ABSTRACTS

EAR.

Die Funktion des Musculus stapedius beim Menschen. II. Mitteilung: Reflexauslösung durch Knochenleitung, Ermüdung und Erholung des Reflexes. (The Function of the Stapedial Muscle in Man. II. Part: Reflex through Bone Conduction, Fatigue and Recovery of the Reflex.) E. LÜSCHER. (*Zeitschr. f. Hals-, Nasen- und Ohrenheilk.*, 1930, Vol. xxv., pp. 462-78.)

In continuation of previous research the movements of the stapedial tendon were directly observed by the author's "ear microscope" in another suitable case with perforated drum. The results published in the first article could be confirmed in all points. The cochlear reflex appeared in this individual between 650 and 12,000 vibrations. It was brought about by the ordinary conversation voice at a distance of 20 cm. from the concha and at the same distance by Bárány's noise machine. The reflex appeared also in bone conduction, if the sound was of sufficient intensity. This is new evidence that the reflex is of cochlear origin. Vibratory rhythmic stimulations of sensory nerves did not bring it. The stapedial reflex could be fatigued by continuous sounds and "reflex-deafness" came at the longest after 1-1½ minute. The time, till the reflex relaxes, depends on the height of the tone and is longer with higher tones than with low sounds. The fatigue only concerns the "fatigue tone." Towards all other tones it holds itself as if it were before "at rest." Recovery of the excitability of the reflex takes a few minutes. When one attempts to explain the manifestations of fatigue and recovery there seems to be a conformity between reflex fatigue and fatigue of the perception of sounds. It seems as if both were based on one common fundamental process, which is to be sought in the so-called "Umstimmung" (alteration of excitability) of v. Kries through excitation of the perceptive organ itself. This latter does steer the excitation of the perceptive organ and does protect it from too strong excitation. Therefore one comes to the conclusion that there are two principal different regulating mechanisms, which are combined together. One, a nervous-muscular apparatus, represented by the stapedial reflex, reacts momentarily and regulates sound-conduction. The other, which changes the excitability of the perceptive apparatus, needs some time for full development and steers the process of excitation itself. The first protects the ear until the second fully develops. Fatigue and damage should not be identified one with another, as they are rather contrary to each other. Fatigue is concerned with the sensory part of the reflex arc. The very easy excitation of the reflex by noises is comprehended as "summation"

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of stimulus. The paths of the reflex cannot be exactly stated, and least of all the central part. Probably it is usually a subcortical reflex, although it may be in some cases influenced by cortical processes. The reflex shows in the same manner as the perception of sounds the specific biological action of different sound-heights, furthermore analysis of tones and finally fatigue. It is fair to assume that these common properties of perception of tones and reflex action are due to processes in one and the same place, whereby the organ of Corti comes first into consideration. AUTHOR'S ABSTRACT.

Ueber das Vorkommen kleiner, trockener Defekte ("Foramina Rivini") in der Pars flaccida. (The Occurrence of Small Dry Perforations in the Membrana Shrapnelli.) E. LÜSCHER. (*Zeitschr. f. Hals-, Nasen- und Ohrenheilk.*, 1929, Vol. xxv., pp. 129-136.)

Author could show in the living with the aid of the aural microscope that apparent small perforations in the membrana Shrapnelli always were fine atrophies. An open perforation was never found. Atrophy and perforation can be differentiated one from another only by strong enlargement. AUTHOR'S ABSTRACT.

The Theory of Experimental Otosclerosis. M. WEBER (San Francisco). (*Zeitschrift für Hals-, Nasen- und Ohrenheilkunde*, Band xxvi., Heft 1, p. 62.)

Weber considers the microscopical changes in otosclerosis identical with those of osteo-dystrophia fibrosa. For its experimental production the animal ought still to have cartilage residua and, therefore, should either be very young or have been subjected to some such operation as extirpation of the thyroid body. There must also be some special chronic local irritation such as would be supplied by the absorption of the decomposition of the cartilage residua or by Wittmaack's passive congestion ("Stauung") operation. It might be possible for other disturbances of metabolism to lead to the materialisation of an otosclerosis. JAMES DUNDAS-GRANT.

Hæmatogenous Circumscribed Labyrinthitis. K. SCHRÖDER (Leipzig). (*Zeitschrift für Hals-, Nasen- und Ohrenheilkunde*, Band xxvi., Heft 1, p. 8.)

The case narrated is a most curious one. The patient had typical symptoms of meningitis, paralysis of the right half of the body, and left facial paralysis. There was considerable dulness of the left ear and nystagmus to both sides. A labyrinth operation was performed on the left side and a large subdural collection of pus was evacuated. The patient died, and on autopsy the left petrous bone showed merely the normal appearances following a labyrinth operation. There was no

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evidence of tubercle in the middle ear. The right petrous bone, in spite of the absence of any symptoms of affection of the right ear, presented an unexpected condition. In the superior semi-circular canal near the common ending there was a nodular mass almost completely occluding the lumen. The centre of this mass was formed by a small sequestrum of bone in which the Haversian canals could be identified. There was no evidence of tubercle, and its origin was a mystery until it was elicited that three years previously the patient had had a septic infection arising in an abscess in the ball of the thumb, followed by multiple purulent arthritides, phlebitis, endocarditis and myocarditis, though without any labyrinthine symptoms. There was acute tuberculous inflammation of the pia mater and a subdural abscess in the left posterior cranial fossa. The lungs were infiltrated with miliary tuberculosis in every lobe. JAMES DUNDAS-GRANT.

A Comparison of the Functional Tests of the Cochlear and Vestibular Inner Ear during the Course of Acute Tubal Middle-Ear Disturbance. EWART KESTERMANN, Marburg University Clinic. (*Archiv. f. Ohren-, Nasen- und Kehlkopfheilkunde*, 1930, Vol. cxxvi., pp. 1-34.)

The author summarises his conclusions as follows:—

1. It may be said that as a general rule the results of functional examination, if carefully carried out, give valuable and reliable information. Their failure in certain cases is due less to the inadequacy of the method than to the difficulty of determining the cause that would explain the results.

2. In the author's experience, with an acute middle-ear inflammation there may be an almost complete deafness, which is followed by complete recovery of hearing. It is difficult to say how far any therapeutic measures contribute to this result.

3. The most important factor in the recovery of normal hearing capacity is the involution of the mucosal inflammation, especially in the recesses of the windows; for the removal of agglutinated secretion and the prevention of fibrous tissue organisation, repeated use of the air-douche is indicated, when the acute signs have passed off.

The fact that often, even after an interval of months, complete function may be restored, shows the value of inflation.

4. The decisive factor in the recovery of normal hearing capacity is the extent of labyrinthine involvement. Labyrinthine lesions are frequently found after the acute signs have passed off, although there has been no manifest labyrinthine disturbance in the course of the inflammation. Such lesions can often only be detected by the most careful examination with the high forks. These residua would seem to be of little practical importance. F. W. WATKYN-THOMAS.

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Abstracts

Histological Study of a Case of Ménière's Disease. Professsor K. WITTMAACK (Hamburg). (*Internat. Zentralblatt für Ohrenheilkunde und Rhino-Laryngologie*, June 1930.)

Pathological data based on the study of post-mortem specimens of Ménière's disease are scanty. Owing to the wishes of a colleague expressed in his will, Professor Wittmaack became possessed of one of his temporal bones, of which he made serial sections. During life the patient had suffered from very acute paroxysmal aural vertigo, with severe dizziness, impairment of hearing progressing to complete deafness on the affected side, and nystagmus towards the same side. Microscopic examination showed the presence of concretions in the aqueductus cochleæ and a neurofibroma in the scala tympani. The latter would account for the deafness, whilst the former might be responsible for the paroxysmal attacks of vertigo by producing sudden and temporary blocking of the aqueduct. The reporter stated that he had only seen one other specimen of concretions in the ductus cochleæ, and of this the clinical history was not known. It was therefore open to question whether the pathological findings were the cause of the symptoms or whether they were merely coincident.

G. WILKINSON.

Suppurative Otitis Media with Bulging of Shrapnell's Membrane. J. BERBERICH. (*Internat. Zentralblatt für Ohrenheilkunde und Rhino-Laryngologie*, March 1930.)

The writer believes that bulging of the membrana flaccida does not necessarily indicate a shutting off of the epitympanic space from the rest of the tympanic cavity by swelling of the mucous membrane folds in the neighbourhood of the ossicles. He gives the following reasons for this opinion :—

(1) Inflation of the tympanum via the Eustachian tube causes movement outwards of the membrana flaccida.

(2) In post-mortem subjects coloured gelatine solutions, injected into the tympanum, find their way into the epitympanic space and cause bulging of the membrana flaccida.

(3) When inflammatory collections of fluid cause bulging of the membrana flaccida, incision of the anterior inferior quadrant of the tympanic membrane causes collapse of the swelling.

He concludes that bulging of the membrana flaccida is not an absolute indication for opening the mastoid antrum. Some cases yield to simple incision of the membrana tympani.

G. WILKINSON.

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Ear

Quantitative Audiometry with Speech. H. SELL (Berlin). (*Zeitschrift für Hals-, Nasen- und Ohrenheilkunde*, Band xxv., Heft 5.)

The writer considers the measure of hearing for separate pure simple tones as insufficient for the determination of hearing-power for speech. He recommends the use of an apparatus in which the sounds are produced by a gramophone and are modified by means of a microphone of improved form giving 100 per cent. intelligibility of disconnected syllables as against 20 per cent. given by the Post Office telephone. The starting intensity is strong enough for the highest degree of dullness of hearing and it can be diminished by logarithmic decrements by means of resistances. The measurements are made by noting the percentage of syllables understood at the different stages of lowering of the intensity. A curve is thus obtained which in normal persons slopes at first quite slowly downwards till a "critical" point is reached, when the downward curvature is more abrupt. In middle-ear deafness a similar curve is found, with, of course, the intensity required altogether on a higher level. In nerve deafness "there is a much flatter elevation of the intelligibility curve, which never reaches the high values recorded in normal cases or those of middle-ear deafness."

JAMES DUNDAS-GRANT.

Quantitative Hearing Tests for Speech. F. G. KATZ and G. v. SALIS (Berlin). (*Zeitschrift für Hals-, Nasen- und Ohrenheilkunde*, Band xxvi., Heft 1, p. 106.)

This paper gives details as to the application of Sell's apparatus as described by him in the *Zeitschrift* (Band xxv.i, Heft 5, p. 571), abstracted in this *Journal* (p. 819), with curves corresponding to the various forms of deafness. The recognition of spoken syllables (which may be meaningless) gives a better test of hearing for speech than whispered numbers or significant words.

JAMES DUNDAS-GRANT.

Nystagmus following Inflation of the Middle Ear. G. V. TH. BORRIES. (*Monatsschrift für Ohrenheilkunde*, 1930, Vol. vi.)

As a further contribution to this subject the author submits these cases of his own in an article prefaced by a historical survey of the literature on the subject and a short critique on the cases therein quoted; amongst which latter it is rather disconcerting to find a note of no less than four in which a fatal issue followed catheterisation, although indeed the cause of death could not be definitely assigned to such instrumentation.

The communication includes sections under such headings as:— The Inference of Nystagmus thus caused—Alternation of the Direction

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of the Nystagmus—The Meaning of the same and its possible causal relation to functions of the Labyrinth—The Influence of the position of the Head. Other sections also discuss the differential diagnosis between the nystagmus so caused and the fistula symptom.

The sections are summarised in a series of statements, from which the following are selected:—Inflation of the middle ear induces nystagmus and giddiness in some patients. Opinions are divided as to the frequency of the occurrence but, according to the author, in patients with normal labyrinths the phenomena seldom occur. Non-labyrinthine symptoms such as tinnitus, headaches, fainting, hysteria and epileptiform attacks are seldom observed. The manner in which inflation is performed is not so important as the force used. Alteration of the position of the head does not appear to have any obvious effect. The inference as to the "direction" of the nystagmus is a matter which requires further investigation. The decisive condition is a rise of pressure. With a perforated tympanic membrane the phenomenon is absent. The most important factors are abnormalities in connection with the two windows or the labyrinthine wall.

As far as such treatment is concerned in cases of advanced middle-ear disturbance, inflation should be restricted altogether, or only undertaken with very gentle force. ALEX. R. TWEEDIE.

NOSE AND ACCESSORY SINUSES.

The Relations of the Sphenopalatine Ganglion to the Nerves emerging from it. K. VOGEL (Berlin). (*Zeitschrift für Hals-, Nasen- und Ohrenheilkunde*, Band xxv., Heft 5, p. 485.)

From the study of three sets of frontal and sagittal serial sections, which are copiously reproduced in this article, the writer has arrived at some important conclusions, especially with regard to the breaking up in the ganglion, or the passing-through it, of the various strands.

The vidian nerve breaks up completely. The sphenopalatine runs for the most part in front of and laterally to the ganglion to form, with fibres arising from the ganglion, the palatine nerves. A small fraction, however, passes into the ganglion.

The *nervus palatinus major* is formed mainly by fibres originating directly from the superior maxillary division of the fifth without breaking up in the ganglion, only a small posterior portion arising from that body. The smaller portion of the *nervi palatini minores* passes directly through from the superior maxillary, the larger arising in the ganglion.

Ten or twelve nerves arising directly in the ganglion go to the nasal cavities. One of the largest is the nasopalatine nerve of Scarpa

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supplying the septum. All the nasal nerves which go to the postero-superior parts of the nasal cavity, and to the roof of the nasopharynx as well as to the septum, come out of the ganglion. Still the branch for the middle turbinal, which arises from the lowest part of the ganglion, as also the branch for the middle meatus and inferior turbinal, which arises from the lesser palatine nerve bundle, contain in addition to fibres from the ganglion some which come directly from the second division of the fifth. The nasopalatine nerve contains only fibres from the ganglion. (In Cunningham's *Anatomy* it is stated that the nasopalatine nerve occasionally comes off directly from the superior maxillary. J. D.-G.)

Numerous small nerves go to the orbit which come entirely from the ganglion and contain no fibres passing through it from the second division of the fifth.

The vessels which pass through the sphenopalatine fossa to enter the nose receive their nerve supply from the sphenopalatine ganglion and to a slight extent directly from the second division of the fifth. They receive no nerve supply from any other source.

JAMES DUNDAS-GRANT.

Case of Mucocele of the Ethmoid Cells cured by Intranasal Operation. K. TANAKA (Fukuoka). (*Oto-Rhino-Laryngologia*, Vol. iii., No. 9, p. 762.)

A boy, aged 16, complained of transitory double vision, exophthalmos, outward displacement of the eyeball, overflow of tears, lowering of vision, anisocoli and swelling of the left eyelid. Ophthalmological treatment was unavailing, and Tanaka found in the nasal cavity a slight swelling of the left middle turbinal. X-ray examination showed a shadow corresponding to the situation of the ethmoid cells. Opening of the anterior cells gave exit to a quantity of mucoid fluid and the symptoms steadily subsided. JAMES DUNDAS-GRANT.

Persistent Nasal Discharge and Chest Complications in Children due to Infection of the Maxillary Sinuses. J. PARKES FINDLAY. (*The Medical Journal of Australia*, 4th January and 19th July 1930.)

Persistent nasal discharge in children is frequently the precursor of chronic bronchitis or of bronchiectasis. It follows that children suffering from nasal discharge should be treated before infection has passed to the lungs. Adenoids and tonsils should be removed and, if the discharge persists, the sinuses should be investigated. Radiography and transillumination are of little value in diagnosis—lavage of the maxillary sinus is the surest test. It is safer, in children, to puncture the antronasal wall in the middle meatus rather than

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under the lower turbinate or via the canine fossa, and the needle should be directed to the centre of the lower orbital margin, not to the outer canthus. Only a very limited area of maxillary sinus is accessible from the canine fossa, as the unerupted canine and bicuspids occupy the space to within a short distance of the orbital margin.

For this reason also the Caldwell-Luc operation is inadmissible in children.

If puncture-lavage of the antra yields pus or mucopus, it is advisable to drain the cavity by performing intranasal antrotomy. The inferior turbinate is displaced upwards and inwards and a large opening is made in the antronasal wall, as far back as the palate bone. It must be remembered that the floor in the sinus is well above the level of the nasal floor in its anterior part, but as the floor of the sinus extends posteriorly it gradually becomes level with the floor of the nose.

In a table accompanying the paper, details are given of the histories of thirty-six patients, on all of whom this operation was performed, and the results show that in many cases the sinus infection and cough were cured, and in others the long-standing cough was relieved and further lung changes were prevented.

DOUGLAS GUTHRIE.

Regeneration of the Human Maxillary Antral Lining. C. B. GORHAM and J. A. BACHER. (*Archives of Oto-laryngology*, June 1930, Vol. xi., No. 6.)

In this paper a series of cases is described in which a modified Caldwell-Luc operation was performed with the patient under local anæsthesia.

Specimens of the regenerating lining were removed during the post-operative course at two, three and four weeks, and at two, three, four, five and ten months, and were examined microscopically.

When viewed through the nasopharyngoscope, the progress of the regeneration of the antral lining may be seen grossly, and it appears to be completely reformed after from three to five months.

Microscopically the healing occurs first by the organisation of a layer of red cells that lines the antrum. Next a loose type of epithelium grows over the organised tissue, and with it the glands reform. This epithelium gradually changes to a perfect pseudo-stratified ciliated columnar type, and complete regeneration of the epithelium and glands occurs at about five months.

The paper is illustrated by nine microphotographs.

DOUGLAS GUTHRIE.

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Larynx

LARYNX.

Experimental Investigations on the Functions of the Human Laryngeal Muscles. K. M. MENZEL (Vienna). (*Zeitschrift für Hals-, Nasen- und Ohrenheilkunde*, Band xxv., Heft 5, p. 555.)

Novocain having been found to produce (as distinguished from cocain) a temporary motor paralysis, the writer paralysed various laryngeal muscles by injecting it into their substance. The effect was quite transitory and innocuous. He used a Pravaz syringe with a long needle and passed it through Haslinger's directoscope. The fluid was a 2 per cent. solution of novocain with a little adrenalin.

He injected the posterior crico-arytenoid at a point about 3 mm. to the mesial side of the muscular process. After seven minutes the cord was immobile in the cadaveric position. Fifteen minutes later slight abduction began and in forty-five minutes from the time of injection normal mobility was restored. In one case the arytenoid cartilage fell forward.

Injection into the vocal cord to its outer side produced diminished outward as well as curved movement, and diminution of the vocal range (from F-f′ to c-f).

Paralysis of one crico-thyroid caused the singing to be out of tune and flattened. When both were paralysed the voice was lowered as much as an octave, and in one case the glottis was perceptibly widened. These muscles were thus proved to be active tensors of the cords. When the interarytenoid muscles were paralysed the arytenoid cartilages did not approach each other bodily and the mucous membrane between them remained smooth. Nevertheless the vibrating parts of the vocal cords came together. The usual triangular space remained but the voice was very little affected. JAMES DUNDAS-GRANT.

The Prognosis of Tuberculosis of the Larynx: a Research based on the Consideration of two Blood Reactions. H. VIDEBECH. (*Zeitschr. f. Laryngologie, Rhinologie, etc.*, August 1930, Band 19, pp. 472-502.)

The relation between tuberculosis of the lungs and of the larynx is discussed. There are admittedly many gaps in our knowledge and many contradictory observations. In some cases the larynx heals, yet the lung lesion progresses and the patient dies. In others the laryngeal lesion remains stationary, although the general condition improves, as judged by the weight and the clinical examination of the chest.

Among the signs by which one determines whether the patient is improving or not, the author lays special stress on two blood reactions. One is called the "Blutsenkungs-reaktion," a biochemical

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reaction, the other is a blood-picture test which depends on the relative distribution of the leucocytes (Arneth). It is assumed that the reader is familiar with the details of these tests, as they seem to be commonplaces in the general management of phthisis in Danish institutions, but full references are given.

In the article there are pages of statistical tables concerning patients with tuberculosis of the larynx in which these reactions have been studied in relation to the ultimate prognosis. On the whole the blood-picture reaction was found to be the more reliable. Some cases are quoted where both reactions gave wrong information as to the outlook.

Undoubtedly this subject is extremely difficult and complicated. One has a distinct impression that for a long time yet it will be impossible to express prognosis in terms of laboratory figures.

J. A. KEEN.

On the Connection between Laryngeal Polypi and Singers' Nodules. MATSUZAKI (Kochi). (*Oto-Rhino-Laryngologia*, Vol. iii., No. 9, p. 775.)

A male patient, aged 45, complained of hoarseness. He was in good general condition; the Wassermann was negative. A sessile polypus of about 1·5 cm. in length was removed with a cold snare from the nodal point of the right vocal cord. It would appear that a singer's nodule, which started ten years previously through professional misuse of the voice, had developed into the polypus.

JAMES DUNDAS-GRANT.

PHARYNX.

Tonsillomycoses. Sir ALDO CASTELLANI. (*Practitioner*, January 1930.)

The varieties of fungi causing affections of the tonsils are enumerated and illustrated and the characteristic reactions of the principal moniliae on culture are tabulated.

As the same clinical syndrome may be caused by a large number of different fungi, from a practical point of view a clinical classification is considered best. Clinically, tonsillomycoses may be separated into two large groups: (*a*) the acute, comprising the follicular and the membranous; (*b*) the subacute and chronic.

Follicular Tonsillomycosis.—The majority of cases are due to yeast-like fungi of the genus Monilia, some cases to fungi of the genus Cryptococcus, and a few to Saccharomyces. Whitish-grey or yellow spots are seen at the mouths of the follicles. The patient complains of sore throat and discomfort in swallowing; there may be fever but the general condition seldom becomes serious, and the affection

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usually heals spontaneously within one to three weeks. Occasionally the infection spreads to the uvula and soft palate, forming diffuse white patches, and the condition becomes indistinguishable from the diphtheria-like type.

Diagnosis is based on microscopical and cultural examination of the patches. Prognosis is usually favourable.

In the treatment, glycerine of borax or of a solution of carbolic acid, 1 in 20 locally, is sufficient—in many cases diluted tincture of iodine is useful. Internally, salicylates, aspirin, etc., may be given. In cases which do not clear up quickly, potassium iodide should be given, or collosal iodine.

Diphtheria-like Tonsillomycosis.—The condition is usually caused by three or four types of yeast-like fungi of the genus Monilia. The onset is often sudden with a severe sore throat and difficulty in swallowing; the patient feels very ill and complains of great prostration and sometimes rheumatoid pains in the joints; fever is present (102 to 103° F.). Cervical glands may be swollen and tender. Cream-white patches will be seen on the tonsils, the uvula, and occasionally the soft palate: the patches often coalesce. Removal of portions of these patches may leave a slightly ulcerated bleeding surface. If the membrane-like structure is placed between two slides, it often feels like putty and lacks the elasticity and resiliency of a diphtheria pseudo-membrane. Two cases of this condition are described in detail.

The prognosis is generally, but not always, favourable. In one case the infection spread to the bronchi and lungs and a severe mycotic bronchopneumonia developed, which ended fatally. It must be remembered that cases of mixed infection, diphtheria *plus* mycosis, are occasionally met with. Diluted tincture of iodine should be applied to the patches, and a carbolic spray (1 per cent.) may be used. Chlorine gargles are useful. Potassium iodide may be given internally.

The principal types of the subacute and chronic tonsillomycosis are:—

(*a*) *Tonsillo-actinomycosis.*—This is rare and is caused by fungi of the genus Nocardia. An abscess slowly forms in the tonsil and peritonsillar tissues; there may be pain and difficulty in swallowing; the condition is generally unilateral and cervical glands of the same side may become enlarged. The abscess opens spontaneously through one or several openings which discharge pus containing yellow or whitish-yellow grains. After bursting the abscess continues to discharge indefinitely, the pus having the same appearance. There is no tendency to spontaneous cure and the mycotic infection may spread to other parts. If the diagnosis is made at an early stage and the specific treatment carried out properly,

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the prognosis is good. Potassium iodide given internally in large doses (30 gr. to 1 oz. t.i.d.) is very efficacious.

(*b*) *Tonsillo-pseudo-actinomycosis.*—The symptoms are the same as in actinomycosis but the pus does not contain grains and the condition is much less influenced by potassium iodide.

(*c*) *Tonsillomycosis fusca.*—The fungi causing this condition are of the genus Trichosporum. Brownish-yellow or greyish or greenish-brown spots are seen in correspondence with the follicles: these spots may coalesce and the resulting membrane is not easily removed. The patches may take months, sometimes years, to disappear.

(*d*) *Tonsillomycosis spinulosa.*—Numerous grey or whitish spicules, usually originating in the crypts, are seen on inspecting the tonsils. R. R. SIMPSON.

MISCELLANEOUS.

Percain. J. FEUZ (Lausanne). (*Internat. Zentralblatt f. Ohrenheilkunde, etc.*, March 1930.)

The article is based on 400 administrations of the preparation "percain ciba" in 1 per cent. solution. Anæsthesia develops very rapidly after injection, and lasts eight to ten hours, so that there is little post-operative pain. It causes slight vaso-dilatation, so that admixture with adrenalin, in 1·3 per cent. concentration, is desirable. The tissues were infiltrated with 40 to 100 c.c. of the solution immediately before the commencement of the operation. The drug is forty times more toxic than novocaine. Three cases in which toxic symptoms occurred are described. The risk is greater when the injection is made in vascular areas.

v. Seemen (Munich) recommends the use of weaker solutions, viz., 0·25 to 0·1 per cent. when used as an adjunct to general anæsthesia and 0·5 per cent. with 0·75 per cent. of adrenalin for infiltration.

E. Eichhoff (Munster, Westphalia) reports unfavourably on the drug. Percain is entirely different chemically from the cocaine group, being a derivative of chinolin, and is allied to atophan. He cannot confirm the supposed efficiency of very weak solutions, nor the prolonged duration of the anæsthesia. One death occurred in a patient aged 21, on whom a plastic operation on the cheek was being undertaken. The patient had previously had 100 c.c. of 0·5 per cent. solution for a former operation. The fatality occurred after administration of 130 c.c. of 1 per cent. solution, without adrenalin. Fifteen minutes later clonic contractions set in, with spasm of respiration and cyanosis. Death occurred twenty minutes later. No special cause for death was found.

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A. Ritter (Zurich) reports 309 administrations. Anæsthesia was satisfactory and there were no bad symptoms. A 0·5 per cent. solution was used. One of the advantages of percain is its sterilisability by heat. G. WILKINSON.

Pernokton Narcosis in Oto-Rhino-Laryngology. KURT BURGDORF (Kiel). (*Archiv. f. Ohren-, Nasen- und Kehlkopfheilkunde*, 1930, Vol. cxxvi., pp. 52-64.)

Pernokton is a sodium salt of the secondary butyl-β-brompropenyl-barbituric acid of the constitution $C_2H_{14}O_3N_2BrNa$. The author has used it on thirty-five cases in the last year. His conclusions are as follows:—

1. Simple Pernokton narcosis is not a suitable substitute for general inhalation anæsthesia in oto-rhinological cases where it is necessary to carry out any chiselling procedure on the cranial bones.
2. On the other hand the "combined" Pernokton narcosis has certain advantages over pure inhalation anæsthesia.
3. As far as we know at present, Pernokton is free from danger so long as only a hypnotic effect is desired and a corresponding dose chosen.
4. The sedative and amnesic effects relieve the patient's apprehension before the operation, and his remembrance afterwards.
5. Post-anæsthetic vomiting is diminished, which is of special importance in the presence of intracranial or labyrinthine complications where prolonged vomiting is dangerous.
6. Pernokton as the basic narcotic gives a relatively safe anæsthesia for patients with pulmonary complications.
7. The smaller amount of ether necessary when Pernokton is given, diminishes one risk of pulmonary complications.
8. The only disadvantage that the author has observed in the use of Pernokton is the post-operative restlessness that sometimes occurs in children.
9. No respiratory trouble has ever been seen.

Further work will be done and a report submitted in due course. At present the author's technique is as follows:—

(*a*) 0·0005 gr. of Bellafolin is given hypodermically half an hour before the Pernokton.
(*b*) Careful dosage adapted to the individual patient.
(*c*) Slow injection.
(*d*) Diversion of the patient by "verbal suggestion."
(*e*) Uninterrupted supervision throughout the operation and up to recovery. F. W. WATKYN-THOMAS.

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Abstracts

The Use of Gluconic-Acid-Calcium Compounds in Diseases of the Nose, Throat and Ear. HANS JOHOW (Breslau). (*Archiv. f. Ohren-, Nasen- und Kehlkopfheilkunde*, 1930, Vol. cxxvi., p. 94.)

Johow has been using a calcium salt of gluconic acid called "Calcium Sandoz." He finds that this can be given either by intravenous or intramuscular injections without any damage to the tissue, and given by mouth in powder or tablet there is no irritation of the gastro-intestinal tract. He has employed the preparation in all conditions of an allergic nature, vasomotor rhinitis, asthma and hay fever, with satisfactory results. He is not yet prepared to speak definitely as to the effects in other diseases of the vegetative system, but the results obtained in cases of labyrinth disturbance presumed to be of vasomotor origin have been sufficiently encouraging for further experiments to be undertaken. He believes that he has found the preparation valuable as a prophylactic against operative bleeding and in the treatment of hæmorrhage. F. W. WATKYN-THOMAS.

TWO CASES OF GORING BY A BULL'S HORN.

(1) *Case of Perforation of the Septum caused by the Horn of an Ox and healed by Cicatrisation.* YAMASAKI (Yonago). (*Oto-Rhino-Laryngologica*, Vol. iii., No. 9, p. 768.)

The perforation dated from forty years previously in a peasant aged 63, and at the present time it seems to have closed by cicatrisation.

(2) *Perforating Wound of the Œsophagus caused by a Horn of an Ox.* K. HANE (Kagoshima). (*Oto-Rhino-Laryngologica*, Vol. iii., No. 9, p. 778.)

The patient was a peasant, aged 22, who had been gored on the right side of the neck by an ox's horn, which passed through the œsophagus. The wound of the soft parts ran from 4 cm. behind the submental angle of the jaw obliquely forwards and downwards to the sternoclavicular joint and was 9 cm. in length. There was a gaping wound of the corresponding parts of the layer of muscles. Hoarseness was present owing to a lesion of the right inferior laryngeal nerve. In the upper part of the œsophagus a small cut was made, through which an indiarubber tube was introduced for feeding and protection; it was removed three weeks later. Nourishment could then be taken and six months later the œsophagoscope showed that there was no stenosis of the œsophagus. JAMES DUNDAS-GRANT.

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