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ADDRESS

BEFORE THE

Auricular Section of the
Fourteenth Convention

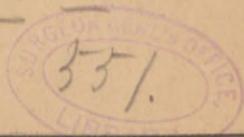
OF

AMERICAN INSTRUCTORS
OF THE DEAF.

BY

PROF. J. C. GORDON, M. A., PH. D.

presented by the author



Mr. Chairman:—It gives me great pleasure to respond to your invitation to speak before the Auricular Section of this Convention, not simply to congratulate Miss McCHEANE, and all of her assistants in this new and special field, upon so satisfactory a demonstration of auricular training and its results in these bright and intelligent, little, deaf-born children who entered your school only one or two years ago; nor, to congratulate you upon the realization of a theory which you have had the courage to put to the test of thorough-going experiment; but to emphasize the fact that in this demonstration there is a lesson for all educators, and especially for those who would advance the education of the deaf and dumb.

The lesson is this: That education should begin and proceed along psycho-physiological lines upon demonstrable laws of *brain-building* and *correlated mind-building*. I need hardly say that the dominant systems and practice have not been constructed upon this basis of biological science, nor need I stop to deplore the results, everywhere apparent, of misdirected energies.

Even PESTALOZZI, FROEBEL and the so-called HERBARTIANS, the forerunners of progress, have been more successful in exploding old theories than in working out a perfect system themselves. But the new education for which they labored is coming to the front, an education which will give a progressive training to all the senses, giving the pupil full command of whatever capital he has, and, by the harmonious development of his powers, placing him in intelligent control of all his forces and of all his mental acquisitions, so that the pupil thus trained will and must think to some purpose, as well as merely know. This outcome of proper sense-training, ever keeping in view mental assimilation, and the right correlation of facts, rather than the mere receptivity of them, is the pupil's greatest need, and to meet this need is the aim of the new education.

We are concerned just now only with the first steps after the child leaves the mother's knee: the sub-primary, and primary stages of mind-building, through brain-building, by the appropriate stimulation of the nervous organization through the constant and progressive training of all the senses. The zealous teacher needs, perhaps, to be warned against the temptation to over-train one sense, usually the sense which least needs it, to the neglect of others.

The more rudimentary or fragmentary the sense may be, the more important, of course, is the development of that particular sense; for no sense can perform a function foreign to its nature, or act as substitute for another in its peculiar field.

The senses should be exercised systematically for many months, if not years, and this training should include at least five phases: (1) in taking clear mental images; (2) in reproducing these images; (3) in rendering each sense more accurate; (4) in extending its range; (5) in establishing clearly defined correlations between the senses. I have sought in vain for any practical hand-book amplifying these suggestions for the use of educators, or illustrating them by appropriate and sufficient exercises.

You may recall the pioneer work in this line by the late DR. E. SEGUIN. Full of scientific ardor, he subjected one feeble-minded child to a series of experiments in the use of the eyes alone, and another, to a like series in the use of the hands alone, finally bringing both children to a remarkable degree of mental development. He thus laid the foundation for the system of educating feeble-minded children now practiced throughout the world. In this work DR. SEGUIN anticipated recent anatomical and physiological discoveries of cerebral structure and growth as related to mental functions. And all who deal with backward children, deaf or otherwise, may find it advantageous to study the system developed from DR. SEGUIN'S experiments.

We may, and do fall short in the development and wise application of sound pedagogic theories to practice in the education of deaf and dumb children, but whatever our failures in this respect may be, Auricular and Oral methods especially

commend themselves to men of science familiar with the present state of knowledge concerning brain-structure and brain-function in correlation with the mind. It has been demonstrated that the application of these methods has a tendency to nourish and stimulate the healthy growth of the same parts of the brain-structure which are the most completely developed in normal brains. In proof, I need refer only to the growing scientific literature bearing upon these facts and especially to the results of twenty years, or more, of experimental, anatomical and other researches of DR. ELMER GATES, whose addresses before the Philosophical Society of Washington, and before the public, under the auspices of scientific bodies, have attracted great attention. His unpublished manuscripts which have been read by a number of persons contain a mass of facts of special significance in this connection.

Any one curious to know something more of the patient labors and vast mass of accumulated facts having a bearing upon these points in their pedagogical and bio-physiological relations should study the recent address delivered by DR. PAUL FLECHSIG upon his inauguration as Rector of the University of Leipzig.*

For our purpose it is enough to say that FLECHSIG has observed the order and extent of the anatomical development of nerve-paths from the surface of the body to separate centres in the cerebral cortex. These centres after establishing a network of mutual correlating paths, send out other fibers to higher "centres of association" which in turn become connected by innumerable nerve-fibers in the medullary matter of the brain. About one-third of the cortex, according to FLECHSIG, is occupied with the sense-centres and their network of connecting and conducting fibers, while two-thirds of the cortex is occupied by four sections with a complex network including the higher centres not directly concerned with either sensorial impressions or motor impulses. It is this higher system,

*Gehirn und Seele: Reden des antretenden Rectors, Leipzig. Dr. Paul Flechsig, 31st Oct. 1894. Druck von Alexander Edelmann.

especially, which differentiates the brain of man from that of the lower animals.

These centres of interpretation and “co-agitation” whose functions are parallel with, if not inseparable from our thought processes, so far as explored, are most intimately associated with mental growth and mental experiences.

We have reason to believe that every mental experience contributes definitely to some part of the brain-growth, and, *vice versa*, the injury or stunting of these areas of the brain tend to impair mental functions.

DR. FLECHSIG's researches show that morbid irritation of these areas leads to confusion of thought, and hallucination, and their obliteration causes the loss of language, principles of conduct, and the power to profit by experience, or to foresee the consequence of one's actions. The lack of appropriate stimulation tends to impoverishment, non-development and atrophy of cerebral structure.

We know that in deaf children, training in speech, lip-reading and hearing do not imply, necessarily, a highly cultivated and well-informed mind, but they do contribute to that cerebral health and cerebral development which renders possible that training, moral, mental, and physical, which most closely approximates the normal standards in its results.

Much of the work of the articulation teacher and the auricular teacher is preliminary to what the world calls instruction, and yet it is invaluable to the proper nourishment of cerebral structure, and fundamental to symmetrical individual development.

Speech, as an individual possession and symbol or vehicle of thought, is far from the simple thing some take it to be, but, contrary to the popular belief, sound, strictly speaking, is not one of its elements. Sound and tone have a significance all their own, whether associated with words or not. The peculiar significance of sound and tone is lost for the absolutely deaf, and for this loss, nature and art can render no substitutionary compensation in any proper, scientific sense. *But, fortunately, sound and tone, though accompaniments of speech, are merely incidental products, not essential to it, and forming*

no part of it. They are, in fact, only aerial vibrations resulting from it, the thunder, which follows the lightning's flash.

The memory and recognition of spoken words involve, chiefly, the power to recall and to exercise dynamic, muscular adjustments with the associated nerve-activities. The persistent impress of these features duly transmitted to the centres of speech, renders the spoken word in all its principal and essential features, precisely the same thing to the orally-educated deaf as to persons with normal hearing.

Sound has a value as an adjunct to speech, though not a component part of it, to us who hear, because it comes so closely in touch with the speech-centre that it enables us to recall with ease the nerve-action and muscular adjustments involved in producing spoken words.

In the case of the orally-taught deaf, any optical sign or image of the same muscular adjustments serves to pull the same trigger with the same effect.

Speech, as a cerebral and mental function in the deaf, differs in no respect in its essence, composition and consequent efficiency from the same function in those who hear.

Yet, because sound and tone have a value all their own, and because the nourishment of any sense has a beneficial effect even upon the cerebral structure of the interlacing fibers related to other functions, no reasonable effort should be spared in developing the hearing where traces of it are discoverable.

It is asserted upon scientific authority that many persons are deaf from a deficiency in brain-structure or brain-development rather than from a lack of aural structure; and it is a demonstrated fact that in certain cases new hearing capacities have been developed where they did not previously exist.

The bearing of all these facts upon educational ideals and practice it would be rash to even try to state; but in sub-primary work there is surely an interesting field for the constructive talent of intelligent teachers to create a system of mind-building and brain-building, complete in its details, and capable of progressive expansion to meet the real needs of instruction at every point and in every stage of the child's mental progress.

