

PHYSICAL EDUCATION IN THE PUBLIC SCHOOLS.

On the opening day of this week's session of the Utah State Teachers' convention, Dr. E. G. Gowans of the state university, delivered a lecture before the Parents' section which was listened to with marked attention by the pedagogues, and pronounced by them as an address of uncommon interest and usefulness. On that account it is reproduced in the Saturday News in its entirety:

The place of physical education in the public school curriculum.

Perhaps nothing will so much hasten the time when body and mind will both be adequately cared for as a diffusion of the belief that the preservation of health is a duty. Few seem conscious that there is such a thing as physical health. Men's habitual words and acts imply the idea that they are at liberty to treat their bodies as they please.

Though the evil consequences enforced on their descendants, and on future generations are often as great as those caused by crime; yet they do not think themselves in any degree criminal. The fact is that all breaches of the laws of health are physical sins. Where this is generally seen, then and perhaps not till then will the physical training of the young receive all the attention it deserves.

The above quotation is the greater part of the concluding paragraph of Spencer's essay on Physical Education, and I shall be very happy if I can in some small measure contribute toward the hastening of the time "when body and mind" as he expresses it, "will both be adequately cared for."

The high pressure to which we are subjected in the competition of modern life makes it highly necessary that in addition to a mental fitness for the fight there should also be physical fitness.

Thousands of school children in our country break down every year. Higher and higher climbs the mortality rate

from nervous diseases. More and more is nervous strain and lack of proper physical activity diminishing the vitality of the race, and it is time that we recognize, as Spencer says, "that the first requisite to success in life is to be a good animal," and "that the benefits which our sheep and oxen have for years past derived from the investigations of the laboratory should be participated in by our children."

MIND AND BODY INSEPARABLE.

Without calling in question the great importance of horse-training and pig-feeding, we would suggest that, as the rearing of well grown men and women is also of some moment, the conclusions indicated by theory, and endorsed by practice, ought to be acted upon in the last case as in the first.

Further, the relationship of physical education to mental development is a matter not to be lost sight of in considering the problem before us. Activity is the primary condition of growth and development.

NERVES AFFECT THE BRAIN.

The reaction of motor training upon cerebral development is a well understood thing. The doctrine is about this: Any action tends to make the nerve tract act in the same way with greater ease, and by repeating the act the motor response becomes a habit. Thus the whole nervous system is molded, and the character formed. Just how these changes take place we do not know, since we cannot look in upon the developing brain, but we do know that as activity is the primary condition of development of a muscle cell or a gland cell, so it is the primary condition of development of a nerve cell, and we can infer that as a result of motor activity the motor cells of the brain increase in numbers or in size and function or throw out association fibers, which establish a more perfect connection between motor and sensory areas. Every sensation tends to immediate action and every action brings up a memory of the corresponding sensation.

There will be both motor and sensory defects in the brain if proper association fibers are not developed by the right kind of training.

HABITS DEPEND ON TRAINING.

"The most far reaching results of motor training is the acquisition of correct habits. The proper association of action and sensation. The development in the child of sensations which always eventuate in action and are never divorced therefrom. The development and accumulation of ideas associated with action produces the builder of air castles—the dreamer; while under proper training the motor response to a moral idea or a sensation will be definite, accurate and right."

Dr. Donaldson of Chicago university says: "Education consists in modifications of the central nervous system."

And Mercier says, "The physiological function of the nervous system is to adjust the processes that occur in the organism to one another; but the psychological function is to adjust the processes that occur within the organism to the conditions that exist outside of it. Briefly, the study of the psychological functions of the nervous system is the study of conduct." The science of menology has a more direct bearing upon educational theory and practice than all the other medical sciences combined. And this is my apology if you will permit me to be personal, for practicing medicine as a specialist on the nervous system to make a living, while my greater interest is in the educational application of the subject; that people are generally more willing to pay a nerve specialist for curing a disease than a director of physical education for preventing the same thing.

NERVOUSNESS IN CHILDREN.

Dr. Ross, a celebrated English neurologist, has this to say concerning the part which physical training should play in the education of children with tendencies to nervous instability: "The children of parents who manifest a predisposition to some nervous disease, are frequently not merely quick in their perceptive faculties, but are also possessed of great intellectual powers, and much of their future happiness depends upon judicious mental training in youth. The children of such families ought not to be subjected to any severe mental strain during the period of bodily development, or be allowed to enter into competition with other children in the mental gymnastics

which are so fashionable in our public schools. On the other hand, regular graduated and systematic exercises in the form of walking, riding, gymnastics, and calisthenics does a great deal of good by strengthening both the muscular and nervous systems. Everything which tends to develop the muscles of the lower extremities and trunk, and indeed all muscles engaged in executing the movements common to both man and the lower animals tends also to develop the fundamental part of the nervous system, and a good sound development of the fundamental is the first prerequisite to a well balanced development of the accessory portion."

DEVELOPMENT OF NERVES.

The order of development of the nervous system in the race has been from the fundamental to the accessory portions, and no one can reverse this process with impunity in that further development of the individual which constitutes education in its widest sense. Physical education is proper motor training.

It aims in hygienic work at the establishment of organic vigor, the raising of the vitality co-efficient of the individual to the point of greatest possible efficiency; in the corrective work at the correction of physical defects, and in recreation work at brain relaxation and the establishment of vitality. But in all this there must be adaptation, hygienic work, light recreation for the average pupil, correction work for the weak or diseased, and athletic work for the truly vigorous.

PHYSICAL EDUCATION.

What place then should be assigned to physical education in the curriculum of the public schools? In order to answer this question let us first try to ascertain its relative importance. First, not forgetting the old ideal, "a sound mind in a sound body," let us ask what proper physical education may reasonably be expected to do for the child in the public school.

Dr. W. W. Hastings says: "The benefits, muscular and neural, are in the nature of increase in the strength and size of muscles, strength and function of vital organs, neural and muscular co-ordination and control, quick perception, physical judgment and courage."

CHARACTER IS INFLUENCED.

The effect of systematic physical

training upon character is definite and decided. It is productive of clearness of mental vision, coolness of judgment, self control, moral courage, originality and individuality. If physical education did nothing more than to satisfy the vital necessity of the promotion of health, it would be at least equal to any one subject of the curriculum as it now stands but if in addition to this it is capable of doing what Dr. Hastings says it is in what I have just quoted from him you will certainly agree with me in saying that it is superior, far superior, to any one subject of the present curriculum.

Second, Does it possess any disadvantages? No disadvantages to the child, and to school authorities and teachers only the disadvantage of a slightly measured expense and a little more work—of which I will speak later.

If our conclusions are correct then physical education should be considered as much attention from school authorities, teachers, and parents as any other subject at present included in the curriculum of the public schools. That it does not now do so you will all agree.

It is so easy to find fault and so easy to suggest reforms but it is hard, very hard, to carry them out. I am sure you will all be wondering what I have to propose.

PLAN FOR IMPROVEMENT.

In brief I propose that the subject of physical education in the public schools be put upon a scientific basis just as it is in the large universities and colleges.

This means a physical examination of every child including measurements and the examination of eyes, ears, and based upon this the prescription of exercise for the individual which when carried out will secure to him first health and organic vigor; second, bodily control and efficiency; third, erect carriage and symmetrical development.

It has been demonstrated that a really serviceable examination of all the pupils of a school is practicable twice a year, requiring not more than one-half a day at each examination. With one set of instruments and a sufficient number of observers pupils can be examined, not including the eye and ear examinations, at the rate of 60 to 75 per hour and this rate can be maintained for several hours if necessary. "In Lincoln over 300 children

were measured through the use of two sets of instruments, working in separate rooms, within two hours. And in Omaha 10,000 were examined in four weeks with one set of instruments and one corps of observers."

The purpose of this general examination of all the children of a school is to determine the form of exercise necessary and to ascertain the effects of various forms of exercise upon development; but principally to enable the teachers at the beginning of the year to select those who require special attention at the hands of the director. He, at a special examination, is then able to prescribe for those who need special correction gymnastics, and to refer to the family physician the oculist, the neurologist, or the orthopedic surgeon those cases which would be benefited by proper medical treatment—the director himself handling those cases only that can be successfully treated by exercise.

Recognizing, then, the practicability of semi-annual examination and the necessity of adaptation and individualization what agents can be looked to for the carrying out of a propaganda that will place the subject of physical education where it belongs?

In answer to Mrs. Gustin I take the liberty of quoting the following from Dr. W. W. Hastings of Springfield, Mass.: "As soon as practicable each city should be provided with a physical director who shall have charge of the general hygienic work in the city schools, determine the character and quality of work to be given by teachers, and train them where deficient. In the exercise to be given. He should be thoroughly equipped also to exercise the same supervision over all forms of recreation work on the playground, including what is generally known as athletics. He should give special attention to corrective work for the weak and diseased, and examine all cases noted by teachers, make a thorough diagnosis and prescribe exercise where the indications are that it will prove beneficial, and advise the parents where the aid of the family physician is needed. He should personally conduct the semi-annual examination with the aid of competent teachers and medical assistants."

"Special investigations should follow during the year or occur at the semi-annual examinations as soon as skilled assistants can be secured by the director. Examination of eyes and ears,

special cranial measurements of anthropological value, strength tests of the legs, back and respiratory muscles and diagnosis of the heart and lungs are most important among further examinations possible without the removal of clothing."

"In cities where there is no physical training, introduce general calisthenics both free hand and light apparatus work into public school courses for one half hour to one hour each day even if such exercise must take place in the hallways or school rooms; in addition provide playgrounds and supervise the work on them carefully. As soon as the financial backing can be secured, provide a gymnasium with additional wholesome forms of exercise and have all forms of indoor gymnastics only in the room."

"In order to provide carefully trained teachers in physical training throughout the state as demand is made for them, and also to secure a measure of uniformity in methods of training, a two or three year course in physical training should be introduced into the curricula of the state university and the state normal schools."

"Physical education must become an integral part of the whole educational system. University extension should be responsible for the propaganda of physical education throughout a state."

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