

attention of the young during their varied exercises, whether secular or religious, and thereby securing a far larger amount of intellectual labour; and, still more, the strengthening and assisting of moral training through the cultivation of habits of order and physical obedience. And whence these results?—Mainly from the union subsisting between the body and the mind, the sympathy they have for one another, the way in which the body operates on the mind. We are utterly ignorant, it is true, as to the mode in which matter affects mind or mind matter, but that they do act and re-act the one upon the other, and that in the most extensive and powerful manner, is a truth which no one, we believe, will venture to dispute. If, then, the body exert such a powerful influence over the mind, if the health and activity of the body tend so extensively to the health and activity and power of the mind,—a truth which will be increasingly unfolded as we proceed with our subject,—it becomes a vastly important question as to what is to be done, so as to secure and preserve and extend the former, that full scope may be given to the latter. Before we are in a position to answer this question satisfactorily, we must be well acquainted with the nature of the bodily organs themselves; we must possess some knowledge of their anatomy, their external configuration, the laws that govern them and the functions they perform, both individually and collectively. It is on this account we insist on these branches of knowledge as indispensably necessary in the professional training of the schoolmaster. If the tradesman, however dexterous and skilful he may be in the use of his tools, occupies a commanding vantage ground, when he knows thoroughly the nature of the material on which he is operating, so is it with the educator. His great business is to operate upon the intellect and conscience of his pupils, and as one way of doing this is through the medium of the body, it is perfectly clear that, if he would use this way effectually, he must be well acquainted with its organs in all their bearings, and relationships and dependencies; in other words, he must be conversant with animal physiology.

Now it is in this very relationship that we propose to discuss the whole subject of physical education. We shall lay down certain propositions plainly deducible from the classes or systems of organs adverted to, and in the order in which they are mentioned, and evolving great and important points on the branch of our subject now under consideration. In the remaining part of this article we shall merely sketch these propositions, and in future numbers discuss them *seriatim*.

Proposition 1st. That it is the bounden duty of all interested in the rising generation, and specially of parents and teachers, to use every means for the growth and development of the various parts of their bodily frame.

This proposition is founded on the nutritive system of organs, or that system on which the whole process of assimilation depends, comprehending digestion, circulation, and respiration. Wonderful indeed are the changes through which the food that we take passes, before it becomes part and parcel of ourselves, and diffused through the body in a vitalized condition! But wonderful though they be, they are indispensably necessary for the nutrition and growth of every part of our physical nature. The great practical points involved in this proposition, in so far as physical education is concerned, are the ventilation and temperature of school houses, the provision requisite for securing these essential elements, essential alike to the Master and the scholar, and which, if un-

attended to, sets at defiance all the efficiency and experience of the former, and all the diligence and perseverance of the latter.

Proposition II. That every means should be employed for the purpose of imparting size, solidity and strength to the supporting system of organs, in the young.

Here we shall have occasion to consider the nature, the composition and the uses of the bones of the human species; and this, again, will bring under our notice the whole subject of the construction of seats and benches in schools, their being graded according to the size and age of the scholars, &c., &c.

Proposition III. That children ought to be trained to habits of cleanliness, neatness and order, not merely for the sake of decency and propriety, but for the preservation of the health and the invigoration of the physical frame.

This proposition is founded upon the cutaneous system of organs, and will naturally lead to the consideration of its functions as the most powerful absorbent and exhalant, and the consequent necessity of preserving the skin in a state of healthful circulation.

Proposition IV. That every schoolmaster ought to provide a due supply of out-door and in-door physical exercises for his scholars, and that the latter be intermingled with their intellectual and moral education according to circumstances.

This is the most important of all the propositions we have stated, and that because of its direct and immediate bearing on intellectual and moral education. It will demand a thorough analysis of the locomotive or muscular system of organs, more especially the great law of the muscles;—namely, relaxation and contraction, or repose and activity;—and the operation of this law upon the brain, the seat of thought. The in-door exercises are such as reading all together, singing, marching, simultaneous rising up and sitting down, the four motions, &c. These exercises must be varied to a certain extent every day; and are as necessary for the juvenile and more advanced sections as they are for the initiatory, only, in the latter case, they require to be more frequently repeated. The out-door exercises are principally the circular swings and gymnastic posts, though often games may be added, such as hand-ball, battledore, la grace, skipping ropes, marbles, large china bowls, &c., &c. In all these exercises, the trainer himself must show the example;—indeed, without this, one of the main benefits of the in-door exercises would not be served.

Proposition V. That every means should be used for securing the healthful and vigorous development of the nervous system of organs, not merely because it is the highest and most refined part of our physical constitution, but because it is the seat of the mind, that substance which feels and perceives and thinks and directs, and, in subserviency to the accomplishment of whose purposes, the whole bodily organization has been fashioned.

This will involve the consideration of the anatomy of the whole nervous system, the uses or functions of its various parts, and still more, the conditions on which the health of the brain principally depends, viz., a sound hereditary constitution, a due supply of well oxygenated blood, and regular systematic exercise. And all this will be followed by the laying down and expounding of certain rules to guide and direct in this exercise, so essential alike for the health of the body and the expansion of the mind, both intellectually and morally.

Such is a brief outline of the course we intend to pursue in the discussion of physical education. Much has been written