

ABSTRACTS

EAR.

An Effective Local Anæsthetic for the Tympanic Membrane. CITELLI.
(*L'Oto-Rhino-Laryngologie Internationale*, May 1922.)

The solution advised is menthol, 2 grams, liquid vaseline, 100 grams, chloretone, 8 grams. Five or six drops are instilled for ten minutes before operation. It is claimed to be non-irritating, non-toxic, and painless.

A. J. WRIGHT.

Recent Observations on the Treatment of Chronic Otorrhœa and of Deafness following Otitis Sicca. Professor SCHÖNEMANN. (*Archives Internationales de Laryngologie*, March 1922.)

The purpose of this article is to recommend the insufflations of powders "per tubam" in the treatment of chronic purulent otorrhœa and in dry middle ear catarrh. The author uses two powders—xeoform (bismuth base) and vioform (iodine base), which he insufflates through a Eustachian catheter of wide bore.

In children it is possible to introduce the powder by politzerisation.

MICHAEL VLASTO.

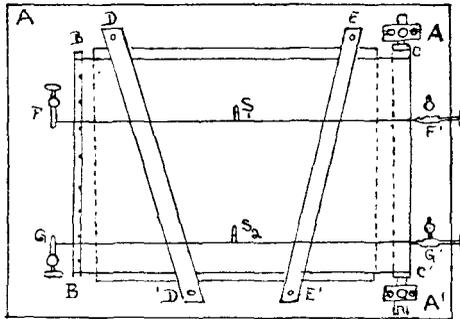
Experimental Confirmation of the Cotugno-Helmholtz Theory of Sound Perception. A. STEFANINI. (*Archiv. Italiennes de Biologie*, December 1915, and *Archiv. Italiano de Otologia*, Vol. xxvi., fasc. 5, 1915.)

Stefanini's model consists of a sort of roller blind, of "waxed" linen (architect's tracing fabric), stretched at an approximately even tension. A trapezoidal section of the blind is clamped by two converging bars of metal. The parallel sides of the blind are free. This furnishes the experimenter with a membrane, stretched transversely, and differentiated regularly and progressively for length. By an ingenious device he uses as indicator two very small mirrors carried on threads of silk stretched across the membrane. The end of each mirror is attached to the membrane. Any movement of the membrane is recorded by the mirrors, which rotate around the silk which carry them. A beam of light reflected from the mirrors on to a screen magnifies their movements. The breadth of the membrane at the level of attachment of the lower mirrors is rather more than a half of that of the level of the upper mirrors. He found that the membrane was thrown into vibration by different notes at the two levels, the difference of pitch of the exciting tones being rather less than one

Ear

octave. A similar result followed when the membrane was immersed to a depth of 2 mm. in a basin of water. His experiments provide a very pretty demonstration of the fact that a non-extensible membrane, stretched transversely, conforms in its vibrations to the formula $n = \frac{1}{2l} \sqrt{\frac{t}{m}}$ at all events, so far as the factor l is concerned. This is what is assumed by Helmholtz, and is what one would expect to be the case.

Stefanini's experiment was designed, he tells us, to confute the misleading experiments of Ewald, whose membrane was not differentiated for (transverse) length, and of both Ewald and Lehmann in so far as both of them used stretchable rubber membranes, which are not capable of having transverse, without, at the same time, having



B B' Linen fixed here and passes round roller C C'.¹ Ratchet A A'¹ prevents roller from slipping. D D' and E E' are clamps limiting vibrating segments of linen. S¹ and S² are mirrors carried by silk threads F F' and G G' registering vibrations of the linen.

longitudinal tension. His claim in this respect appears to be well founded. His model takes no account of the factors of graduated tension or graduated mass, and consequently falls considerably short of being a complete representation of the resonance mechanism of the basilar membrane. His experiment with the membrane immersed in water to a depth of 2 mm. in an open bowl does not in any way illustrate the part the water plays in modifying the resonant action of the membrane. Within the limits of its applicability his experiment is well devised, and, as he says, the apparatus with which it is performed is comparatively simple. The mechanical factors present in the cochlea cannot, however, be adequately reproduced in so simple a fashion, and the simplicity of the apparatus is in proportion to its incompleteness. The differentiation of the fibres of the basilar membrane for length amounts to only some such proportion as 3 to 1 (Keith). This would only account for a range of pitch of about $1\frac{1}{3}$ octaves. To obtain a

Abstracts

range of $10\frac{1}{2}$ octaves, such as the cochlea possesses, by differentiation in length only of the fibres, would require an increase of some 1500 from the shortest to the longest.

G. WILKINSON.

New Types of Acoumeter. R. PAPAIE. (*Arch. Ital. di Otol.*
Vol. xxxiii., March 1921.)

This article describes two types of acoumeter, the principle of which is the gradual dispersion of sound conducted along a tube by means of openings in the side. The first model consists of two metal tubes, one fitting tightly into the other. The outer tube has a series of lateral openings arranged in a spiral. By adjustment of the inner tube as many openings may be left free as are desired. This device is inserted in the rubber tube leading from the source of sound (watch). The other end of the tube is connected with the ear to be tested. By uncovering more and more of the holes the sound is progressively weakened, or *vice versa*. The second model has two tubes placed end to end which can be moved gradually out of alignment by means of a screw. The author claims great accuracy for this method of acoumetry.

J. K. MILNE DICKIE.

Researches on the Function of Hearing, with an Especial Study of Pathological Shortening of Bone Conduction in Syphilitics with apparently Normal Hearing. R. LUND. (*Acta Oto-Laryngologica*, Vol. iii., fasc. 4.)

Schwabach's test discloses shortening of bone conduction in 30 to 40 per cent. of cases of acquired syphilitics whose hearing for the whispered voice is apparently normal. The defect may appear as early as a month after infection, and is found with about the same frequency in the later stages of the disease. Once established it is permanent, and is very little influenced by anti-syphilitic treatment. Cases of endo-cranial syphilis are most affected. In spite of the apparently normal hearing, the loss of bone conduction is accompanied in many cases by other signs, such as a lowering of the upper tone limit and shortening of air conduction.

The author's investigations show that the shortening of bone conduction is not due to an increase of the tension of the cerebro-spinal fluid, but that it does show a definite relationship to pathological changes in the cellular and chemical constituents of the fluid. It is therefore probable that it is due to inflammatory changes set up by the syphilitic toxin in the cochlear nerve or its endings in the labyrinth.

THOMAS GUTHRIE.

Ear

Clinical Observations directed to elucidating the Question of Syphilitic Neuro-Labyrinthitis. R. LUND. (*Acta Oto-Laryngologica*, Vol. iii., fasc. 4.)

A number of characteristic cases are related, and among the points upon which the author lays stress is the discrepancy or "Dissociation" sometimes found between the caloric and rotatory reactions. This dissociation showed itself in two-thirds of the author's cases of acquired and three-fourths of his cases of congenital syphilis, and took the form of absence of the caloric with persistence in the same case of the rotatory reaction, or inversely, presence of the caloric and absence of the rotatory. This dissociation is met with so rarely in vestibular affections due to causes other than syphilis, that it is to be regarded almost as "pathognomonic."

Reference is made to the fistula symptom of Hennebert, and the author suggests that when it is present, and is associated with the fistula symptom of Mygind and with a negative Rinne's test, the triad should be called the "Syndrome of Hennebert." This triad is pathognomonic for neuro-labyrinthitis due to congenital syphilis, and each of the three symptoms depends on the same pathological process, namely, a gummatous osteitis in the capsule of the labyrinth about the margin of the fenestra ovalis. THOMAS GUTHRIE.

Contribution to the Pathological Anatomy of Acquired Deaf Mutism. LUDWIG LEDERER. (*Archiv f. Ohren-, Nasen-, u. Kehlkopfheilkunde.* Bd. 108.)

Lederer has studied the temporal bones of four deaf mutes who had repeatedly been examined clinically by Brock:—

CASE I.—G. S., aged 14, had been completely insensible to auditory and vestibular stimuli since the age of three. Changes of the following type were found in the temporal bones; normal drum-heads, new fibrous and osseous tissue in middle ear and labyrinth, ectasia of ductus cochleæ and membranous elements, and pigmentation of the stria vascularis. Degeneration of all neural elements except Scarpa's ganglion and vestibular rootlets, which were little atrophied, though the semi-circular canals were partly filled up and the ampullæ contained bulbous nerve fibres.

CASE II.—K. P. had been a deaf mute since the age of five, both ears having discharged for many years. He died at the age of forty-seven from meningitis secondary to right sinus thrombosis and left cholesteatoma.

The recent septic invasion had evidently been retarded by old-standing fibrous and osseous occlusion of the oval and round windows and basal turn of the cochlea. The organ of Corti and membrana tectoria were rudimentary on one side and destroyed on the other. A fistula of the right semi-circular canal was closed by fibrous tissue.

Abstracts

CASE III.—A. V. had normal speech and hearing until 5 years of age, when an attack of cerebro-spinal meningitis resulted in loss of both faculties. There was no residual hearing; the drums were normal. Whilst attending the Erlangen clinic for multiple sclerosis he died of pneumonia at the age of 27.

Adhesions between stapes and promontory and neuro-epithelial atrophy and distortion of the membranous structures were well marked. There was much fibrous tissue in both scalæ, and an effusion of blood had occurred into the internal meatus and canals for the vestibular rootlets.

CASE IV.—G. R., a deaf-mute since childhood, died of rectal cancer when 45 years old. He was completely deaf and insensible to vestibular stimulation, probably as a result of epidemic meningitis. Histologically, there was filling of the cochleæ with compact bone to a remarkable degree, neuro-epithelial atrophy and degeneration of the acoustic roots.

Lederer attributes the hæmatoma in Case III. to an apoplexy *in articulo mortis*. Denker described a similar hæmorrhage in a congenital case, but here the bleeding extended further into the cochlea. Discussing the genesis of the bony filling of the cochlea, Lederer finds himself at variance with Herzog and Manasse. Manasse's distinction between suppurative otitis interna and periostitis interna ossificans, based on the continuity or otherwise of the new bone with the cochlear capsule, did not seem to hold good in Cases I. and II.

WM. OLIVER LODGE.

Disease of the Otolith Apparatus. ROBERT J. HUNTER, M.D., Philadelphia. (*Journ. Amer. Med. Assoc.*, 6th March 1922, Vol. lxxviii., No. 18.)

The author thinks this is the second case so far reported in literature, the first having been cited by Bárány. The clinical history is fully given, but does not lend itself well to abstracting. The interesting features of the case, Hunter says, are the following:—

- (1) The history of incidence of nystagmus after a blow.
- (2) The significant fact that this had continued for twelve years, and that except in his "favourite position" the nystagmus was constant, and that there has been no vicarious symptom of function such as we find after injury to the semi-circular canals.
- (3) The nystagmus was almost entirely absent in his "favourite position," but reappeared as soon as the head was moved from this plane, no matter how slowly and carefully it was moved. At the same time the past-pointing, which was normal in the "favourite position," became abnormal in other positions.

PERRY GOLDSMITH.

Ear

Temporo-Sphenoidal Abscess. JAMES ADAM, M.A., M.D.
(*Brit. Med. Journ.*, 24th June 1922.)

The points of interest in this case were that the abscess seemed to be double, a second abscess being evacuated by probing the day after the first was evacuated, and that no localising symptoms appeared till very late.

The case is compared with another under the author's care in which there was very marked aphasia, but in which, at the mastoid operation, the tegmen and the dura appeared so healthy that the brain was not explored. The symptoms disappeared gradually without intra-cranial operation, and the case was presumed to be one of subdural hæmorrhage.

T. RITCHIE RODGER.

The Diagnosis of Brain Tumours by the Bárány Tests: Reports of Cases proved by Operation or Necropsy. LEWIS FISHER, M.D., Philadelphia, U.S.A. (*Jour. Amer. Med. Assoc.*, 20th March 1922, Vol. lxxviii. No, 20.)

This paper calls attention to and emphasises the value of a complete ear examination as an aid to the neurologist and brain surgeon. Examination of a large number of brain cases over a period of many years has shown that lesions in certain positions produce a definite group of reactions to stimulation. Tumours in the cerebello-pontile angle give the most constant results, and in many cases this is the only means of accurate localisation. Fisher states that a tumour in this situation may be diagnosed by the Bárány tests years before any definite clinical symptoms appear.

The typical picture is as follows:—There is total deafness, with no response from the horizontal and vertical semi-circular canals on the affected side. On the opposite side the hearing is good, the vertical canal gives no response, while the horizontal canal reacts by nystagmus, vertigo, and past-pointing.

In tumours of the posterior fossa, the vertigo and past-pointing are elicited, while the nystagmus is normal or exaggerated.

Pituitary tumours exert their first pressure on the vestibulo-ocular tracts. Examination reveals an exaggerated nystagmus, but normal vertigo and past-pointing.

PERRY GOLDSMITH.