HEARING AIDS AND "DEAF" EDUCATION.

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Up till a few decades ago little discrimination was made between mentally abnormal children and the totally or partially deaf. With the wider application of scientific testing methods however, it is today possible to differentiate and segregate the two main groups at an early age so that specialised education may be better organised accordingly. The advisability of treating together the totally and partially deaf has only in recent years come up for questioning, the appearance, during the war years, of efficient and wearable vacuum-tube hearing aids bringing the new question mark.

Bezold, who tested children at a school for the deaf towards the end of the last century, using tuning forks, concluded that only about 20% could be classified as totally deaf. Hughson, with more recent testing methods, estimates 95% of children at the Pennsylvania School for the Deaf as having sufficient hearing to respond to strong sound stimuli. In theory, purely visual and kinaesthetic education for such children is analogous to treating children with defective eyesight as though they were totally blind. In practice it is of course much simpler and less costly to fit the latter group with spectacles than the former with hearing aids, but to continue treating together the totally and the partially deaf, means branding these partially deaf children - roughly 95% if we accept Hughson's findings - with typical "deaf speech", with its monotony of tone and clumsy articulation.

Cordia Bunch, in his work "Clinical Audiometry", cites the case of a young American from a large Deaf Institute who passed into adult life "to all intents and purposes totally deaf', his speech stunted and lipreading inadequate. He was found however to have enough hearing to benefit from a hearing aid, but, being obliged to earn a living, he was unable to spare time or money for a lengthy re-education in sound discrimination." This boy, with a great deal of residual hearing, faces a life of deafness and of social and occupational maladjustment which could have been prevented had his residual hearing been used in his educational program. It is obviously the duty of those in charge of the education of children thought to be deaf to determine at the earliest possible moment the presence and extent of any existing usable residual hearing, and, in the child's educational programme, to have this residual hearing and its possible utilization constantly in mind.

The first two of the accompanying audiograms* are those of persons recently fitted with hearing aids in Johannesburg. Mr. V. of fig. 1., developed normal speech habits and attended a normal school before his disability set in at the age of twelve. His schooling was completed with the aid of naturally acquired lip-reading while his hearing became progressively worse. Today, fitted with a powerful hearing aid, his speech is normal, he enjoys the cinema and radio, and earns enough to support a mother and two

* See P. 39

sisters. Miss D. of fig. 2., has "deaf speech" and is socially and occupationally handicapped. Although showing more residual hearing than Mr. V. her sound discrimination has not been developed, and, using a hearing aid with extra high-frequency amplification, the odds are still against her ever becoming as well adapted to her environment as the former case.

What can be and is being done to prevent the recurrence of this state of affairs? Tests were performed on young children at the Salford War nurseries in England during the recent war by Dr. and Mrs. Ewing of Manchester University. It was found that, up to the age of three months, percussive sounds were more effective than the human voice, usually producing reflex responses such as blinking or starting in children not totally deaf. After the third month the voice, associated with such events as feeding and comforting gained response. Between 7 and 12 months skill appeared to develop in differentiating sounds and locating their source. From one to two years simple words and sentences were generally understood, and those with normal hearing responded to soft speech at a distance of six to nine feet. After the second year pitch-pipes could be used to detect impairment in different frequency ranges. Reliable audiometer testing was not found to be feasible below the age of five years, and even at this age much depended upon the degree of co-operation which could be elicited.

They stress that, even with children who respond only to intense sounds, as much auditory stimulation as possible should be given the child by means of speaking and singing close to the ear before he begins to walk, and thereby discovering new and brighter interests. At the stage where speech develops in normal children, they advise that the partially deaf child be given lip-reading training hand in hand with the aural, so that he has a link with the outer world. For the development of good speech habits the aural stimuli, however, are the more important.

Even if expense, and the necessary care in the handling of hearing aids, precludes the use of a hearing aid in early childhood, the help of auditory stimulation in developing good speech habits is, I think, sufficient reason for its application. In England, the Education Act of 1944 allows the admission of children as young as 2 years to schools for the deaf. In a South African school of my acquaintance children of 2 and a half are accepted. At the latter school much time is spent in interesting young partially deaf children in loud percussive and musical sounds such as bells, drums and clappers and in training them to discriminate between the respective sounds. Group hearing aids are extensively used to develop a speech-sound sense. Even if a child is unable to perceive all sounds used in speech, as happens with high-frequency loss cases, a well developed sense of rhythm can do much toward better speech development.

There is necessarily a limit to the degree of impairment to which a hearing aid can bring sufficient sound for the understanding of speech. Fig. 3 shows the "Probable minimum" of residual hearing required, as put forward by a group of leading American scientists. One serviceable ear is sufficient for speech perception, but if both ears fall much below this limit such a

high degree of amplification is necessary, to present speech to the ear, that intense external sounds, such as the slamming of a door, will be amplified to an intensity painful and possibly detrimental to the inner ear mechanism.

The correct fitting of a hearing aid, to give the best type of compensation for the individual case, is a skilled operation and somewhat akin to the fitting of spectacles. Speech therapists who deal with partially deaf children and overseas schools for the deaf, are attaching increasingly greater importance to early auditory stimulation and the skilled fitting of individual hearing aids wherever possible. A slow but steady revolution appears to be taking place in the adapting of hearing-handicapped persons to their environment with the help of the modern hearing aid.

References:

Bunch - Clinical Audiometry.

Ewing and Ewing - "The Ascertainment of Deafness in Infancy and Early Childhood" J.E. Laryngology & Otology, Vol. 59 No. 9 September 1944.

Fig. 1

Mr. V.
Age: 23

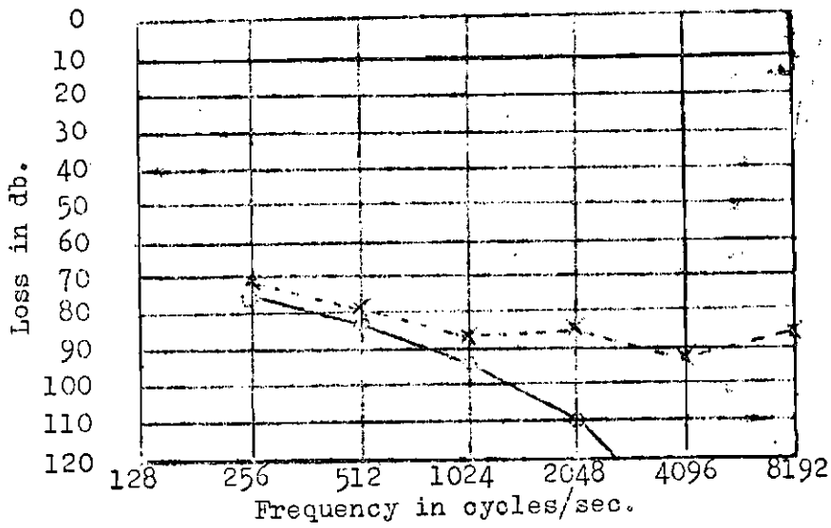

Fig. 2

Miss D.
Age: 19

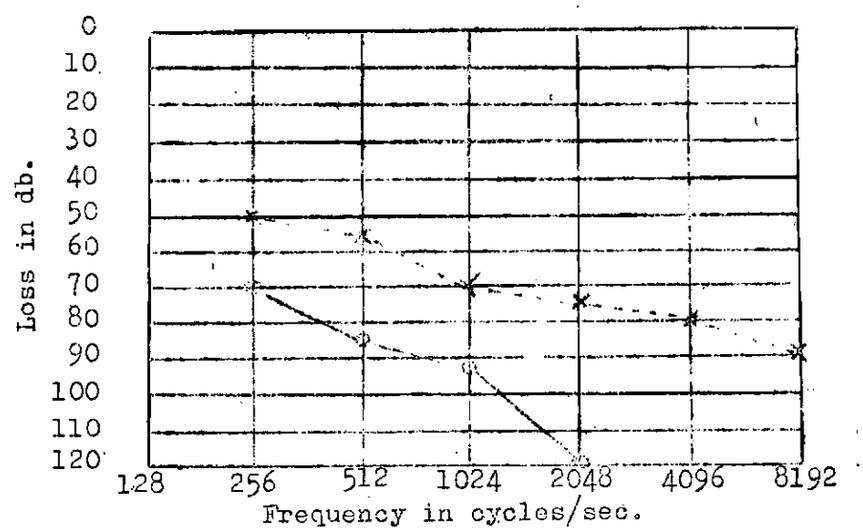

Fig. 3

Probable minimum of residual hearing which can benefit from a hearing aid.