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TINNITUS AND DEAFNESS—A NEW INSTRUMENT FOR THEIR RELIEF.*

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The photograph explains itself.

When in operation, a musical note is sounded synchronously with the vibration of the Victor pneumomassage pump. The note is not unlike the peep of a young chicken or like the chirp of a cricket. About three pounds of air pressure is employed; any greater pressure would prevent visible vibration of the drum of the ear.

In the case of a very depraved acoustic nerve, the patient turns the screw cap of the Galton whistle until that certain pitch is reached where the whistle is heard by the patient. The massage is continued with that note during the seance. The speed of the vibrations is kept at whatever rate is most agreeable to the patient. It is generally not very fast.

A seance consists of thirty seconds of suction-with-release with the whistle, followed by fifteen seconds of pressure-with-release, but without the whistle, in order to avoid exhausting the nerve. These two proceedings are repeated until five minutes have elapsed. The operator with finger on the stop cock from the air tank controls the whistle, while an assistant at the massage pump controls the lever for pressure or suction at command of the operator. The Siegle otoscope accurately fitted into the auditory canal allows the observer to see the drum during the whole seance. Before beginning the treatment the middle ear is inflated. An oil vapor is used, and in some cases the pharyngeal orifice of the eustachian tube is painted over with a weak idoglycerin. During the seance the patient is directed to forcibly close the eyelids and at the same time make the effort at swallowing.¹

The theory of the treatment rests on the idea that in order

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to stimulate a part of the body, its function must be exercised. A muscle to be stimulated must be contracted and relaxed. Bone which has been broken and fails to unite is forced to perform its function of resistance by the exercise of resistance. A stiff joint whose function is motion is relieved by passive motion. And so a nerve whose function is to recognize sound and has lost that ability must be exercised with such sounds as it will recognize, and later it will notice other and more complex sounds. A regiment of soldiers crossing a bridge is compelled to break step lest the vibration might break down or damage the bridge. The mastoid bone has similarly a note of vibration which the pneumomassage awakens, together with the parts included in the bone, which are blood and lymph vessels, nerves, endolymph and especially the terminal filaments of the acoustic nerve. Thus the vibration and rhythmic sounding of the note which the ear hears is a warrantable procedure for the relief of tinnitus and deafness, and though failures have been noted, there have been quite a number benefited sufficient to justify the claim that it is a valuable means of relief. According to Urbantschitsch and Marguilies, all hope need not be given up even in the very deaf.

The electromotor apparatus is not new. Dr. W. S. Bryant in 1905 proposed his phonograph acumeter.

Inflammatory conditions are a contraindication. Treatment should be repeated when the patient notices a subsidence of the good effects of a treatment.

Every case on which this paper is based had a tympanic drum. Many had had perforation.

Results of treatment by this method show:

1. Marked otosclerosis is but little benefited, and that but temporarily.

2. There may be no or little improvement to hearing the watch, yet the voice and other sounds may be greatly improved.

3. In a number of cases the improvement is marked and permanent, especially where the handle of the malleus is seen to move freely. Improvement has occurred in most unexpected cases, and failure has resulted where success seemed assured. Tinnitus may be relieved, and treatment show no improvement in hearing, and vice versa.

REFERENCES.

1. Fowler, E. P.: *Manhattan Eye, Ear and Throat Hospital Reports*, No. 11.