

result. Operative treatment was again carried out, only to be followed by another relapse. Aware of the happy results experienced by Dr. Frèche in the treatment of cutaneous papillomata by the internal administration of calcined magnesia, the author was induced to try the method: 5 grm. were administered daily; at the end of a fortnight there was a manifest improvement. Treatment was suspended for fourteen days, after which time a dose of 0.50 gr. was continued for four months. The papillomata gradually disappeared; the largest underwent thinning of their pedicles, withered, and were expectorated. Details of a second case, attended with a like result, are recorded. A third case, not published, was that of a child suffering from laryngeal and tracheal papillomata, under the care of M. Sargnon, to whom it had been sent for laryngostomy. Before operating on the larynx M. Sargnon endeavoured to clear the trachea; removal was carried out endoscopically twice a week for some months, but recurrence always ensued. At the writer's suggestion calcined magnesia was given internally and the growths were dusted with the same material. A very notable improvement resulted.

The author remarks that though the results of treatment in these cases may have been coincidental, he is inclined to take the contrary view, the more so as in veterinary practice, where papillomata are so common in the buccal cavity of the dog, calcined magnesia is the remedy.

H. Clayton Fox.

EAR.

Shambaugh, G. E.—The Physiology of Tone-perception. "Ann. of Otol., Rhinol., and Laryngol.," vol. xix, No. 4, p. 983.

An able paper in support of the author's contention that the membrana tectoria is the chief factor in tone-perception. His interest in the question was aroused by certain anatomical conditions which convinced him that Helmholtz's basilar membrane theory is untenable. The study of the problem of tone-perception should be based upon anatomical investigation, since it is one which can be approached only indirectly and does not permit of actual demonstration. Theories have been worked out hitherto independent largely of anatomical considerations. Shambaugh points out the close structural analogies between the macula acustica of the utricle and saccule with its otolith membrane, the crista acustica of the ampullæ with its copula, and the organ of Corti of the cochlea with its membrana tectoria. The close structural analogy of these end-organs suggests that they react to stimuli in much the same manner. Helmholtz's theory is reviewed and the following anatomical objections indicated: (1) The fact that the fibres of the membrana basilaris are interwoven like those of a flat tendon. (2) The fibres are so embedded between cellular layers above and below that it is not easy to see how they can be acted upon by impulses in the labyrinthine fluids. (3) The fibres become thicker and less tense towards the lower end of the basal coil, instead of thinner and tenser. (4) A blood-vessel is attached to the under-surface of the basilar membrane throughout its length, which makes any response to impulse the same at all times impossible. This alone is sufficient to render the theory untenable. On the other hand, the hair-cells are normally in actual contact with the membrana tectoria.

The latter consists of an immense number of delicate fibrillæ imbedded in a gelatinous matrix, which makes it eminently suitable for response to impulses passing through the endo-lymph. It varies in size, being smaller toward the lower end of the basal coil and becoming gradually larger toward the apex of the cochlea. As regards the probable action of the membrana tectoria three possible modes suggest themselves, two of which fail to account for the existence of "tone-islands" or for the occurrence of circumscribed degenerations in the organ of Corti as a result of over-stimulation by certain tones. The third suggestion is that the membrane responds to sound-waves by circumscribed areas being thrown into vibration in different parts of the cochlea for tones of varying pitch. This fulfils all necessities as regards tone-analysis, "tone-islands," etc. The following conclusions, therefore, seem quite clear: (1) That the tectorial membrane is the structure in the cochlea which, by responding to the impulse of sound-waves in the endo-lymph, brings about a stimulation of the hair-cells of Corti's organ. (2) That circumscribed areas in this membrane respond in different parts of the cochlea for tones of varying pitch, the high tones in the basal coil, the lower tones in the upper coils of the cochlea.

The paper really requires reading in its entirety.

Macleod Yearsley.

Guggenheim, L. K.—The Anatomic Explanation of Vestibular Nystagmus. "Ann. of Otol., Rhinol., and Laryngol.," vol. xix, No. 4, p. 1024.

The author describes a series of photographs of specimens showing the relations of the vestibular apparatus and the endings of the vestibular nerve in the labyrinth. The paper is a useful summary of the question, but contains nothing new.

Macleod Yearsley.

Froeschels.—Review of Recent Literature on Otosclerosis. "Zentralb. f. Ohrenheilk.," March, 1911.

The recent literature has had the effect in the main of demonstrating that many of the previously accepted views on otosclerosis must be given up.

Clinical.—The disease is generally one of young people, not infrequently is a family affection, and especially attacks females. Its symptoms are increasing deafness and nearly without exception loud subjective noises. Generally both ears are affected but rarely at the same time. No evidence in typical cases of catarrhal changes; frequently there is a reddish reflex in the lower part of the membrane. No evidence of Eustachian catarrh. Rinne negative, lengthened bone-perception, positive Gellé, restriction of lower tone-limit. Weber to the deafer side. Later the tests alter to those of labyrinth type, with giddiness.

Pathological.—Bony fixation of the footplate of the stapes: in the majority of cases investigated, bony new formations on the promontory, and according to certain authors, also in the rest of the petrous. Nerve-degenerations have frequently been observed. Politzer considers the new bone as sclerosed, Siebenmann as spongy. Habermann views the tympanic mucosa as the starting-point of the proliferating process, while Politzer, Siebenmann, and many others consider the mucous membrane as healthy.

In many cases of otosclerosis the condition remains stationary while the method of life is hygienic, and gets worse with all forms of excess and

frequently during the puerperium. Therapeutics are almost helpless. Paracusis is often a symptom.

Etiology.—This remains absolutely undiscovered. In some countries the distinction between otosclerosis and the catarrhal processes is still not clearly defined. Lucae, Habermann, and Denker do not agree with this separation. Politzer, Siebenmann and others, on the other hand, consider the process as primarily in the bone, quite independently of the mucosa, but later affecting it. Alexander, Bruehl, and Siebenmann believe that the condition is congenitally determined. Habermann considers syphilis an important element in the causation. Hammerschlag illustrates the hereditary factor by the case of two families in which deaf-mutes and otosclerotics occurred, and advances the following points: that the degenerative processes in nerve-endings and nerves which occur in congenital deafness are probably exactly the same as those of otosclerosis; that the bone changes of otosclerosis are also found in many cases of congenital deafness; that families occur in which hereditary deafness and otosclerosis are associated. He seeks to connect the pure nerve-deafnesses with otosclerosis and the hereditary nerve-degenerations. Manasse, in fifteen cases of otosclerosis, found typical bone-formation in only three, while all showed degenerative changes in nerve. Bruehl¹ holds that the following classes must be distinguished, viz. labyrinth atrophy without bone changes, labyrinth atrophy with rarefaction of bone or fixation of the stapes, beginning as a nerve-deafness; isolated fixation of the stapes, appearing as a middle-ear deafness; fixation of the stapes with labyrinthine deafness, showing mixed symptoms. The results of the Wassermann reaction in otosclerotics have differed widely with different observers.

Froeschels has devised two tests of rather doubtful value depending on a diminution which is said to occur in the sensibility of the external meatus in otosclerotics.

Ernest West.

Alexander, Prof. G. (translation by G. L. Richards).—On the Possible Effect upon the Auditory Labyrinth of the Ehrlich-Hata Remedy in the Treatment of Syphilis. “Boston Med. and Surg. Journ.,” March 9, 1911, p. 33).

The author has been collecting material for a study of syphilitic diseases of the ear for six years, and, referring to three cases recently reported by Professor Finger, he points out that it is most necessary to determine early whether in some cases we have not to do with the poisonous action of arsenobenzol on the auditory nerve. He was asked by Finger whether he had seen cases similar to those occurring after the injection of “606” before the introduction of that remedy. To this inquiry Alexander replies from a study of his material, which consists of sixty-eight cases, and he gives it as his opinion that Finger’s cases must be considered as having an ætiological relation to the arsenobenzol. He then gives in detail one case (out of seventy-two treated with “606”) in which the ear condition due to the disease was made much worse by the injection, given at a time when the left auditory nerve was acutely diseased. In Alexander’s opinion existing disease of the vestibular nerve presented *a point of weakened resistance to the action of the arsenobenzol*. He thinks, from experiments made with arsacetin, that there is danger of making the condition worse in every case in which at the time of the arsenobenzol injection there is already present disease of the auditory nerve, whether

¹ See JOURNAL OF LARYNGOLOGY, RHINOLOGY, AND OTOTOLOGY, June, 1911, p. 294.

syphilitic or otherwise, and he cites Ehrlich's production, by injecting white mice with arsacetin, a phenomena similar to those of the Japanese dancing mouse, and due to degeneration of the central fibres of the vestibular nerve. Finally, Alexander, speaking as an otologist, recommends caution in using "606" in cases of acute syphilitic disease of the auditory nerve, and especially in cases of recent syphilis with acute or chronic disease of the auditory nerve, syphilitic or not. Cases of chronic syphilitic affection of the nerve and of chronic labyrinthine dizziness, on the other hand, appear to benefit by the injection.

Macleod Yearsley.

Reik, H. O.—The Effect of Tobacco on the Ear and Upper Respiratory Tract. "Boston Med. and Surg. Journ.," June 23, 1910.

The author begins with a strong indictment of the grossly exaggerated and sometimes even false statements often made as to the evil effects of tobacco and alcohol, and remarks upon the remarkable scarcity of trustworthy literature upon the subject of tobacco and the ear. Enters into the preparation of tobacco and the analysis of tobacco smoke, the weight of evidence going to show that the volume of carbon monoxide contained in tobacco smoke is much more dangerous than the small trace to be found of nicotine.

No characteristic lesion of the throat or nose attributable to tobacco has yet been described, nor is there any evidence that smoking causes malignant disease of the throat.

The author can find only one definite case of anosmia reported as due to tobacco, and he considers Wyatt Wingrave's testimony as to tobacco deafness incomplete and inconclusive. Other literature on this point is reviewed.

A good bibliography is appended.

Macleod Yearsley.

MISCELLANEOUS.

Arrowsmith, H.—Certain Aspects of Rhino-laryngology and their Relation to General Medicine. "New York Med. Journ.," December 17, 1910, p. 1209.

The author discusses the treatment of impacted foreign bodies, Vincent's angina, and the faucial tonsils, and makes the following propositions concerning the latter: (1) Pure hypertrophy of the faucial tonsil is essentially a phenomenon of early life, and is rather protective than pathological. (2) Its cause is very often disease of the pharyngeal tonsil. (3) That a moderate pure hypertrophy, up to the age of puberty, should be respected. (4) When hypertrophy demands interference, the only justifiable operation is amygdalotomy, and not enucleation. (5) Enucleation is justified when disturbances in the tonsillar structure are the source of glandular involvements and a menace to the general health. (6) After puberty, pathological processes in the tonsil demand radical surgical measures.

Macleod Yearsley.

- (1) **Bryant, W. Sohier.—Reflexes and Reflex Neuroses from the Upper Air-tract (including the Nose and Pharynx).**
- (2) **Page, J. R.—Reflex Disturbances Referable to the Ear.** "Boston Med. and Surg. Journ.," February 2, 1911, pp. 144-149.

The two articles form part of a series of papers upon reflex disturbances.