

ALLEN (N.)

PHYSICAL
CULTURE

—IN—

Amherst College.

BY NATHAN ALLEN, M. D.



Read at the Tenth Annual Meeting of the American Academy
of Medicine at Pittsburg, Penn., Oct. 12, 1886.



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It is twenty-six years since gymnastic exercises were first introduced into Amherst College, as a distinct department of education. It was an important event, not only in this institution but in the history of educational matters. Certain principles were then discussed and adopted which have had great influence, in making the experiment there a success. These principles are fundamental, and should be kept constantly in view in all attempts to improve physical organization connected with education.

At the annual meeting of the Trustees of Amherst College in 1860, the writer was appointed chairman of a committee to consider and recom-

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mend a plan and regulations for the government of this new department, and, having served every year since on the "gymnasium committee," he is quite familiar with the origin and history of this movement. The questions successfully settled here, will apply to every similar institution. One of the first questions which confronted us in this enterprise, was that the Trustees and Faculty of a College had no right in introducing gymnastic exercises, to make them *compulsory*—that all students must engage in them. It was said that all such exercises elsewhere had always been and were *voluntary*, and not made a necessary part of the curriculum of an institution; that students did not come to college to have their bodies trained but to educate their minds. The answer was, if this education could not be prosecuted so successfully, nor the highest standard reached, without proper exercise of the body and the possession of good health, such exercises should certainly be required.

As the Trustees made the laws of college, and were for the time being, the guardians of the students, they must know better than these pupils or their parents, what kinds of exercise were best adapted for their highest welfare and improvement. Lessons in mathematics and the languages are made compulsory, and if it is found that a certain training of the body enables the student to do this work easier and better, and by the same course he would maintain good health through college, this training of the body should by all means be commanded.

The second question was, in order to make these exercises successful and permanent, we must give them *character*. It was understood that, previously, gymnasiums, manual labor schools, and attempts at physical education generally had failed but there were good reasons for it. One was, the *manner* in which they had been carried on, was not adapted to develop and train the whole body in accordance with physiological laws. Another reason was, that not sufficient importance had been attached to this kind of education, by trustees and managers of institutions, by teachers, by the press and public opinion generally.

The movers in this new department at Amherst determined to organize and start it in a manner to show that they regarded it of the very highest importance—not inferior to any other in college. The first step was to place at its head a thoroughly educated physician, who should be a member of the Faculty—equal in standing to any other teacher or professor in the institution. He should have the whole charge, not only of the gymnasium and its exercises, but he should be a teacher of Anatomy and Physiology, of Hygiene and Physical Culture. Besides, he should have a general oversight of the health of students,—should have a watchful care of them at all hours, and caution them against overwork in study as well as all irregular habits. In case a student was feeling unwell or complained of sickness of any kind, he could freely consult this teacher as though a family physician. Thus by having a living teacher at the head, who is a mem-

ber of the Faculty and has charge of the health of students, it was intended to give this department the same position and prominence as any other branch of study. Still further; in making up the merit-roll of every student of his rank in the class, this branch was to come into the account—his attendance, his deportment, his interest, and the improvement from the exercises as far as it could be ascertained. In case a student had an organic difficulty of the heart or lungs, or any other physical weakness that disabled him from going safely through with all the exercises required, he would be readily excused by the Professor. No one could judge of this so well as a teacher of physiology. At the same time, if a student in other departments of college wanted to get rid of any regular exercise, or get leave of absence, pretending to have some infirmity or to be sick, this medical teacher could easily settle the matter.

KIND OF EXERCISES.

The third question to be settled was to select and arrange a series of exercises—such as would be adapted to produce the best results in a college course of study. The immediate object was to exercise all parts of the body systematically, and in such a variety of ways that the student should maintain uniformly good health, and the whole system—including the brain—be brought into the best possible working condition. Physiology as well as experience teaches that what are called “light gymnastics” are best adapted for this purpose.

In settling the kind of exercise, this depends upon what you want to accomplish. If you want to make expert ball players or boat rowers or train the body to excel in other out-door sports and games, particular muscles or parts of the body must be exercised for this express purpose. But in an institution made up of large numbers, confined in close quarters, all engaged in hard study and wanting to make the most of their time, it is found that light gymnastic exercises, accompanied with music and systematically practiced a half hour or so every day, work best. At the same time, connected with them, other exercises such as marching, running, singing or of a sportive character should be practiced at times for amusement and recreation.

There is still another class demanding special personal attention. Suppose students come to college with a physical system not well balanced—and there are many of this character—some one part or organ weak and liable to disease. This by careful examination can be easily detected. As in a college or any regular course of study, great and continuous strain must be made upon the body, it is highly important that this weak part should be known and strengthened. The highest measure of health is where the whole physical system is well balanced—where all the organs are perfect or nearly so in structure and each performs its own legitimate function. This is the highest or normal standard of health.

Now, by *special* physical exercise much can be done to change and improve distinct parts of the

body in this direction. But it will be seen at once that such special personal exercises cannot be reduced to a system for all indiscriminately to practice. This is individual work and must be a specialty in physical training. At the same time, light gymnastic exercises are calculated to help these personal weaknesses or this defective organization by improving the general health. These two systems of physical culture are each good in their place.

The question may be asked what relation do the regular gymnastic exercises hold to out-door sports and games? We answer as auxiliaries, as helpers, but not as substitutes; the objects are very different. Gymnastics are intended to exercise all the muscles in the body and to improve the general health and strength; while ball playing, boat rowing and other out-door sports call into exercise chiefly particular muscles and movements. Gymnastic exercises are calculated to promote a harmony, a balance of action and strength throughout every part of the body, while these sports increase the size and strength of certain portions of the body disproportionate to other parts.

Each class has its own specific benefits. There can be no question, however, but the interest and zeal in carrying on physical exercises of any one kind, tends to increase it in all others; especially where there is competition. In gymnastics there is less danger of injury to the body, and certainly far less risk to good morals. If these out-door sports are properly conducted—not carried to extremes—

they may prove beneficial to students of all classes, but at the same time there is great danger of their abuse. After all, light gymnastics are altogether the best physical exercises for students in literary institutions. The danger is of carrying out-door sports and games too far, of consuming upon them too much time, of diverting attention from study and creating an unpleasant competition.

TEACHERS OF GYMNASTICS.

What has contributed much to the success of physical culture in Amherst College is the fact that it has had at its head a man admirably fitted for the place—Dr. Edward Hitchcock. In 1860, when this department started, Dr. J. W. Hooker, then a recent graduate of Yale College and also of the Medical School, was placed in charge of it. He had been thoroughly educated in physiology and hygiene, under the instruction of his father, Dr. Worthington Hooker of New Haven, Ct., distinguished as a writer and teacher. Dr. Hooker made a fine start, but near the close of the year his health failed and he resigned and died in a short time afterward.

In the summer of 1861, Dr. Edward Hitchcock, then a teacher in Williston Seminary, and a graduate of the Medical School of Harvard University, was invited to take charge of this enterprise. The remarkable success that has attended his labors and instructions here for twenty-five years afford the best evidence of his peculiar fitness and qualifications, that "the right man is in the right place." When this department started some looked at it as

a doubtful experiment ; others feared it would be an encumbrance upon the institution, but the general verdict now, we believe, is, the college could not well get along without it.

That Amherst College has taken the lead in physical training and instruction, in respect to the laws of health there can be no question ; and that also great benefits have been derived from this course. Before presenting some facts bearing on this point, we give the testimony of an individual who ought to be a competent judge. Says President Eliot of Harvard University : "It is to Amherst College that the colleges of the country are indebted for a demonstration, for the proper mode of organizing the department of physical culture."

It can, we believe, be safely stated that no other large literary institution in this country or in Europe has for a quarter of a century conducted physical education so successfully and so thoroughly as this college. One of the secrets of this success has been, that the department at its very start was placed upon high ground, was treated with an importance and character equal to the classics, or mathematics, and like these its exercises were made obligatory and its results, like these also, entering into the merit-roll of every student. But a stronger argument still, was that the students themselves became from year to year so convinced of the great advantages of these physical exercises in improving their health and perfecting their scholarship, that they would not give them up on any account. While the present rank of scholarship cannot be tested

with what it would have been without these exercises, nor can it be compared with what it once was, before they were introduced, there can be no question but that the present scholarship of students is of a higher grade and character.

HEALTH.

In the matter of health the facts are more obvious. A careful account has been kept every year of the sickness or loss of time from every kind of complaint of the students, and it has been found to be steadily diminishing ; but what is more striking, less and less in each class. The Freshman class have the most ; the Sophomore not so much ; the Junior still less, and the Senior the least of all. Thus year by year each class steadily improves in health, showing the immediate benefits of such exercises. This is the reverse of what occurred thirty, forty and fifty years ago as our experience extends over that period. No statistics of sickness or loss of time from illness were kept at that time, but we distinctly remember many cases of fever and other complaints of students breaking down in health and leaving college. In my own class there were seventy-two entering in 1832, but only thirty-eight graduated in 1836. There were five deaths in our college course and several more died within a few years afterwards. This class may be more marked for its changes than some others, but generally the ranks of every class were more or less reduced by ill-health and death. Now very few students in college leave or give up study on account

of failing health. While we cannot give figures on this point we know there has been a decided improvement.

Another marked feature resulting from physical training, we believe, more than from any other cause is a change in the countenance and physique of students. This applies particularly to students in the advanced classes and to those graduating. Perhaps no one thing affords stronger evidence of good health and a high state of vitality than the human countenance when carefully scanned by an expert sanitarian. Now from an experience of fifty years with the college and in attendance upon many commencements, we can testify that there has been a marked improvement in the countenance and physique of students. Formerly there were more or less students with pale, sallow countenances, sometimes too spare, with a haggard, care-worn look, and without much expression; but such a specimen is now seldom seen; their countenances indicate a freshness and glow of health, with a clear skin and lineaments distinct and expressive, animated with highly-arterialized blood.

The body is better and more evenly developed in all its parts, and when moving or standing, its position is erect. The limbs perform good service, with movements easy and graceful, but at the same time prompt and vigorous. The whole appearance of students, with the changes of countenances and movements of the limbs, indicate a high state of physical health, vigor and strength.

There is still another advantage gained, the value of which cannot be estimated in figures nor fully described in language. By means of gymnastics and instruction in hygiene the constitution of the student has been greatly strengthened, and regular habits have been formed favorable to good health, not merely while in college but that will last through life. The student has thus laid the foundation for good health in all his future years. At the same time he has accumulated an amount of knowledge in respect to the laws of health which will become more and more valuable.

President Eliot of Harvard University says: "The more I see of the future of young men who go out from these walls, the more it is brought home to me that professional success, and success in all the learned callings depends largely upon the *vigor of body*, and that the men who win great distinction have that as the basis of their success." This testimony, we believe, can be substantiated by a multitude of witnesses. How important, then, that every young man in passing through college should preserve his vigor of body, yes, strengthen his whole system and learn to take the best possible care of it!

By means of the experience and knowledge these students obtain in respect to the laws of health, while in college they become afterwards *teachers of sanitary science*. From the great advantages which they have derived from it, they will be disposed by precept and example to extend its benefits to others coming under their influence. Thus a powerful

agency is introduced for diffusing valuable information in the community as to the preservation of health and prevention of disease. In this way an immense amount of good will be accomplished.

There are still other advantages from this gymnastic training. It is an essential aid in securing better discipline in the institution. These exercises serve to give a safe vent to an excess of animal spirits which otherwise might result in acts of mischief or trouble of some kind. This physical training is calculated to develop not only all parts of the body, but to make it symmetrical and well balanced throughout. Such an organization tends to give its possessor self-reliance, self-control by means of which he can turn to better account the activities of both the body and the mind.

We have stated that light gymnastics afford the best kind of exercise for students; they harmonize with the laws which regulate the growth and changes in the various organs of the body; they are convenient for use, and economize time; they can be directed and controlled better than out-door sports and games: in fact, the great objection against inter-collegiate sports and games is they cannot be controlled or regulated by any one united power, there is constant friction and complaint, and not unfrequently ill-feeling and bad temper.

EXAMPLE AND INFLUENCE OF PHYSICAL CULTURE AT AMHERST.

There is another point that deserves notice—the example in starting physical culture at Amherst

and its influence. In the history of education the time had probably come for some such development. At this period—about the middle of this century—the times had brought upon the stage men who had had much experience in educational affairs and were disposed to take a more practical view of the subject. Among these was the Rev. Wm. A. Stearns, D. D., who became President of Amherst College in 1854. He had resided many years in Cambridge and was for a long time a member of the State Board of Education. In his new field of labor, at the head of a large institution composed of young men, his attention was arrested by the failing health of many students, as well as the early death of several. With great earnestness he brought the subject before the Trustees and inquired if something could not be done for the physical education of students. This appeal produced at once a strong impression on the Board of Trustees. The writer having for years made a special study of physiology in its application to education and health, and fully appreciating the importance of good health to students in college, was prepared to second President Stearns's appeal and to enter heartily into the work.

This department at Amherst was fortunate in its organization at the start. It soon became popular with the students and enlisted favorable notices from the press. Being something new, it attracted the attention of the public and especially those at the head of educational institutions. Within twenty-five years the interest has greatly increased in

the study of physiology and its application to physical improvement connected with education and health. The managers of most of our colleges and seminaries have been waking up more and more to the importance of the subject. Some institutions have already built large gymnasiums and others are taking steps in that direction.

It is reported on good authority that over fifty large institutions in our country have either adopted some regular system of physical culture or are making preparations for the same. So intimately connected is a proper care and development of the body with mental and moral improvement, that this reform cannot go backward or remain stationary. The more thoroughly the interdependent relations between the mind and the body are understood, the greater will be the value attached to a sound, healthy and well trained body.

In this sketch of physical culture at Amherst some notice should be taken of the superior advantages there for carrying on this work. The first gymnasium, erected in 1860, became too small and inconvenient as the classes grew larger. As a result of the deep interest felt in this department by one of its own students—a graduate in the class of 1879—Mr. C. M. Pratt of Brooklyn, N. Y., the college is chiefly indebted for its new, magnificent building, called “Pratt Gymnasium.” It was planned by Dr. Edward Hitchcock after many years experience as to what provisions were necessary in such an establishment, not only for conducting every variety of physical exercise but for securing

at the same time the comfort, improvement and health of the students. While the building has a large main hall for general exercises, it has numerous other rooms of different sizes, most conveniently constructed, located and arranged for all needful purposes. It has provisions for every kind of bath, with abundance of water, cold and warm. From a careful inspection of the apparatus, equipments, conveniences, &c., it would seem that everything was here provided that is possible for the highest welfare of the students.

In closing this paper some account should be given of the measurements of students. We cannot here go into details, but only make a general statement. Upon the admission of every new class to college, each student submits to some sixty different measurements of his body and its parts, such as weight, height, lung capacity, girth of chest, arm, &c., &c., and an exact record of all these measurements are kept. These examinations are repeated every year, and since they commenced, about twenty-five hundred different students have been thus measured. In a report just published by Dr. Hitchcock of twenty-five years' experience in gymnastics, there are twelve tables containing the summing up or results of these measurements. They show an immense work—that thousands and thousands of figures have been employed to obtain these results. As an illustration, one table alone contains over 600,000 figures.

While these measurements have a present value to every student and to the cause generally, in the

course of time they become invaluable in aiding to settle some problems in vital statistics connected with physiology, biology and anthropology. The statistics thus gathered will bear fruit through successive generations.

