SPEECH AS A FACTOR IN THE DIAGNOSIS AND PROGNOSIS OF BACKWARDNESS IN CHILDREN.*

G. HUDSON MAKUEN, M.D.
PHILADELPHIA.

The subject under discussion is one of more than usual importance. It is said that there are, in Philadelphia alone, more than twelve hundred school-children who are unable to keep up with their classes and for whom no adequate provision has been made. This large number does not include the high-grade imbeciles and idiots who never get into the schools, but only those who are said to be "backward in their studies."

Scientific discussions often fail to be of value because of a lack of a definite and uniform nomenclature and therefore it may be well to come to some understanding as to exactly what we mean by the term "backwardness in children." No two children are of exactly the same grade, mentally, but they differ in this respect as they differ in respect to physical characteristics. The backward child, according to the common acceptance of the term, is one who is below the average intelligence of children of the same age; and for our present purposes, this is probably the best definition; but a more scientific one would make the term "backward child" mean one who is not living up to his own possibilities or capabilities. This definition, however, is in advance of the times and it will be applicable only when children receive more individual study and training and when they are not herded together like sheep, regardless of their peculiar characteristics and needs. Moreover, it will be observed that backwardness, in this paper, will be regarded as a disease. This is for the sake of convenience and not because it is in all respects deserving of so much distinction.

The diagnosis of backwardness is not difficult. All children who do not, can not or will not keep up with their classes must be regarded as backward, according to our definition, and they should have our most careful consideration.

The prognosis in these cases is not so simple, for this involves an inquiry into the causes, and some experience in the various methods of special training. We must take into consideration the inherent possibilities of each individual child and determine what his mental capacity and capabilities would be in a suitable environment and under more favorable conditions.

The object of this paper is to consider to what extent a study of the speech of children will aid us in making the diagnosis of backwardness and, more especially, in venturing on a prognosis. It may be said, without fear of contradiction, that freedom of speech is an absolute essential to the normal development of children and that any defect of speech, however slight, must make its impress on the child's mentality and prevent him from doing all that he would otherwise be capable of doing.

Not all children with defective speech, however, are thus prevented from keeping abreast of their fellows in school. Occasionally we find one with sufficient concentration and will-power to succeed, in spite of the handicap which defective speech must entail, but this is the exception and not the rule.

Speech is a tool of the mind and just as the artisan

is dependent on good tools for success in his work, so is the child dependent on good speech for the normal development of his mental faculties; and just as a poor tool may be responsible for faulty work, so is defective speech oftentimes the cause of slow development or backwardness in children. Many illustrations of this fact might be given. One or two will be sufficient to emphasize its importance.

In 1895, a young man, 19 years of age, was brought to my office for a prognosis, the diagnosis made by his family physician being imbecility. He had many symptoms of this disease. He was backward in his studies, so much so that school had to be entirely given up. He could not speak, read or write intelligibly, and he was unable to spell the simplest words. His expression was vacant and staring. His lower jaw was receding and his mouth open. He was exceedingly awkward in his movements and unable to express himself in any language. His speech was wholly unintelligible. He could not give his name or his residence, and he was unable to make the conductor of the railway train understand at which station he wished to get off.

The prognosis in this case could not be made off-hand. It was of the utmost importance, because on it depended the treatment and the patient's future usefulness. After careful investigation, it was discovered that one great barrier in the way of mental development was the lack of power of expression and it was manifest that until the faculty of speech could be established the man could never become a useful citizen. On the other hand, it was assumed that if the faculty of speech could be acquired, the mere effort necessary to its acquisition would serve to develop some degree of mental power. The question therefore arose as to what was the cause of the tardy development of speech. On examination it was found that the patient had a defective tongue. The *genio-hyoglossus* muscle was too short and bound the tongue down to the floor of the mouth and thus prevented its normal action in the processes of articulation. A simple operation was performed, which consisted in a division of some of the anterior fibers of this muscle, thereby giving a free tip to the tongue. The operation was followed by a systematic course of training for the purpose of teaching the use of the tongue and the related organs in processes of speech. A little more than a year sufficed to accomplish this result and the boy who, up to 19 years of age, was supposed to be an imbecile, is now one of the most successful real estate brokers in Philadelphia.

This case is illustrative of a large class of children who are backward, not because of any organic mental deficiency, but because they are lacking in the power of an easy and natural expression of their thoughts.

Another case was that of a lad brought to my clinic at the age of 15 because his speech was unintelligible and he was backward in his studies. Unlike the former case, however, he was able to make some progress in certain lines of school work and presented an appearance of one having greater intelligence. He had a distinct vocabulary of sounds of his own unlike any I have ever heard and it was by no means limited. He could talk and read fluently, but it was all a meaningless jumble to everyone but himself and he claimed that the substitutes he used sounded to him the same as the actual words spoken by his fellows. In other words, his ear did not discriminate between his own jargon and the normal speech of other people. He was not a

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee of the Section: Drs. H. E. Tuley, Edwin Rosenthal and Samuel W. Kelley.

robust boy. In early childhood he had some organic heart affection. He was a "blue" baby, had spasms and some difficulty in respiration. He also had web fingers on both hands, indicating arrested prenatal development.

This boy was backward merely because he could not speak intelligibly; because he was unable to command that important tool of the intellect, language. A few years of speech training, however, resulted in a complete change in his mental and physical processes and he is now holding an important office position in one of the departments of the University of Pennsylvania.

Many other similarly interesting cases have come under my observation, but the above two will suffice to illustrate the importance of speech as a factor in the diagnosis and prognosis of backwardness in children, and from the history of their cases we may draw the following conclusions:

1. It is not always possible to determine at a glance the cause of backwardness in children.

2. Backwardness in children is not always due to a central lesion, but may be the result of arrested cerebral development due to some abnormality of structure in the peripheral organs.

3. A very common cause of backwardness in children may be some abnormality of structure in the peripheral organs of speech.

4. So closely are the speech centers related to the ideational centers of the brain that any impairment of the one generally results in a corresponding impairment of the other.

5. The best method of arriving at even a proximately correct prognosis in cases of backward children is to apply the speech test, or, in other words, to ascertain by careful study and experiment to what extent the faculty of speech may be improved, and it will be found that in those who are susceptible to training in what may be called the refinements of speech are the ones for whom we may promise the best results, and that possibilities for general development will be proportional to the capacity for speech development.

A PLEA FOR THE BACKWARD CHILD.*

C. F. WAHRER, M.D.

FORT MADISON, IOWA.

Before treating this subject in any detail, I wish to define the term "backward child." By this I do not mean a defective child, but one whose body, as well as intellectual faculties, are all in existence, and whose parentage is not of a degenerate character, but normal, as we generally understand the term. The line between normal and abnormal may be somewhat hazy, not well defined, nor perhaps capable of exact definition, but we all somehow have a very fair conception of the expression, unless we appear as experts in a will case in court. Yet if we remember our experiences in the school room as teachers or even as fellow pupils, or make observations in schools as visitors, we do not always have this same opinion, as to the brightness or dulness exhibited by various children. Thus many a child, somewhat backward in its studies, has been condemned as a dunce or even defective, by the too hasty observer, and, in the class under discussion, all on account of a

lack of perception on the part of the teacher or parent making this unfair and unjust deduction.

The fallacy of observation is due to contrast; this I wish to explain, and show that comparisons in these cases, as the old adage says, are odious. The comparison is with the so-called bright or forward child. By observation we have learned to expect a certain amount of physical and mental development from a child at a given age. If the child is unusually observant, with a good memory and the power of expression, it is called bright or even precocious, and; in comparison with such children, all others seem more or less dull. Where advancement is normal, we call such children normal or average and even recognize good minds. Where, however, the expected progress is slow, comprehension more or less obtuse, and the power of expression limited, we say such children are backward, dull, or even may imagine them defective. All this is a matter of comparison, with the bright child as our model.

The truth is, there is nothing wrong with the child. He has good powers that are latent or of slow development, or is really developing in a direction different from the course intended.

For instance, a morning-glory vine twines around its support from right to left, while the hop vine twines in the opposite direction. Both are correct, and it is just as useless an effort to reverse these directions, and serves as little good purpose, as it is to make these so-called backward children follow the course of the so-called bright child.

An astronomer should not be deceived by a meteor with all its brightness and brilliancy, and make invidious comparison to the disadvantage of the pale, far-distant, fixed star, which upon study proves to be not only a sun but a whole solar system; so in like manner, we should not, after observing a bright child with good memory but of ephemeral mental development, under-rate the slower, dull pupil, whose mind powers are latent, not absent and in the process of a splendid development if rightly studied, and when once made manifest, show an intellect as strong and unwavering as the fixed star.

Great men, like Shakespere, Sir Walter Scott, Edison, Beecher, Peter Cooper and many more, were condemned by their teachers and proclaimed hopeless dunces and their parents were beseeched to take them from school, as it was considered a waste of time and money to keep them there. Milton, one of the greatest poets of the theological school, was 63 years of age before he became known; according to his own saying, he appeared late, but when he did appear he was fit to do so.

While these backward children are not favorites with the average educator, it should be a teacher's duty and pride to search for the hidden talents lying dormant among children of most unprepossessing appearance. Examinations, or tests, as they are more recently called, intended for this purpose, are most dismal failures in this direction, for they reveal not the intellect or the slumbering genius, but only what a child with a good memory has stored from recently gathered facts. And let a happy manner of good expression be added and this child shows to splendid advantage over its fellows. So these tests are not tests after all, only deceptive surface phenomena with their usual exceptions.

Neither are the cumbersome and high-pressure curricula of our schools, with their many anachronistic arrangements, calculated to advance the subjects of our contention, nor to evolve acuteness and dispatch

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Diseases of Children, and approved for publication by the Executive Committee of the Section: Drs. H. E. Tuley, Edwin Rosenthal and Samuel W. Kelley.