PHYSIOLOGICAL

AND

INDUSTRIAL EDUCATION

APPLIED TO THE FEEBLE-MINDED.

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PHYSIOLOGICAL AND INDUSTRIAL EDUCATION

AS

APPLIED TO THE FEEBLEMINDED.

WE readily concede that our work is (1) educational, (2) charitable, and (3) economic. As an educational institution, it is both (1) philosophical and *(2)* utilitarian. Philosophically considered, it must have fur its object the symmetrical development of the whole individual as *such,* while, from a utilitarian stand-point, it should aim to render its pupils capable of self-support.

Every educational system is imperfect which seeks to do less than develop men and women and make the most of human possibilities. We read of the Spartan ambition which sought chiefly physical development or power of physical endurance, and esteemed that only of great value that it might he of service to the state. The Athenians were worshippers at the shrine of intellectual greatness. In later times the spiritual nature was cultivated at the expense of the body. Conditions of comfort and even health were studiously ignored, while suffering was regarded as particularly essential to an ideal character. We have our extremists to-day, but the greater tendency is rather to extremes in individual power, or to specialties based upon inherited or acquired fitness, generally the outgrowth of a broad development which is not by any means inconsistent with our ideal education.

If we are not mistaken, the tendency to develop broadly and in all directions is characteristic of our age. But the great lesson that has been taught, and which is being appreciated more and more., is that mental development begins with and depends upon purely physiological processes. In other words, the principles of physiological education—the very principles that were largely deduced and applied by the fathers

of our own profession—are being better recognized and applied by advanced educators everywhere. We desire to observe briefly the *nature* of physiological education and the relation which industrial education bears to it in general, and in the system of improving the feeble-minded in particular. Our professional fathers did not, and much less do we, presume either to know anything of the ultimate nature of mind, or to determine accurately the relation of mind to body, but we can unhesitatingly assert that, so far as human experience and observation can be employed for verification, normal intellectual activities exist only in connection with normal physiological conditions of tissue and tissue functions. Whatever the nature of mind, it comes into the world as a group of possibilities only, which for their development must come in contact with the world,—with material things and forces from which they are separated by tissues capable or incapable of establishing such contact. These contacts, if the conditions are normal, lead to sensations which, when recognized, are perceptions. These experiences, multiplied, lead to comparisons, ideas, generalizations, knowledge. This, in brief, is the whole process of education, but how much it means! Under normal conditions there is a spontaneity that keeps the whole machinery of development in operation. The mind is incessantly communicating with the external world, and the result is an incessant stimulation to further communication and acquisition. Upon the condition of the media of communication must depend the accuracy of the sensation, and hence of perception, and upon the same must depend the precision of execution. Again, there are many media of communication, the exercise of which in succession or in correlation renders perceptions more perfect or more accurate, and we assume that the conditions of development are normal only when all of these media are normal. It is true, great intellectual achievements may characterize minds that dwell in deformed or defective bodies. Nature has wisely ordained a law of compensation whereby one sense may perform quite well the functions of several others, as was illustrated in Laura Bridgeman's case, and is being illustrated even more strikingly in the case of Helen Keller. But who can assert that such persons would not have displayed mental powers proportionately greater than they have, if the physiological conditions had been normal, provided the same efforts for improvement had been made? On the other hand, the growth of mind, without physical means of communication between itself and the world of matter and forces external to it, is beyond the power of human conception.

Passing beyond the stage of development proper, experience and observation testify that functional mental powers fluctuate with the conditions of health or environment. The operations of sensation, attention, perception, judgment, memory, and will are common exemplifications of this fact. Finally, what do we *know* of mind, or even of its existence, except as manifested through the body?

We know that defective physical organization alone may characterize idiocy, and we have been taught to designate it as *superficial,* in recognition of this fact. Are we prepared to say that profound idiocy is any less a condition of tissue lesion, though more centrally located and beyond the ken of optical research? Seguin says, " It [idiocy] is never a mental anomaly alone,—that is to say, isolated from other functional anomalies, as insanity is" (or was then considered to be).

Recognizing, then, the intimate relation between mind and body, between psychic phenomena and tissue phenomena, and keeping clearly before us the natural steps in the process of mental development,—viz., (1) sensation or contact, (2) perception, (3) comparison, (4) notion or idea, (5) judgment, (6) knowledge and volition, the ladder which leads from the darkness of infancy to the light of intellectual greatness, the steps involved in the evolution of mind from its first simple, uncomprehended contact with material objects in its proximity to its lofty flights through the regions of philosophic speculation, or the more exact calculations of sidereal mathematics,—we are prepared to understand better the meaning of physiological education. It is simply, as Seguin says, a process of " educating the mind through the perceptions instead of by prearranged reasonings." *

It has been the fallacy of educational processes that they consisted chiefly in the transfer of ideas from mind to mind directly. Now the notion which any mind forms of another's ideas must depend entirely upon its own experiences.

As Seguin further says, "When we speak to the reason of a child with our reason, he understands us more or less correctly or not, always in his own manner, . . . and whose thoroughness will be shown in his after-life, but still his mind and ours have communicated through ideas." The key to the situation is this statement, *every one understands or knows in his own way.* You employ the word river to two persons, and the ideas suggested in their respective minds will be as various as the conditions under which they have respectively perceived a river or rivers. The mental pictures will vary from the quiet meadow stream, scarcely attaining the dignity that its name should imply, to the rushing torrents of Niagara. So in regard to everything pertaining to mental phenomena.

" New Facts and Remarks," p. 40. Ibid.

All ideas are but variations in mental pictures made up of percepts. How necessary to Correctness of ideas is, then, accuracy of perception !

In the application of physiological education to the treatment of idiots we must start at the very foundation. Ideas are not yet formed. Perceptions are imperfect, and even sensations may be weak or perverted. That spontaneity which seeks to bring the normal mind of infancy into contact with the external world, and to maintain the communication, is wanting or inoperative perchance from slight obstruction, if we may use the phrase, along the way. This spontaneity must be supplemented by the will of the teacher. The communication must be established by another force and maintained till the way becomes smoother.

The methods to;be employed in establishing this intercommunication afford a limitless field for the teacher's ingenuity. The numerous cases reported by our honored predecessors, and the every-day experience of the teachers in our schools for feeble-minded, afford abundant examples of some of the ways in which the " known" is ascertained, and the pupil is gradually but surely led along in the direction of the unknown.

So much for what we may term the acquisition ; but this is not all of education. Along with this process must be that of expression-. The two are indissolubly combined,—really different features of the same process,—mutually related, and reciprocally dependent.

Ideas are of no value unless they can be expressed. They are expressed by language, which, in the broad application of the term, may assume innumerable forms. Every voluntary look and movement is a language and gives expression to some mental process.

The idiot that [moves the colored peg from its position among others and places it where it should go in the board expresses an idea, however simple. Paintings and statuary are expressions of the artist's mental pictures. The almost infinite number of machines that are represented in the store-rooms of the Patent Office are the expressions of ideas in the minds of their respective inventors.

A step in advance was taken, in educational matters, when teachers were instructed to train the senses. Object lessons were introduced, and the pupils were required to observe and form their own ideas. As a necessary part of the exercise, however, they were required to *describe* what had been observed, that their ideas could be tested as to the accuracy of their observations, the correctness of their perceptions, and the truth of their knowledge.

Up to. this point in educational history one medium of expression which could be made especially useful had been too much overlooked,—viz., the hand.

Again we quote our honored teacher: " The hand is the best servant of man : the best instrument of work ; the best translator of thoughts. The most skilful hand is yet, in respect to certain realizations, as it were, idiotic; our own hand shrivels before we suspect the thousand ideas which it might realize." * " In the case of our special training, its incapacity puts a barrier between the idiot and everything to be acquired." The occupations of the kindergarden, clay modelling, etc., represent the forms of hand training which were adopted by Froebel and others as suited to early childhood.

The growth of the manual-training idea has arisen from the recognition of the possibilities of the hand as a means of expression and the important influence which its training can exert as a factor of education. We believe manual training is deserving of the attention it is receiving, both as a feature of true physiological education (which must ever keep in view the symmetrical development of all of man's power) and as a proper foundation for usefulness and independence. Just how far the labors and teachings of the organizers of our work have contributed to development of manual training, as applied to the common schools, I cannot say; but that beautiful contribution to the literature of these meetings, " The Training of an Idiotic Hand," has been quoted from by a talented advocate of this system, who then says of it, " There could be no more positive proof of the effect of manual training upon the brain, and so upon all the activities of the body." The experiences of our teachers in the schools for feeble-minded are continually confirming the value of hand training. Would that our institutions might report more of these experiences.

Now, a word on the application of manual training to industrial pursuits in **our** institutions, and I am done.

Physical, industrial, technical, and even manual training do not in themselves imply the whole of physiological education, but each, involving some of its principles, is cultivated for specific ends, either as contributing to education in general or to afford a source of revenue. In our institutions a large amount of paid service must be rendered to our children. We must make their true comfort and happiness of supreme importance. We must employ the best talent and energy we can secure for the means at our disposal. True philanthropy and Christian sentiment rightly demand this. As a result we shall thus fulfil the primary duty which society expects, and we may hope to contribute something

* "Seguin on Idiocy," p. 116. Ibid., p. 110.
"A Plea for the Training of the Hand," by D. C. Gilman, L.L.D., p. 6.

from time to time to the science of education as well as to the science of medicine. But with all this our pupils must be taught to contribute their assistance. We have authority for saying, " As soon as an idiot begins to prehend and to handle, he must be made to work; . . . the simplest work, the easiest and lightest thing done steadily by repetition or imitation, is better than nothing; the girl who begins to wipe dishes, the boy who picks up stones in the field, are above all helping to save themselves from the h6rrors of idiocy."* " The necessity of working with the hands is urged even upon higher grounds than mere physical or intellectual advantages. Even things being otherwise equal (but things are far from being so, most of the time), the working-man is, as such, superior to the idle one; idiots, in particular, are soon morally improved by working. Work every day is prescribed according to their ability here once for all, no matter if its products be desultory."

These words, the author of which is undoubtedly recognized by you, though written years ago, are just as true to-day. It is a gratifying fact with which we can now supplement this advice, that the results are not always desultory, as the accomplishments of each of the institutions under your care, respectively, can testify.

The capacity which a large proportion of our pupils readily manifest, under training, for mechanical and constructive industries, warrants the belief that the day is not far distant when the constructive industries in our institutions, supplemented by those upon the farm, will be a source of sufficient revenue to affect materially the cost of supporting them. With most of our pupils the power of discrimination—the judgment—will never be sufficiently developed to enable them to fight their own battles with the world outside. These poor in ability we will always have with us, and they will cheerfully do what they can, for such doing is in the line of their greatest happiness as well as greatest usefulness.

* " Seguin on Idiocy," p. 116. Ibid., p. 118.