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PHYSICAL DEVELOPMENT.[1]

GREAT interest has, I am happy to state, been taken in the results already obtained by the Polytechnic Physical Development Society. Their publication at the Leeds meeting of the British Association has caused inquries for further information to be addressed to us from all parts of the kingdom, the continent, India, Africa, and America. I mention this because it shows that the public are beginning to realize that the physique is something more than a matter of great interest to scientific observers; that it is, in fact, a subject of practical importance to each one of us; and that the time is ripe for the formation of an organization to deal with it as a science and an art.

It is, doubtless, pretty generally known that, broadly speaking, the difference in the physique of man in the highest centres of civilization and that of man in a savage — or, to be more accurate, in a lower state of civilization — is, with the exception of parts of the brain, greatly in the favor of the latter; that is to say, we have obtained the advantages of civilization, with the above exception, at the expense of the body; and inasmuch as we are continuously making further advances in knowledge, and applying that knowledge in the ordinary routine of daily life, the tendency of this progress still is to the further detriment of the body. This is not an agreeable fact to contemplate, and the reminder that the "fittest" will survive neither affords us compensation for the injury nor points out the means by which it may be obviated; for the class of the fittest for the circumstances of a generation ago is not the class of the fittest for the circumstances of to day, and the class of the fittest for the circumstances of to-day will not be the class of the fittest for the circumstances of the next generation. Hence this most important question arises, How can we obtain for civilized man a physique equal at least to that of man in a lower state of civilization, and make the further advances of knowledge tend to the advantage of the body? The answer to this question, I shall show, lies in the ascertainment of the effects of the conditions of our habits and surroundings upon the body, and the application of that knowledge to our own protection and advantage.

Nearly twenty years ago I commenced the investigation of this subject, and the results of that research I laid before the British Association in 1886–87. Then I showed that the size and shape of the chest varied as I varied the conditions to which it was subjected. For example, when I submitted a chest to conditions that tended to develop it, that chest increased in size, and its form or type changed accordingly. When I submitted a chest to conditions that tended to decrease it, that chest decreased in size, and changed its form or type accordingly. I ascertained that those results were absolutely invariable, and could be carried out within such wide limits that, on the one extreme, they embraced the class of the non-survivors, through consumption, and on the other, the finest physique of the class of the survivors or fittest. I pointed out the fact that we had an example of one type of chest forming a series of types that have varied precisely as the conditions to which it was subjected have varied. At birth the male child of all classes has the same type of chest, but at maturity he has that of the class to which he belongs. We have the same relationship between conditions and type; on the one hand, in those who use wind instruments, or who by their occupations require to greatly use their lungs; and on the other, in those who spend a great portion of their time in a stooping position, or who compress their chests either by the instrument they use in their work or by a corset. The great development of the muscles of the trained athlete and the wasted muscles of the paralytic are due to to the conditions of their use and disuse respectively. We know that the head has been altered in shape by direct pressure, and that the greater size and the more complicated arrangement of the brain of a European to that of an aborigine of Australia is produced by the greater mental training of the former. The difference between the hands and fingers of a pianist and those of a man accustomed to lift heavy weights is produced by the conditions of their occupations. Upon the presence and absence respectively of shoes depends the difference in the size and shape of the foot of a Chinese lady and that of a woman in the uncivilized state. The color and thickness of the skin vary according to the conditions to which it is subjected, and there is the same relationship between the size and shape of each part of the body and the conditions to which it is subjected. Therefore, the type of man after birth is solely produced by the conditions to which he is subjected. Hence the formation of race by man's continuance under the same conditions, and its subsequent division into sub-races and families by his migrations into new conditions and the minor differences therein. Hence also the difference between the same species of animals under the conditions of nature and of domestication, between the products of the same seeds when sown in different localities, between the same plants when placed under different conditions, and the return of man, animal, or plant to former types when subjected to the conditions that produce that type.

It would be difficult to overestimate the immense importance of the facts just briefly referred to. They prove to us beyond the possibility of a doubt that man is what his habits and surroundings make him; that he is a member of the class of the survivors or fittest because the conditions, as a whole, of his habits and surroundings are favorable to him;

[1] Godfrey W. Hambleton, president of the Polytechnic Physical Development Society, London, in Physique.