

"A primrose growing by a brim,
A yellow primrose was to him,
And it was nothing more."

Consider for a moment the part that muscles play in the civilization of the race. Whatever man has achieved in the subdual of the world, or in the elevation of the species, though it may have originated in the mind has been wrought out by the muscles.

Muscles are more than servants for the mind: for no master is entirely incapable of doing things without servants; but without muscles the mind, so far as the plane of activity is concerned, would be absolutely powerless. The most ghastly evidence of this truth is the fact that men in a state of trance are often burned alive; unable by so much as a wink or a breath, or a change of expression in the eye, to tell their weeping friends that they are not yet dead.

The muscles make one half the body by weight, and each muscle fibre is harnessed to the brain by a nerve filament, along which the power to act is transmitted. Education from one point of view is learning how properly to send power along these nerves; for on the relative strength and coordination of these nerve currents depends all the difference between the artist and the clod hopper.

This fact brings us naturally to a consideration of muscle training and the part it has played in history.

Naturally in the upward evolution of the race, muscle-prowess would attract attention before mind-prowess. The early heroes of every people have been men capable of doing wonders in physical strength. The same laws hold during childhood and youth. Strength, swiftness and muscular dexterity always win applause in youthful circles, especially if physical courage or "game" qualities be associated therewith. This characteristic remains true throughout life, wherever the energies are not unduly drawn to the mind.

The history of ancient Greece, however, shows that the greatest physical development can co-exist with the greatest mind development. The people of today can scarcely conceive the state of perfection reached in symmetrical muscular development in that early age of the world. If a collection of the best trained athletes could be made from all over the world, we should hardly approach the perfection of physical manhood and womanhood exhibited by the body of the Greek people.

And that such eminence should have been reaped by an entire people, is little to wonder at: for the Greeks ordered their entire lives, from the begetting of children to the last act of homage and devotion, with a view to physical perfection. The olympic games, which occurred every four years, were of such natural moment, that every other activity, even war itself, was suspended that the people might attend them. So vast and varied were these displays of physical manhood, that if all the boat races, horse races, foot races, bicycle races, sparing matches, foot ball matches, and other athletic exhibitions that take place during any season, were combined, with all their spectators, into one vast tournament representing the muscular prowess of modern times, it would not begin to compare in size, enthusiasm or actual physical results, with the regular meetings of the Greek people to celebrate the national games.

So highly prized was the simple laurel with which the victors were crowned, that walls were often torn down that a youth bringing such honors to his native city might enter unmolested, and his name became the theme of poetry and the burden of song.

Physical education was maintained

at a high plane in Rome, owing to the exigencies of war; also during the middle ages, owing to knight-errantry, which involved the joust and tournament; but when gunpowder was invented, a soldier's value came to depend less and less upon his muscular power and dexterity, and so physical training fell into disuse.

As a result of the effeminacy which came to the race, in consequence, Germany fell an easy victim to the Napoleonic wars, but it took the Germans a long time to realize the cause of their weakness. It was first pointed out by Father Jahn, who by the aid of the government established Turner-bunde or Turner-platze for the physical development of the nation's youth. His theories as to the effect of such training in re-enforcing martial valor were realized most gloriously for the fatherland when the French were routed and driven again beyond the Rhine.

Since the days of Father Jahn, physical education has been largely reduced to a scientific basis. Of its results as to health and power, all are now agreed. But there is still much diversity as to the best methods of attaining such results. The German school of gymnasts follow the lines laid down by Jahn. The Swedish follow a system devised by Prof. Ling. The French have their Delsarte, while America, if it has any system at all, may be said to follow the eclectic system of Dr. Sargent. The latter has this distinguishing characteristic: It does not seek to develop any series of muscles inordinately, but aims to equalize and harmonize the whole; to which end, exercise are chosen to fit the condition of each individual as determined by careful measurements and medical diagnosis.

For all-round physical education, it would be hard to find a better school than the old-time New England farm. And perhaps the duties of an agricultural vocation are, all things considered, the safest and truest means or national motor education today. Without the vigor of body there acquired, the race would soon deteriorate, whatever be its artificial systems. In a New England museum devoted to farm relics are products which show that our fathers and our mothers were skilled in the muscle-craft, belonging to eighty-two distinct industries. What system of physical culture can show such variety of development as this?

The muscles of the body are divisible into two distinct classes, viz: the fundamental and the accessory. The fundamental are first developed, and as their name indicates, are the muscles on which all great movements depend. The accessory, on which depend all the finer and more delicate adjustments of the body do not fairly begin their growth before the eighth year, and in many people they are partially wanting.

These last are facts which every teacher should bear in mind, for on them depends a most important pedagogical principle. It is by means of the accessory muscles that variety and intricacy of voice, finger, or other manipulation become possible. To keep a child at exercises requiring fine discrimination, at an age when these muscles are undeveloped, is therefore little short of cruelty, and must reach disastrously upon his nervous system. The most common instances of the violation of this principle, is in setting very young pupils to writing. The lolling of the tongue, the grimaces, and the nervous twitching of the body during this exercise, should all be regarded as danger signals, which if not heeded are likely to end in chorea or St. Vitus dance.

The accessory muscles have well been called the muscles of thought, since it is upon these almost entirely that mind depends for expression. So

delicately poised are they that they respond instantly to every change of thought or emotion. By practice they may perhaps be repressed to a degree but if left to themselves they make the face and form a canvas on which our innermost souls are portrayed to the eye that has learned to read the soul's language.

Nor need this language be known to the consciousness of him who expressed it. The planchette is a little instrument which gives easy play to automatic muscle communication, and with it thoughts and ideas not in consciousness are committed to writing. A common form of the experiment is to place the hand on a pane of glass fitted with a pencil, and made to roll freely over the sheet of paper by means of three marbles.

As before intimated, weakness or disease of the accessory muscles results in chorea or St. Vitus dance. It is essential to the health of these muscles that they be perfectly free to express any form of thought or emotion to which the mind is subject. Repression retards their development and leaves them weak and subject to disease.

The question of college athletics is directly to the point in a consideration of motor education. In general, it may be said that whatever builds up the physical system, tends to absorb energies which, if not turned to mind, generally go to fertilize vice and corruption. College sports must therefore be placed on the side of morality. They also serve as a direct benefit in re-enforcing mind-power, and in developing manliness and self-control.

Boxing, for instance, is one of the surest cures for sudden anger; the contestant who fails to take his punishment in good grace, i.e., loses his temper, meets swift retribution for his want of self-control. These sports are often unnecessarily rough, not to say brutal. But on the whole, it is better to lose a good man occasionally in foot ball than to have eleven young men spoiled by effeminacy, or debauchery.

The new direction of motor education is along channels which, while they furnish exercises sufficient for growth, train the muscles at the same time to useful handicrafts. This thought has led to manual training schools, concerning which a few thoughts may not be amiss.

In kindergartens and primary schools the aim should be to make toys, for this is the line of most active interest. There is a veritable mine of pedagogic truth yet to be developed in this direction. Russia has considered toys of so far-reaching an influence in education, that she has held two toy congresses, the purpose of which was reform and further development.

In the higher departments many schools have found it a valuable stimulus to have students construct the apparatus needed to illustrate the subjects of science under consideration in their classes. Of course in all grades children should be permitted to keep what they make.

The general purpose underlying all physical training should be to increase the complexity and speed of the muscles. First, children should be taught to do as many things as possible. The old German idea was for the student to travel—become a journeyman—and learn, now from this master, then from that, all the trades useful to man. The ideal would be to have a student skilful in all methods of manipulation and master of one method.

Second, he should be taught to do what he does with accuracy and speed. For every student that becomes skilful to a degree of success in telegraphy, typewriting, phonography, music and similar branches, ten almost reach it but not quite; lacking