

Another list of 240 illustrious names, gives their average age as 66 years. The great men of the past have had not only good brains, but good bodies, and the time given to physical culture was productive alike of increased tenure of life and of the highest intellectual attainment. Gladstone has his private gymnasium, and is found regularly taking outdoor exercise, and especially at his favorite pastime—felling trees. On the morning of the day when he introduced his measure relating to Home Rule for Ireland, and when the whole world was his audience, the first hour after rising was spent in his gymnasium. Bismarck has always been devotedly fond of sports, and is as earnest in their pursuit and advocacy as in his work of diplomacy.

It has been found at Harvard that students take about the same rank in acquired gymnastics as they do in their regular studies. Brain and nerve substance are behind every well directed movement, indeed the association is so intimate that it is impossible to assign to each, *i.e.*, to muscle and nerve, its exact share in the result. Du Bois Raymond has shown, from the standpoint of a comparative zoologist, the necessary connection between brain and muscle, and that by far the most marked influence of physical exercise is upon the nerve centres. Gymnastics, fencing, riding, swimming, calisthenics, are as much exercise of the cord and central nervous system as of the muscles and joints. The gracefulness of every movement depends as much upon the proper coördination of the various groups of muscles as upon their individual power; and the power of coördination or power to determine harmonious action is the special work of the nervous system. The gray matter of the brain, *i.e.*, the active portion in which are located the centres that control speech, action and thought, is at work, equally with the muscles, in securing harmonious movement, is exercised at the same time and is the gainer through the law of self-improvement. Faculties, functions and organs grow and are strengthened by exercise, and are weakened by disease. The child develops brain every time it makes a well-directed effort to grasp the object of its desire. The movements of the child are as essential to the development and well-being of its brain, as the integrity and health of the brain are to the growth of its hand.

In this work, *time* is an important element.

Franklin's theory that intense energy in action for a short time is equivalent to slight force acting through a much longer period, is not sound or safe doctrine.

All-important as it is that boys and young men should give more attention to the perfecting of the body, yet it is to the girls and women that this subject should be of greatest interest. Gail Hamilton says: "A girl can go to school, pursue all the studies, and know them—not as well as a chemist knows chemistry, or a botanist botany, but as well as they are known by boys of her age and training, as well, indeed, as they are known by many college-taught men—enough at least to be a solace and a resource to her; then graduate before she is eighteen and come out of school as fresh and eager as she went in." No doubt this is strictly true, and yet how many there are who fail to realize this fortunate result, not from any inherent unfitness for the work to be done, nor because in any way inferior mentally or physically to young men and boys of the same age; but because, *first*, that custom has imposed habits of dress that are injurious; *second*, that the temptation is greater to live within doors, deprived of sunshine, fresh air and exercise; and, *third*, because the laws of nature demanding special attention during the years usually devoted to school, are nearly always ignored.

That the type of breathing in woman is not the same as in man, that in the former it is nearly altogether upper thoracic, and in the former general, calling into play the lower portion of the chest as well as the upper, is manifestly the result of a long period of dressing in such a manner as to constrict the lower portion of the chest and hamper its movements, and is a potent factor not to be omitted in recounting woman's disability. The temptation to live indoors should be met by the regular pursuit of games and exercises that are adapted for boys and girls alike. The consideration of the third point brings up the question of the co-education of the sexes, which has been considered as an intellectual problem, and as a social problem, but which for its effective solution requires the knowledge of the physiologist. In the matter of the intellect, no teacher calls in question the statement that the girl is the boy's equal; so far as concerns morality, there is abundant testimony that young men and women, as well