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EDITED BY

HAROLD RUCKMAN MIXSELL, A.B., M.D.

FELLOW OF THE NEW YORK ACADEMY OF MEDICINE; ASSOCIATE ATTENDING PHYSICIAN TO THE WILLARD PARKER HOSPITAL; ASSISTANT ATTENDING PHYSICIAN TO THE NEW YORK NURSERY AND CHILD'S HOSPITAL; ATTENDING PHYSICIAN TO THE NEW YORK NURSERY AND CHILD'S HOSPITAL, OUT-PATIENT DEPARTMENT; INSTRUCTOR IN PEDIATRICS, BELLEVUE MEDICAL SCHOOL, NEW YORK

AND

CHARLES ALBERT LANG, M.B., TOR. M.R.C.S., ENG.; L.R.C.P., LOND.

ASSISTANT ATTENDING PHYSICIAN TO THE NEW YORK NURSERY AND CHILD'S HOSPITAL; ATTENDING PHYSICIAN TO THE NEW YORK NURSERY AND CHILD'S HOSPITAL, OUTPATIENT DEPARTMENT; ATTENDING PHYSICIAN TO THE BABIES' HOSPITAL DISPENSARY; INSTRUCTOR IN PEDIATRICS, CORNELL UNIVERSITY MEDICAL SCHOOL, NEW YORK

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SPEECH DISORDERS AND DEFECTS

By Mabel Farrington Gifford,

Director of the Speech Clinic, University of California Medical School and Hospitals; Supervisor of Speech Improvement in the San Francisco Schools.

The department of Speech Correction in San Francisco was first opened as a Speech Clinic in the Pediatric Department of the University of California Medical School in 1915. This clinic has been held Saturday mornings for the accommodation of school children. The cases are divided into groups, according to the type of the defect, and are given class instruction wherever possible and individual treatment in unusual cases. In general the speech defects are classified under 4 heads. The first to be considered are the speech disorders, found more among the psychopathic types of children. These include stammering, stuttering and cluttering. For convenience in recording these cases, stammering is defined as a spasmodic action of the speech muscles; stuttering as repetition of the initial sound of a word; and cluttering as rapid, choppy, indistinct speech.

The second group have neurotic, organic or sluggish articulation of the elements of the language. Many of these are infantile mistakes such as lisping and other substitutions of sounds. By organic is meant the malformations of the speech organs such as teeth, palate, and jaw defects and nasal or throat obstructions which effect speech. Still another group of children are trained in this division who have not defective speech in the same sense as the others but who mispronounce the English elements because of a foreign language environment.

The third group have sluggish enunciation due to a careless use of the jaw and lips. These have disagreeable voices. Among these are the nasal, harsh, high pitched, weak, hoarse, tense or thick voices.

Outside these regular types are the cases of aphasia, aphonia and mutism. Cases belonging to the last type are examined first for hearing defects, next the mental tests are given to determine whether mental deficiency is the cause or whether the absence of speech is due to aphasia. The aphonia cases may be due to hysteria, to a partial paralysis of the larynx muscles, or to tumors in

the throat. In cases of marked retardation of speech, a careful investigation is made of the environment and heredity of the children. Tests are made to see if this retardation is due to arrested mental development or to other causes. Some children have a combination of 2 or more of these defects or disorders.

A careful history and record of progress is kept of each case. Children who need the attention of a physician, surgeon or orthodontist are referred to these departments before any speech correction is attempted.

Referring again to the first group, the psychopathic type of children, an entirely different line of treatment is pursued than that given to the other cases because of the peculiar nature of the disorder. In former years, the outward manifestation was mistaken for the cause. Accordingly various operations were performed, nerve tonics were given and mechanical devices were worn in the mouth. All of which proved to be ineffectual. Neurologists now classify this manifestation as one of the neuroses caused by a severe fear shock, which was in some way associated with the effort to speak. The original experience may be forgotten but by the unconscious association of ideas the disturbance in speech continues. In some instances there is a history of a particular shock followed by the appearance of the speech disorder. Among these might be mentioned a case where a child saw a companion burned to death. In another instance a child just escaped drowning. In most cases the parents are unable to account for the disorder.

In the treatment of these cases a careful study has to be made of each child, as heredity, environment and experience are important factors to be taken into consideration. Some children are keenly sensitive to ridicule and very early develop self-consciousness and a feeling of inferiority. This has a warping effect upon the child's psychological development. Often his general health is greatly impaired because of worry over his inability to recite in the schoolroom. In some cases he prefers to be considered stupid and pretends that he does not know his lesson rather than subject himself to the agony of conflicting emotions which result from the attitude of thoughtless schoolmates. Therefore it is necessary to build up confidence and poise and in every way to counteract the effects of the humiliating school experiences. The physiological speech drills bring about a conscious

control of the entire speech mechanism and serve the purpose of giving the child a concrete proof of his ability to control himself. The emotional training is very important if these children are to be fitted to meet the difficult situations away from the home protection.

The articulation cases mentioned in the second group, require individual instruction. In many cases children may have perfect hearing and yet fail to perceive the sharp distinctions in sounds. The acquirement of normal speech is the result of 4 processes. The first is the receiving of sounds by means of the ear, the second is the registration of these sounds in the auditory speech center of the brain, the third is the association of ideas with these sounds and the fourth is the reproduction of these sounds by means of oral language. The first step in treating a case is to examine the hearing. If that is normal, the next step is to use every means to quicken the perception of the differences in sounds. The mirror and pictures showing the contact of the tongue with the palate will give a visual impression of the physiological formation of a sound. When the new position of the tongue is taken, the child gets the tactile and a muscular sensation in the speech organs which is necessary to produce the required sound. Considerable drill is given until the new habit is formed. The lessons are given in steps of progression from the simple sound to all its combinations in words and sentences. The element that gives most trouble is the hissing sound found in words like salt, cell, or box. Some children substitute the "th" sound, as thalt for salt, thell for cell and bokth for box. Others make a thick cluttered sound instead of the sharp hiss. All cases show improvement from the careful drills. Even the mentally deficient make considerable progress.

Often a child's speech has so many substitutions of sounds that it is almost unintelligible. Frequently such children are classified as mentally deficient and unequal to any school recitation. But in many cases a few months of instruction and home cooperation completely clear up these defects. In the mentally deficient these articulation defects are frequently found in degrees ranging from no speech, unintelligible jargon, substitution of many sounds up to ordinary infantile mistakes known as "baby talk."

Voice defects are sometimes due to nose and throat obstructions or to a sluggish condition of the muscles after an operation for their removal. Often, however, the fault lies in a lack of ear training and proper tone placing. To meet these conditions, exercises are given to develop breath and diaphragm control, a voice free from tension, well modulated, having resonance and a pleasing quality. In some instances the fault lies farther back. Environment may bring about a chronic state of irritability which is reflected in the voice. Other emotional states are reflected in the voice, also. If a pleasant speaking voice is to become a habit the imagination must be awakened and the desire to interpret selections of the best literature should be stimulated, showing the possibilities of such interpretation through the medium of a beautiful speaking voice.

Sluggish enunciation is often due to carelessness and the lack of training in good speech. Exercises for developing the habit of a free jaw and lip action result in a clear distinct enunciation.

The same work is being carried on in the public schools under the direction of the writer who is also training teachers to assist in the handling of hundreds of speech defects. General speech improvement is being introduced as fast as the training can be given. In proportion to the school attendance, the San Francisco schools have the largest speech department in the country. The work begins in the primary grades and extends through the high school. The city is divided into districts and the classes sent to centers where the director and an assistant meet a different group each day, covering the city in a week. This is repeated each week and the instruction is followed up by a teacher from each school who attends the center, observes the corrective lesson and gives it to the pupils who need help in her own school.

Under the University Extension division, classes for the training of teachers in this field are being conducted. In addition to these practical courses, lectures on the theoretical background of speech defects with the pathological and therapeutic aspects are given by the Neuropsychiatry Department of the University Medical School.

Heretofore, very little attention has been given to the pedagogical phase of the correction of speech defects because no one had brought together all the correlated subjects and worked out

a plan of classified instruction. But now this has been done. Material has been prepared to meet practically every case of defective speech. Therefore, no child should be allowed to grow up handicapped by a defect in speech.

DRUGS IN TREATMENT OF CHILDREN — Klotz (Therap. Monats., Berlin, March, Vol. XXIX., No. 3, pp. 129-192) comments on the complete failure of treatment of rachitis to date on the basis that it is the result of disturbances in some one internal secretion. Neither thyroid nor epinephrin treatment has displayed the least efficacy, nor hypophysis nor thymus extract. Of course if any treatment is begun just as the rachitis is spontaneously subsiding, "astonishing results" may be obtained with or rather in spite of the treatment. Calcium alone is equally ineffectual, but given with phosphorus and cod-liver oil, the desired result is realized. Recent studies of the metabolism by Schloss indicate that the phosphorus can be dispensed with. The calcium can be given in the form of 1 or 1.5 gm. of calcium acetate (calc. acetic.) daily. Another field in which calcium is useful is in melena of the newborn. Whatever the scientific explanation, the melena may be arrested by subcutaneous injection of 3 or 5 c.c. of a 5 per cent. solution of calcium chlorid ($CaCl_2$ with gelatin. Or serum or gelatin may be injected and calcium acetate (10 c.c. of a 5 per cent. solution) or calcium chlorid crystals (10 c.c. of a 10 per cent. solution) be given by the mouth every two hours, lengthening the intervals after 3 gm. has thus been taken. Klotz has never witnessed any benefit from calcium salts in prophylaxis or treatment of catarrhal affections or serum sickness. The main field for calcium treatment is in arresting a tendency to spasms and convulsions. From 8 to 15 gm. of the calcium chlorid must be given in the first twenty-four hours, and most of it during the first hours. With calcium acetate this dosage should be reduced one-third. The drug is then continued for three days, giving 1.5 gm. calcium chlorid or 1.25 calcium acetate six times a day, gradually reducing this until by about the tenth day 4 gm. is the daily dose, and this is kept up indefinitely. In case of a relapse, the course is begun anew with three of the initial doses and then five doses a day of 1.5 gm. of calcium chlorid or 1.25 of calcium acetate.—*Journal A. M. A.*