

## E A R.

**Beauregard, H., and Dupuy, E.**—*On the Electrical Variation (Current of Action) caused in the Auditory Nerve by Sound.* "Archiv. Internat. Laryngol., Rhinol., Otol.," July-Aug., 1896.

FROGS and guinea-pigs were employed, non-polarizable electrodes being placed respectively on the membrana tympani and the distal section of the auditory nerve exposed and cut in its intracranial course. On producing a high note with the whistle, a well-marked current of action was registered by the galvanometer. Fatigue effects are found to be easily produced, but an interval of one minute sufficed for recuperation. In the guinea-pig, low tones produce much less electrical variation than high tones. The authors hope in the future to determine by this method the hearing limits in different animals. They claim that their results prove that analysis of sound is a function of the ear, and that the nerve transmits to the brain the results of the analysis.

*Ernest Waggett.*

**Bezold, Fr.** (Munich).—*On the Present State of the Various Tests for Hearing.* "Arch. of Otol.," July, 1896.

BEZOLD holds that there is no reason to suppose that *noises* any more than musical sounds are heard by means of any other region than the cochlea, and quotes Kreidl's observation that goldfish, which have no cochlea, are perfectly deaf; as also his own, that in bilateral necrosis of the labyrinth total deafness is present.

The *best and most rapid test of hearing* is the human speech, if the consonants are classified as: (1) the deep-like R and V (U); (2) the middle, like the explosives B, K, T; (3) the high, of which S, Sh, and G [soft.—Ed.] are strong, and F weak. He employs the numbers (German) as test words, and, to insure constant intensity, whispers them with the residual air left after a forced expiration. The use of these is found of value in the detection of simulation.

He protests against the prevalent tendency to underrate and reject the *tuning-fork tests by bone conduction*. Even in old age he considers diminution of bone conduction to have the same clinical significance as at other periods of life. For testing bone conduction he excludes very high and very low forks, and uses only A,  $a^1$ , and occasionally  $a$ . The B C for  $a^1$  is sometimes shortened or lost, while for A it is lengthened, as in some cases of sclerosis. He practises *Weber's test* with the  $a^1$  fork as most accurate in acute exudative processes in the middle ear; and he considers it a very serious sign if in suppurative inflammation, while the fork is not heard by air conduction, the lateralization of the sound in the affected ear ceases after having been present, this indicating extension of the suppurative process to the internal ear. The same fork ( $a^1$ ) is used for *Rinné's test*, and by preference a specimen which, after dying away on the mastoid, still vibrates for thirty seconds before a normal ear. He warns against dependence on this test in unilateral affections. Even slight degrees of ankylosis of the stapes on one side may be detected in the presence of an extreme degree on the other by means of this test, in spite of the hearing for speech being normal, or nearly so. [We should advise great caution in interpreting such a result, unless the influence of increased bone conduction on the most affected side were excluded or discounted.—D. G.] In exudative and swollen conditions Rinné is always [?] positive though shortened. [Not "always," but, at most, "often."—D. G.]

The changes in hearing power under various tests in cases of obvious fixation of the conducting apparatus establish a clinical picture which, when found in cases

with normal-looking tympani, justify a diagnosis of a deep-seated fixation—ankylosis of the stapes. This has been confirmed by *post-mortem* examination, and the clinical picture is the following: diminution or loss of hearing for the lowest notes in the tone-scale, simultaneous elongation of B C for the lower tones, a much shortened positive Rinné [mistranslated as “well-marked positive Rinné”—D. G.] if hearing is comparatively good, or a negative Rinné if it is very bad, always supposing that the opposite is not nearly normal, and that there is no deception. The *graphic method* of representing percentages of hearing power by air conduction for tuning-forks to the number of nine or ten and covering eight or nine octaves is highly commended, especially in diseases of the inner ear. He thinks too much weight has been attached to a loss of hearing of the highest pitched notes, and that it is only of significance as a sign of disease of the internal ear when there is at the same time diminution or loss of bone conduction.

The possibility of diagnosing bilateral and unilateral *deafness* as such, as distinguished from relative defect of hearing. Loss of hearing for speech seems to depend on the loss of a certain small portion of the tone-scale. [What this portion is is not made clear in the paper.—D. G.] In *unilateral absolute deafness* there is complete loss of hearing for tuning-forks from  $A_2$  to  $a^1$ , but only partial for those from  $a^2$  to  $f^4$ , it being impossible to exclude the opposite healthy ear in the case of the higher tones. The amount of hearing for these tones, as shown by two cases, was: for  $a^2$ , 0·17 to 0·19; for  $f^3$ , 0·24 to 0·3; for  $c^4$ , 0·4 to 0·47; for  $f^4$ , 0·5 to 0·57 of the normal. A greater amount than this would indicate some degree of hearing power in the supposed “deaf” ear.

[It is regrettable that the translator has here and there allowed some errors to creep into his generally excellent rendering of the original paper. Thus: p. 275, second last line, there should be “U” (or Oo) instead of “V”; p. 277, last line, should be “inner ear” instead of “middle ear”; p. 278, line 19, should be “we may find,” instead of “we find”; p. 278, lines 37 and 38, should be “the diagnosis of slight degrees of ankylosis of the stapes *on one side in the presence of pronounced sclerosis on the other.*” instead of “the diagnosis of slight degrees of ankylosis of the stapes in pronounced unilateral sclerosis”; p. 279, line 4, should read “often” instead of “always”; p. 281, line 7, should read “low” instead of “high.” It will be seen that many of these express the opposite of Prof. Bezold’s views, and, we are sure, also of the translator’s views. No doubt circumstances interfered with the thoughtful revision of the translation, some of the statements in which could not but astound the experienced otologist, and oblige him to seek for their explanation in the original.—D. G.]

*Dundas Grant.*

**Cartaz, A.**—*Facial Paralysis of Otitic Origin.* “Arch. Internat. Laryng., Rhin., et Otol.,” July-Aug., 1896.

FACIAL paralysis, associated with acute or subacute middle-ear catarrh, may have its immediate cause either in compression of the nerve in the second part of the aqueductus Fallopii—the bony wall of which is frequently incomplete—or in actual inflammation of the nerve or its sheath. Paralysis from neuritis, secondary to the tympanic inflammation, is doubtless the more frequent occurrence; but cases do occur in which simple compression appears to be the sole cause. To the latter class must belong the case described by Grüber, in which the paralysis disappeared forty-eight hours after paracentesis. The author relates two cases illustrative of either class respectively. In a young man an acute catarrh of the right ear, due to exposure while suffering with sore throat, became complicated on the third day with well-marked right facial paralysis.

Paracentesis was performed on the bulging drumhead and serous fluid let out. On the following day the paralysis had almost entirely disappeared. The rapid onset, and especially the rapid recovery, point to simple compression as the cause of the paralysis. In the second case—that of a girl of seventeen—an attack of influenza was complicated with acute earache, followed in forty-eight hours by facial palsy. The air douche and instillation were employed, and pain and deafness were relieved. The facial paralysis, however, proved rebellious; and the function of the nerve was not restored without a prolonged course of electrical treatment. In this case the paralysis was clearly not due to a mere compression of the nerve trunk.

*Ernest Waggett.*

**Colles, C. J.**—*Rupture of the Drumhead of the Ear from Violent Aërial Concussion; with a Report of Two Cases.* “*Amer. Med. Surg. Bulletin,*” Dec. 5, 1896.

AFTER a short paper on rupture of the drumhead from aërial concussion the author reports the following cases:—

During the testing of a new gun on September 28th, 1895, a premature explosion took place, producing a pressure estimated at six thousand to seven thousand pounds to the square inch. Two men standing on the gun platform were killed, and four others standing to the right and rear of the platform were hurled to the ground. Two of these sustained injuries to the ear.

Case 1.—Lieutenant G. M. No history of previous ear trouble; deafened by the terrific report; could not hear at all for some time; no pain, but considerable tinnitus. A few hours later the right meatus was found full of blood; membrane covered with clot; ordinary voice heard at three feet; watch not at all; left membrane slightly congested.

Right ear gently syringed, Politzer bag used, and meatus dried and closed with cotton-wool. A large portion of the anterior and inferior segments of drum-head had been blown out; the tip of manubrium projected into opening. Parts remained perfectly dry; no pain, but considerable tinnitus. Perforation steadily healed, and was completely closed by December 1st. Hearing also improved, till watch could be heard at seven feet. Tinnitus continued. This may have been partly accounted for by the fact that patient was cutting a wisdom tooth on same side. At last report hearing is as good as ever; slight, but not annoying, tinnitus continues, wisdom tooth being nearly through. Ear is sensitive and very susceptible to shock. General condition excellent throughout.

Case 2.—Private P. R. No history of previous ear trouble. Blown down backwards, bled from nose, and heard violent hammering noise in ears. After a few moments could hear, but not well, and could “blow through his ears.” Writer did not see this patient till about six months later; during this time treatment had been carried out by Major J. V. R. Hoff. Both drumheads were destroyed by the explosion. When seen by author there was no tinnitus, no vertigo; left ear discharged profusely, while discharge from right had ceased.

The right membrane showed a small perforation in upper posterior segment. Parts dry. In left drumhead was a large loss of substance in lower half; malleus not distinguishable; edges of perforation red and granulating. Canal full of pus. Bone conduction better than aërial. Watch heard at three inches; ordinary voice understood at about ten feet in both ears. Right ear healed, and at last report perforation in left had almost closed, and discharge had ceased. Hearing for ordinary voice improved to about fifteen feet. He feels well in every way.

*A. J. Hutchison*

**Cozzolino, Vincenzo, Prof.**—*Pseudo-Meningo-Cerebral or Meningeal Symptoms in Acute Exudative Middle-Ear Inflammation, occurring in Early Childhood, etc.* "Bollet. delle Malatt. dell' Orecchio, etc.," Guglio, 1896.

IN referring to an earlier publication of his,<sup>1</sup> the author reviews in detail and compares his own clinical observations with those of Rasch, published in the "Jahrbuch für Kinderheilk.," April, 1894. The latter came to the conclusion that the train of symptoms arising from acute exudations in the middle ear in young infants, is generally mistaken for cases of meningitis. This would readily account for the reported cases of recovery from the latter disease. Cozzolino further dwells upon the necessity of a closer attention on part of physicians, especially of pediatricians, to otoscopic examinations and aural pathology in cases of pyæmic "exotitide." This is of major importance, inasmuch as the general symptoms are less marked and of shorter duration than those presented by adults. Again, some of the symptoms, such as stasis of the optic pupilla, optic neuritis, etc., are wanting in the similar cases occurring in infancy. *Jefferson Bettman.*

**Dench, E. B.**—*The Treatment of Otorrhœa and its importance.* "Amer. Med. Surg. Bulletin," Nov. 14th, 1896.

THIS is a paper, read to general practitioners, dealing with the diagnosis and treatment of the various kinds of otorrhœa. The following few points may be referred to:—In treatment, the author objects to the use of strips of gauze to secure drainage, but recommends syringing with a one in three thousand or one in five thousand solution of perchloride of mercury. Peroxide of hydrogen is condemned. The author evidently doubts its germicidal properties, and thinks that, on account of the sudden evolution of gas that takes place when it is mixed with pus, its use in the ear is not free from danger. Further, its protracted use irritates the meatus. After syringing, a few drops of an alcoholic solution of perchloride of mercury are to be left in the ear. "Under no circumstances is the canal to be occluded with "cotton," and "powders should not be introduced into the canal to check an "otorrhœa." *A. J. Hutchison.*

**Fridenberg (New York).**—*Latent Mastoid Disease.* "Med. News," Oct. 24, 1896.

IN a paper read before the Fifth District Branch of the New York State Medical Association, the author draws attention to the frequency of cases of latent mastoid disease, where the symptoms have either been so slight, or even absent, that no suspicion of the very considerable mischief existing in the mastoid has been entertained, although carious destruction may have been going on for months or even years. He read the notes of several cases which had come under his observation as instances of this. In one instance where he removed a cholesteatomatous mass from a cavity in a sclerosed left mastoid, which appeared to have some connection with the semicircular canals, the patient had suffered from marked vertigo on any quick movement, the vertigo being from right to left. This persisted for two months after the operation, but then disappeared. *St George Reid.*

**Fruitnight, Henry (New York).**—*The Importance of Early Diagnosis and Treatment of Inflammation of the Middle Ear.* "Med. News," Sept. 12, 1896.

THE author refers to the danger of allowing a purulent discharge of the ear to go unchecked. He states that in a recent epidemic of measles in New York five per cent. of the cases suffered from middle-ear mischief, but by treating this in

<sup>1</sup>"Anatomo-Patholog. and Bacteriological Examinations of the Nasal, Naso-Pharyngeal, and Tympanic Cavities of New-Born and Young Infants," *Idem*, May, 1896.

time not a single case was left uncured. He approves of the application of an alcoholic solution of boracic acid after the ear has been thoroughly cleansed ; in his experience the insufflation of powders has acted prejudicially, interfering with the cleanliness and increasing the pain. He relieves the pain in the early stages by the instillation of three or four drops of a five per cent. solution of cocaine.

*St George Reid.*

**Hengst.**—*Acute Median Otitis, complicating Typhoid Fever.* “Pratique Méd.,” Aug. 12, 1896.

IN order to gather statistics on this subject the author sent circulars to a number of medical men, asking the following questions :—

1. How many cases of typhoid fever have you treated ?
2. In how many of these has otitis media occurred as a complication ?
3. At what period in the fever ?
4. Was the mastoid affected ?
5. Result of the otitis : have the auditory troubles been cured ?
6. Have large doses of quinine been used ?

The total number of cases placed at his disposal was one thousand two hundred and twenty-eight ; and in seventy-eight of these there had been purulent otitis media. Cases of earache, lasting for a short time, with slight deafness for several days, were left out of account. The otitis set in between the end of the second and the fourth week. At this stage the patient is generally semi-comatose, the circulation is feeble, and the naso-pharynx is filled with thick mucus which he is unable to expel. The Eustachian tube is full of this, and the otitis is a result. To the fourth question only negative replies were received. One of the author's own cases, however, had acute mastoiditis. As to prognosis, all the replies were favourable. The question as to quinine was asked because of the congestion of the middle and internal ear it is known to produce when taken in large doses. The majority of the replies were negative. One correspondent, who had seen one hundred and seventy-five cases of typhoid, five of which were complicated with otitis, reported that he usually gave large doses of quinine during the hyperpyrexia. Others stated that they used the drug as a tonic, in doses that were too small to affect the hearing. The author afterwards discusses the causes, symptoms, and treatment of this complication.

**Hogg, G. H.** (Tasmania),—*Sarcoma of the Base of the Skull, involving the Ear.* “Australasian Med. Gaz.,” July 20, 1896.

A BOY, aged four and a half years, was brought to the author on account of an inequality of the pupils, which had been noticed for about a fortnight. The left pupil was contracted, and reacted neither to light nor accommodation. It could be fully dilated with homatropine ; vision was good ; otherwise the child was well, with the exception of occasional listlessness. A doubtful history of earache without discharge was elicited, but on which side was not known.

Sixteen days later there was fully developed facial paralysis. He had vomited a little two or three times after food. No headache was complained of, and the general health was good. Examination of the ears revealed nothing abnormal ; with the ophthalmoscope commencing optic neuritis was detected. The skull was now trephined and the cerebellum explored, but nothing was found.

A month after the operation there was slight bulging through the operation wound, which had quite healed ; and in the left eye a good deal of conjunctivitis. A few days later a corneal ulcer formed and vomiting again set in. These indications of intracranial pressure gradually increased.

About three weeks later the left mastoid was opened on account of tenderness

over it, and a polypus was removed from the left ear. For some days he seemed to improve; then he gradually grew worse, became comatose, and died within a fortnight after the last operation.

The *post-mortem* examination revealed an extensive growth at the base of the brain. It seemed to have sprung originally from the body of the sphenoid. It had invaded the basillar process of the occipital bone, and the apex of the petrous portion of the left temporal bone, through the latter gaining access to the tympanum. The bones affected were soft, and the surface of the pons was adherent to the mass. The tumour proved to be a round-celled sarcoma. *A. B. Kelly.*

**Love, J. Kerr.**—*Exploration of the Mastoid Process. Case of Sigmoid Sinus Thrombosis—Recovery.* "Glasgow Med. Journ.," Sept., 1896.

THE author considers the hammer and chisel rapid but not safe; the burr much safer, but very slow. In searching for the antrum he first (*i.e.*, after reflecting periosteum) uses an instrument like a joiner's brog, with shoulders fixed on the stem. The instrument is made in different sizes, the distance from point to shoulder increasing one eighth of an inch with each size. With this instrument the antrum is usually found in two or three minutes. Thereupon the burr should be used. "The first perforation should be made in the line of the attachment " of the auricle, about half an inch above the external border of the external " meatus. The antrum may generally be found at a lower level than this, but the " subsequent drilling towards the tympanic cavity is more difficult."

M. M., aged nineteen, otitis media purulenta of eight weeks' duration. A fortnight before admission to Royal Infirmary the discharge had lessened or stopped; swelling and pain over mastoid came on. On admission, 9th January, the mastoid swelling was at once incised; on 17th the antrum was opened and formed into one cavity with attic and tympanum. Later on albumen, blood, and granular casts appeared in the urine, still later came optic neuritis, sluggish and dilated pupils, epigastric pain, vomiting, diarrhoea, motor symptoms, etc. On 31st January the sigmoid sinus was opened; blood flowed very lazily from it, but as the tissues round about were healthy it was not further interfered with. The temporal region was then trephined and dura opened, but nothing abnormal found. The wounds healed well, the motor symptoms at once disappeared, and the fever, etc., gradually passed off. It appeared that the use of iodoform in the dressing of this case had an unfavourable effect on the temperature. *A. J. Hutchison.*

**Ridley, Walter.**—*Operation for Lateral Sinus Thrombosis.* "Brit. Med. Journ.," Nov. 21, 1896.

THE report of a case occurring in a young man with mastoid disease, in which recovery followed the removal of a fetid purulent clot from the jugular vein throughout its course in the neck, and the draining of a subdural abscess.

*Ernest Waggett.*

**Rimini, E.**—*A Case of Pyæmia due to Otitis Media Acuta. Paper read before the Trieste Medical Society, March 24, 1896.* "Bollet. delle Malatt. dell' Orecch.," Settembre, 1896.

THE author, in presenting a case occurring in a child of seven years, dwells upon the rarity of pyæmic infection complicating acute middle ear affections. In reviewing the entire literature, he is but able to collect sixty similar cases. Naturally, in this category, he excludes all instances of pyæmia due to or arising during the course of chronic suppuration of the middle ear. In the case above mentioned, notwithstanding trephining of and removal of several thrombi from the transverse



sinus, consecutive pyæmic abscesses of the left femoral-iliac articulation, and an intervening attack of icterus, complete recovery followed after three months.

*Jefferson Bettman.*

**Somers, L. S.**—*Aural Herpes.* "Amer. Med. Surg. Bull.," Oct. 31st, 1896.

AFTER some remarks on this condition, the author quotes the following case:—

S. A., male, aged sixteen. After exposure to cold had an attack of acute coryza, with considerable prostration, fever, and a peculiar burning, stinging pain in right ear. The neuralgic pain continued for three or four days, then there appeared an eruption of from twelve to fourteen small vesicles filled with turbid fluid, covering an area of about 10 millimètres square, just inside the meatus. At this time the constitutional disturbance had passed off, all except the pain. Under the use of laxatives and the local application of yellow oxide of mercury in lanoline, the pain quickly passed off and the eruption faded away.

The patient had never suffered from any affection of the ear before, nor from herpes labialis.

Treatment must be constitutional and local.

The first consists of salines, regulation of diet, antipyretics, etc. Locally, before the appearance of the vesicles, the pain may be mitigated by the use of cold (ice water, or lead and laudanum lotion); when the vesicles have appeared, every effort must be made to prevent rupture. When the condition recurs, counter irritation should be applied to the affected nerves.

*A. J. Hutchison.*

**Walker, Secher.**—*Cerebellar Abscess complicating Mastoid Disease.* "Brit. Med. Journ.," Nov. 21, 1896.

A REPORT of a case in which cure resulted after draining of an abscess in the left lateral lobe of the cerebellum, occurring in a boy of fourteen with mastoid disease. The author believes this to be the eleventh successful case recorded.

*Ernest Waggett.*

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## Correspondence.

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*To the Editor of the OTOLOGICAL DEPARTMENT of the JOURNAL OF LARYNGOLOGY.*

SIR,—I was much interested in your abstract in the JOURNAL OF LARYNGOLOGY for February, 1896, p. 70, of an article by Dr. Lannois, of Lyons. The case reported was one in which there had been found a rupture of the membrana tympani after hanging. The opinions of several authorities as to the probable cause of this condition were cited, and the conclusion was reached that the proper explanation had not yet been made.

The theory ascribed to Zaufal, viz., sudden increase of the intratympanic air pressure caused by the forcible propulsion of air through the Eustachian tubes by the violent upward protrusion of the tongue, seems, indeed, most improbable, and for the reason given, *i.e.*, the necessary escape of such air pressure through the nostrils.

As a more rational explanation of this condition I would suggest the following as the probable cause:—