It is one which cannot be explained in terms intelligible to those who have never experienced it; and although often made the subject of unkind remarks and unfounded suspicions, still it is, in some cases, an affliction as distressing as any to which the scholar is incident. We mean those sensations which are implied by the expression "How nervous I feel," and which are only known, in their real intensity and suffering, to the debilitated, the anxious, and the studious. Under this state of the nervous system the most trivial circumstances will annoy; a thoughtless word said in the most innocent jest will cause mental pain, an "ant-hill" of difficulty will appear a mountain of opposition. With a will disposed to study and acquire information, the least mental effort requires a forced application, and the simple process required to hear and attend to a question and frame a reply, even if that reply be but a monosyllable, is irksome.

Then, again, there are certain disordered states of the nervous system, or, rather of particular nerves, brought on by close and studious

habits, (but in which a disordered state of the digestive organs is an almost constant concomitant), which are evidenced by pain and other disordered states of sensation, or of the nerves supplying the organs of sense. First, and most agonizing of these diseases, stands that nervous affection called "tic doloieux"; which, from the frequency with which it attacks those of high intellectual attainments and devotion to study, has been designated "the curse of intellect, and the penalty of application."

The nerves supplying the various organs of the senses may be impaired in their function by a disturbed state of circulation within the head, induced by a close and continuous study. In the eye, for instance, vision may be weakened, constituting short sightedness; or perverted, as occurs in those who cannot perceive the distinction of colours; or the impression conveyed to the brain by the optic nerve may be entirely imaginary, to which perversion of function may be referred black spots floating in the air, ocular spectra, and other illusions. In fact, each of the three functions of the brain—namely, sensation, thought, and voluntary motion—may be deranged by constant application and want of exercise and fresh air. In support of this assertion, cases might be cited from innumerable authors, both of the past and the present day; but it is not necessary to refer to them, for doubtless many of the readers of this paper have, either in themselves or in others who have come under their notice, had many opportunities of observing the pernicious effect of confinement and close study. The mind requires rest as well as the body. We know that long continued muscular exercise causes fatigue; and that after a certain time no manual task is performed either with satisfaction or comfort. It is the same with mental labour. The ardent student, forgetting everything but the attainment of his ambition, may for a time—thanks to a natural good constitution and the regularity of his previous habits—labour without intermission; but soon sleeplessness, dyspepsia, and a host of nervous ailments, remind him that he has a body to care for as well as a mind to cultivate, and that he must not transgress the laws ordained by nature for his own conservation, without paying the penalty of his commissions and his omissions; his mind becomes less vigorous, his memory less retentive, his perception less acute, his judgment less accurate; he becomes melancholy, irritable, and captious, and a gradual increasing imbecility of mind, and weakness of the body compels the total abandonment of all intellectual pursuits: whereas, had he but studied in moderation, allowed himself exercise and relaxation, attended to any deviation from health in the functions of his body, he might have gone on increasing his store of knowledge; for if his progress had been more slow it would have been more free from the interruptions caused by bad health, and consequently more sure. The error of our taxation and continuous mental labour is most common in the meridian of life, when the mental powers appear to be fully developed, and to exist in their full integrity. They demand to be actively employed; the mind seems capable of so much that there appears to be no limit to its capabilities. It is now that genius and a cultivated intellect make their mightiest efforts; they enter the race from which there is no turning back, and in which there is no resting place, with the determination "*aut Caesar, aut nullus.*" For a time no uneasiness is felt; success, and the pleasure of success, attend every step; the mind, under this stimulus, appears able to master every difficulty and to grasp every undertaking; but the season of mental depression must come, and that which was before all splendour and pleasure now becomes gloom and heaviness. Let the man who is endowed with superior genius, learning, or talent, pause before he abuses and wears out the great and noble gifts with which Providence has blessed him; let him remember that they are given him to use not to abuse; and that it is his duty, both to himself and to his fellow-man, to endeavour to preserve his mental powers in their integrity for many years, not to sacrifice them in a few.

In a paper published in the "English Journal of Education" of August, 1853,* teachers and parents were warned of the dangers of youthful precocity. A few more remarks bearing on that subject now become necessary. During childhood and early youth the various vital functions of the body are in an extraordinary degree of activity, for they have many and important offices to perform. The pulse of a child beats nearly twice as many times during a minute as that of a man, and the action of the lungs is in a like increased proportion; consequently a copious supply of pure air is necessary, that the blood when passing through the lungs may be rapidly and perfectly purified and oxygenated, for this is the intention of the accelerated respiration; and therefore, without plenty of pure air, no child can properly increase in stature and strength.

In boyhood, the rapidity of these actions is diminished; in adolescence, still more decreased; and when manhood is attained, and the bones have received their solidity, the muscles become braced and toned, and the processes of assimilation and nutrition become directed to the maintenance, not to the building up and increase of the body;

* On the Moral and Intellectual Management of Children.