

DEFECTIVE SPEECH AND SOME OF ITS PHASES.*

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The subject of defective speech covers such a wide scope of the human anatomy and pathological physiology, that I thought it best to limit myself to a few of the most prevalent conditions. Among all the ills and miseries that befalls humanity, there are none so embarrassing and entail so much anguish and depression as that of defective speech. Dr. Hudson Makuen, the pioneer of defective speech in this country, had the courage to call attention of the profession to its indifference, and through the media of the profession, to spread a propaganda of the importance of defective speech. For some time the profession seemed to be indifferent and the laity in general showed total negligence if not distinct levity. All cases that come into our clinic practically have their own sad tales. Some children left school to avoid embarrassment during recitations, and to eliminate laughter and scorn in the class rooms. Many men with good brains have lost their positions, and some could not obtain the positions that they deserve on account of defective speech.

To illustrate. We now have a little girl in our clinic, age nine, somewhat backward, probably of a lowered mentality than the average child of her age, who becomes embarrassed upon the slightest provocation especially when among strangers. The children at school, not understanding her weakness, nor the teachers understanding her sensitiveness, are constantly teasing, nagging and making life miserable for her. The parents at home also consider her a back number. Their general attitude is that Catherine cannot do this, and Catherine cannot do that. On account of constant oppression and unfit surroundings, the child developed the typical physical carriage of that of a miserable individual, her head constantly lowered, a face of anxiety, and when spoken to, her eyes are constantly directed towards the floor, and practically always has the answer "I can't." For the past few weeks, since the home surroundings have been bettered, due to a confidential talk with the parents, instructing them to be more tolerant with her, and the sympathy shown her in the Speech Clinic at the Polyclinic Hospital, the change in her general attitude is remarkable.

In these days, when efficiency is an important factor for substantial existence, it is our duty as healers of mankind to alleviate

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all misery, and to promote human welfare. Defective eyes or flat feet and many such ailments that are not acutely dangerous to human life, are treated with caution, and remedial defects are immediately instituted; but when incipient defective speech develops, we all have the tendency to say that it is neurasthenic, and in children the old proverb is constantly repeated that they will grow out of it. The more I see of defective speech, the more I am convinced that they grow into it, instead of out of it, and it is therefore essential that speech be corrected early before it becomes chronic.

The first form of defective speech to be considered is dyslalia or stammering. There are three stages in the stammerer's course: (1) Acute, which is characterized by rapid gabbling speech, confusion of thought, irritability, and difficulty in concentration; (2) The above symptoms exaggerated with a tendency to stammer, etc.; (3) continued stammering.

The most can be accomplished in the early stage, if proper environment is instituted. Great caution should be taken not to irritate the child, nor to punish it during the early stage of excitement, as corporal punishment will produce a vicious cycle and exaggerate the above symptoms.

Speech is an acquired faculty, and defective speech is a faulty faculty acquired. It is therefore essential to institute treatment before faulty speech is developed, for in treatment it is necessary to undo all the faults and to begin anew to teach proper methods.

(3) To illustrate a case of second stage of stammering. Master B. Age 14. Weighs 128 lbs., 5 feet 5 inches, left school in seventh B. grade and is the oldest of a family of six; his habits are good, and he is a constant reader. About five months ago, he was compelled to stop school on account of financial conditions, to seek employment. Four months ago, he became very irritable, developed a temper upon the slightest provocation, which was totally neglected by the parents. Five weeks ago, he noticed that he occasionally stammers, especially in public. His parents are taking keen interest in him, and willing to deprive themselves of his little income so as to put him in the right hands and on the road to complete recovery.

The essential basic principles for speech are breath, voice, articulation and mentality.

(1) The breath is attained by the lungs, diaphragm and the accessory respiratory muscles. In speech we need very little air, but it is important to teach the defective speaker to control the air

column, so that there is no sudden outburst following full inspiration nor the gasping following the complete expiration.

(2) The late Dr. Hudson Makuen defined that voice is produced by a column of air, playing over the vocal cords setting them into vibration, and its diffusion through the various remote resonate chambers and into the atmosphere. Voice is an early development and precedes that of speech, for the baby whines before it speaks, and as mentality develops the desire for expression arises.

(3) At first various sounds are uttered and gradually the sounds are symbolically clothed in the form of words, and when properly thought and articulated, normal speech is the result. The essential things for proper spontaneous speaking therefore are: (a) Ideas, which are stimulated by the occasion the person is confronted with. (b) The expression and the external realization of these thoughts either in the form of writing or speaking. The latter is probably accomplished by central innervation, and through efferent innervations conducted to the peripheral organs of speech. The primary principles of speech are, the auditory and glosso-kinetic centers, the visual and chiro-kinetic center, the latter being chiefly employed in writing. In the auditory centers are stored the images of the words as they are spoken and heard, while in the glosso-kinetic centers are stored various memories of complicated muscle movements and modes of co-ordination of speech. Ideas arise and are interpreted in the form of words stored in the auditory center and are transmitted to the peripheral muscles of speech by the glosso-kinetic centers.

The phenomena of stammering are usually characterized by a contraction of the muscles of speech with the resultant movement of other related organs. The latter is due to misdirected concentrated uncontrolled nerve energy which, during the stage of excitement, is disseminated to the neighboring organs sometimes resembling that of chorea; while the articulatory defective speakers, unless due to some mechanical reasons such as elongated frenum, hypertrophied tonsils and adenoids are due to faulty auditory perception and faulty glosso-kinetic emanation. Under this heading would come the so-called cute or baby talk, where the *D* is pronounced as *DZ*, doll such as *dzoll*, cat as *tat*, etc., and many other such faulty articulations. Many parents encourage the children afflicted with this so-called cute or baby doll disease, on account of its oddness and cuteness to the listener.

Speech is normally automatic and independent of conscious effort. This is true whether speech be normal or abnormal. De-

fective speech is therefore auto-incurable unless the conscientiousness of the individual is aroused and proper interference is instituted; while voice is an art acquired and is often the mirror of man's own self, for we are all acquainted with the husky voice of the vagabond, the tremulous voice of the asthenic and overworked, the sympathetic voice of the physician, the cold blooded voice of the lawyer, the chest tone of the factory girl, the pious voice of the clergyman, and the falsetto voice of the feminized masculine.

Thus far, I briefly touched upon the stammerers and the so-called baby talkers. Among the other phases of defective speech are: the husky or hoarse voice, which may be due to acute and chronic laryngitis, tuberculous, syphilitic laryngitis, intra-laryngeal tumors, papilloma, and tumors pressing upon the recurrent laryngeal nerve, etc. Whispered voice, which is often followed by complete aphonia, may present organic bases such as complete or partial paresis or paralysis of the adductor muscles of the larynx, while others are of the so-called hysterical type. In normal whispering there is a triangular shaped opening in the glottis between the projecting parts of the arytenoids. There may, however, be individual adductor paralysis, for when the inter arytenoids are involved, the same phenomena results, for in the latter condition there is faulty approximation of the arytenoids. When the thyroarytenoidei muscle is at fault, there is an elliptical slit widest at the middle of the vocal cords, due to faulty support of them. When there is crico thyroid weakness which normally stretches the cords, there will be a sinus aspect, while weakness of the crico arytenoid lateralis results in faulty approximation of the arytenoids. Here I wish to quote two cases brought by their physicians to the Pennsylvania Hospital for a direct laryngoscopic examination.

Case No. 1. Mrs. K., Age 57, married, has family of four children, of moderate means, who five months prior to my examination contracted acute laryngitis. The physician properly instructed her to speak as little as possible and if necessary to speak, she must whisper. Among the other treatments instituted were direct intra-laryngeal applications of argyrol, glycerite of tannin, and various inhalations, etc. The larynx was examined by the direct and indirect methods, and I could find no organic trouble, but I noticed that when the patient whispered, there was an undue column of air expired. This was definitely proven to myself and shown to the patient that by placing a mirror in front of her mouth a thick film of moisture settled upon the mirror; while the same sentences uttered by myself barely clouded the mirror.

Case 2. Mrs. B., married, has family of three children, hoarse for a year.

Direct and indirect laryngoscopic examinations negative. This patient practically went through the same treatment without any improvement. The above mirror observations held true here also. I found that these patients had no diaphragmatic control and practically spoke on the residual pulmonary air. After about ten lessons of proper diaphragmatic control, and proper vocalization, we were able to produce normal tones, which was followed by complete recovery. The only other mechanical means used with these patients was asking them to cough at various intervals, for thus I brought out voice during their coughing spells, and called their attention to it. I also used pressure on each side of the thyroid cartilage pressing inwardly from both sides, thus aiding the muscles that have been relaxed for such a long time.

Falsetto voice. Two cases came under my observation, one a school teacher, female, age 23, who after several months of teaching developed a high pitched falsetto voice. Her only dread was, of the many remarks made, that she was developing the typical old maid's voice. Intralaryngeal examination was negative. The difficulty that this young woman was confronted with, was, that she taught in a truant school, and in order to accomplish the duties intrusted to her, it required a great deal of loud talking on her part. The larynx seemed to be in a higher place than normal, which, therefore, threw the sound waves higher with the resultant falsetto voice. Careful vocalization, laying great stress upon the respiratory control, and constant exercising of the low and middle register brought the voice back to its normal state. This condition occasionally recurs during excitement.

The second case was a boy, age 19, brought from Wilmington by his sister with a note from the family physician for a tonsillectomy. Upon examination I found two innocent tonsils; intralaryngeal examination negative. I also examined to see whether there was any sexual defect, but this was not present. The falsetto voice developed between the ages of 14 and 15, when there was a break in the voice, between that of his natural voice and the falsetto. He found that it was much easier for him to speak in the falsetto and he adopted the latter. After many lessons in vocalization, and suitable exercises upon the low register, I firmly established a resonant basso voice. The difficulty I had with him was that he had no musical ear and could not imitate tones.

Muffled voice, which is characterized by its dullness, is caused by nasal and naso-pharyngeal obstructions. This can readily be cured by operative interference, such as tonsil and adenoid removal, and selective operation for nasal obstruction.

Nasal voice is caused by inadequacy of the velum palati and levator palati muscles allowing a great proportion of vibrating air to escape through the naso-pharynx. This condition often accompanies atrophic rhinitis, and injury to the soft palate and tonsillar pillars following poor tonsil surgery.

Summary. (1) It is important that each patient be studied from various angles, that the ear, nose and throat, eyes, medical and neurological examination be made, as it is necessary to seek any etiological factors and eliminate them. (2) Surgical interference should be instituted when necessary, but one must not be left with the impression that the latter will cure all forms of defective speech. (3) It is essential that the eyes and ears be trained by constant repetition of various exercises, first that they be seen perfectly and be pronounced properly. We know from experience that the eye can be trained to within a thousandth of an inch. Taking the eye as a simile, it is perfectly logical that the ear could also be trained. As previously stated, words are stored in the auditory center and transmitted through the glosso-kinetic center. Therefore, by constant repetition of exercises and words, the auditory center is impressed with the true sound of the various words, which can readily be recalled and properly be expressed when the occasion presents itself. (4) Speech is normally automatic and subjectively independent of conscious effort. A person afflicted with defective speech, realizes when others speak faulty or mis-pronounce words, but are unable to correct themselves. In order to accomplish most in the least time, it is essential that treatment be instituted early before it becomes chronic. (5) Defective speech is an overwhelming problem confronting us in these days of war and triumph, for there are innumerable stammerers in the European armies now, and thousands who become deaf. As otologists and laryngologists, we will be confronted with this immense problem and must, therefore, be prepared to teach those who stammer, and to teach lip reading to those unfortunate deaf who will return from the battlefields.

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