ABSTRACTS

EAR.

Otosclerosis. Interim Report of the Committee of the American Otological Society, April 1930.

This report gives an account of the work which is being organised on the subject of Otosclerosis by a committee consisting of Drs Norval Pierce of Chicago, Eugene Crocket of Boston, Arthur Duel and James McKernon of New York, and Gordon Wilson of Chicago. The report gives evidence of the American genius for the organisation of co-operative research which, fortunately for the investigation, is not hampered by any lack of funds. In outlining the research work to be done, the above-mentioned committee has been aided by neurologists, physiologists, anatomists and others in various American and Canadian universities.

(1) In the first place the committee has collected, translated and codified the numerous contributions on Otosclerosis which have hitherto been published in various countries. This work is contained in two volumes and was published in New York in 1929.

(2) Professor Davenport of the Department of Genetics in the Carnegie Institution at Washington is conducting an inquiry into the hereditary factor in Otosclerosis. He has collected material covering one hundred family trees and has investigated 340 individuals with an otosclerotic tendency. He finds that about 60 per cent. of children from otosclerotic families show a tendency to the disease, but he holds that there are other causes which play a part in producing the affection. Further grants have been made to Professor Davenport's department to continue and extend the work.

(3) Under the supervision of Professors Collip, Babkin and Birkett, work is being done at McGill University, Montreal, on the effects of endocrine secretions on the ear and on hearing. It is admitted that this investigation will be a very difficult one.

(4) Professor Crocket of Harvard has reported on the effect of particular diets with measured calcium content, when given to young people (from otosclerotic families) who are beginning to show the early stages of the disease.

(5) Professor Bast of Wisconsin is working at the subject of the normal development of bone in the labyrinth capsule in fœtal and infantile life. He finds that there is normally a residue of imperfectly ossified areas which persist during the life of the individual. It is in one of these areas that otosclerosis most commonly appears.

(6) The Otosclerosis Committee is of opinion that the time is not far off when experimental work will have to be done on animals by feeding, by the administration of drugs, and by other means, that the hearing of animals so treated may be accurately ascertained. It has been decided to grant funds for two Fellowships in order to enable the investigators to work at McGill and Cornell Universities in order to find out, if possible, an efficient method of testing the hearing power of animals.

It is interesting to note that the above-mentioned investigations are being conducted at various universities, and the committee state that they have endeavoured to stimulate research work in those scientific departments where it can best be carried out, the aim being to secure the best men available.

As the subject of Otosclerosis is to be discussed at the next International Otological Congress, at Madrid in 1932, it is to be hoped that the Otosclerosis Committee appointed by the Otological Section of the Royal Society of Medicine may organise research work in this country in such a way that the British members of the Congress will have no cause to be ashamed of our contribution to that discussion.

J. S. FRASER.

The Monosymptomatic Labyrinthine Form of Epidemic Encephalitis. ERNST WODAK. (*Acta Oto-laryngologica*, Vol. xiv., Fasc. 1-2.)

The author had the opportunity of observing, during the wide-spread epidemic of influenza last winter, a number of affections of the vestibular apparatus. Careful investigation showed that in these cases the condition apparently consisted of a monosymptomatic labyrinthine variety of epidemic encephalitis. He distinguishes the following three groups:—

(1) Isolated affection of the vestibular nerve, characterised by sudden onset of vertigo, vomiting and rotatory nystagmus, particularly with the head in a certain definite position.

(2) Affection of both vestibular and cochlear branches of the acoustic nerve. This is the most common type, showing nerve-deafness and tinnitus in addition to the vestibular symptoms.

(3) Isolated affection of the cochlear nerve. This form is very rare and was met with in only one of over twenty cases.

The first of these groups has previously been described by Barré-Reys, Pogany, Grahe, Poston and others; the second only by Pogany.

The treatment is that usually employed in cases of Ménière's syndrome. Vasano (Schering) has given the best results in overcoming the vomiting. The prognosis is doubtful, the symptoms persisting in some of the cases for weeks or even months in spite of treatment.

THOMAS GUTHRIE.

Histological and Clinical Inquiries on the Question of Changes in the Labyrinth in Cases of Malignant Growth at a distance from the Ear. E. SCHLITTLER. (*Acta Oto-laryngologica*, Vol. xiv., Fasc. 1-2.)

Three varieties of secondary malignant disease of the labyrinth are commonly recognised:

(1) Penetration of the new growth from neighbouring parts.
(2) Metastases by way of the blood or lymph vessels from malignant disease elsewhere.
(3) Malignant disease entering by means of the cerebrospinal fluid from carcinoma of the meninges.

Démétriades of Hajek's clinic describes a fourth variety consisting of an interstitial neuritis of the eighth nerve and an exudative labyrinthitis, which he claims to have met with in patients suffering from malignant growths quite unconnected with the ear.

The author made a microscopical examination of the temporal bones from twelve patients who had died of malignant growth at a distance from the ear and whose ears had been examined clinically before death. He also made a clinical examination of 201 cases of malignant disease unconnected with the ear. The results of his observations did not furnish any support to the views of Démétriades.

THOMAS GUTHRIE.

Animal Experimental Researches on the Medical Treatment of Purulent Meningitis. G. JUNG (Breslau). (*Zeitschrift für Hals-, Nasen- und Ohrenheilkunde*, Band xxv., Heft. 1, p. 32.)

In the normal animal staining fluids introduced by lumbar puncture do not reach the cerebral meninges and are speedily absorbed and excreted. Fluids injected into the veins do not pass through the choroid plexus. In meningitis the choroid plexus becomes more porous and allows even particles to pass into the cerebrospinal fluid.

Meningitis was induced in animals by the injection of virulent (to the animal) staphylococci, and in some various remedies—urotropin, trypaflavine and rivanol—were introduced into the veins. By comparison of animals so treated with controls not so treated it was found that urotropin was of some use when injected beforehand, not when simultaneously with the induction of the meningitis. It has also

injurious effects in large doses on the kidneys and bladder. Trypaflavine had no beneficial effect either prophylactically or therapeutically. Rivanol appeared to have a certain beneficial effect when injected at the time of the induction of the meningitis. Its prophylactic use was less effective than that of urotropin.

JAMES DUNDAS-GRANT.

Experiments on the Localisation of Sound. P. H. G. VAN GILSE and OTTO ROELOFS. (*Acta Oto-laryngologica*, Vol. xiv., Fasc. 1-2.)

The localisation of sound was studied with Landolt's apparatus for the examination of the localisation of the visual organ, modified for this purpose by Otto Roelofs. The subject of the experiment, whose head is fixed, thrusts a needle in the supposed direction of the sound into a paper placed round him in a circular arch. Politzer's little acoumeter was used for sound source. By closing one or other external meatus it was possible to make unilateral as well as bilateral experiments. In the bilateral examination the fairly accurate existing results of former investigators were found correct; exactly in front, in the vicinity of zero of the apparatus, the localisation was the most accurate. To the sides the tendency existed to incline to the front. In unilateral experiments it was found: (1) That in that side of the room pertaining to the closed ear not a single sound was localised. (2) That on the side of the open ear a clear localisation faculty existed, though liable to greater mistakes than in the case of bilateral examination. In our opinion the bilateral localisation is best explained by the intensity theory.

Further investigation revealed that the unilateral localisation is based on the influence of the auricle. With a somewhat modified arrangement the bilateral localisation in the median plane was examined. It was evident that in this way a fairly accurate localisation was not impossible. It is noteworthy that this was the case with one of the persons examined with the acoumeter, while the other examined could only distinguish a sensation of noise (Lärmtrommel) in this arrangement. This agrees with existing experience that noise can be better localised than less complicated acoustic stimuli. The auricles of course play a less important part in the median plane than at the sides of the head. Still, possibilities of localisation exist here, which was clearly proved by filling up several folds of the auricles whereat the localisation decreased in several parts of the median plane. Finally the acoustic stimulus was given in a horizontal plane at the side of the open ear. When one ear is closed and when the open ear is, moreover, entirely filled up with plasticine all power of localisation disappears; every stimulus was localised in one certain point which was situated a little

in front of the line through both external auditory canals. Further, it could be demonstrated that even in unilateral localisation in a horizontal plane, different parts of the auricles did not possess the same value.

AUTHOR'S ABSTRACT.

Paracentesis. F. WANNER. (*Zeitschrift f. Laryngologie, Rhinologie, etc.*, Band 19, p. 349, May 1930.)

According to the author paracentesis is done far too often on insufficient grounds. Earache, reddening of the drum and tenderness over the mastoid are not sufficient reasons for this operation, as many cases of acute otitis showing these signs subside without a perforation occurring.

Hearing tests must always be done. Dr Wanner considers paracentesis only when the hearing is very much reduced. Even then one should carry out politzerisation for a day or two. If the hearing improves there can be only little secretion in the middle ear and an incision of the drum is unnecessary.

Among 106 cases of simple acute otitis media—presumably adults—only 11 had a paracentesis done. In a large children's hospital in Munich paracentesis had been the rule in all cases of acute otitis, especially when it was a complication of scarlet fever and measles. When the author was placed in charge of the ear department of this hospital, he practically ceased doing this operation. In infants and children Dr Wanner rejects paracentesis almost on principle. The fear expressed by colleagues that cases of meningitis and other serious complications would occur proved quite groundless. Also the cases of otitis where no operation had been done proved no more resistant to treatment than those where the drum had been incised.

Paracentesis should never be done in a phthisical subject; the resulting otorrhea will probably become chronic and the surgeon will for ever after be blamed by the patient and his relations for having caused it.

J. A. KEEN.

Prolapse of the Brain after Ear Operations. M. HIRSCH. (*Zeitschrift f. Laryngologie, Rhinologie, etc.*, Band 19, p. 338, May 1930.)

A short article in which the author discusses the pathology and treatment of cerebral hernia. In the etiology there are always two main factors present:

(*a*) an opening involving bone and dura;
(*b*) a force which pushes the cerebral contents outwards.

It has been shown experimentally that brain prolapse does not take place when the intracranial pressure is normal—even if there is a fairly large opening of bone and dura. A cerebral hernia which

forms very quickly after incising the dura is only rarely seen, and then it is due to a brain abscess, the so-called "primary" prolapse. It is more common for the cerebral hernia to develop gradually during the after-treatment, and it is then due to inflammation of the brain substance and of the meninges, with consequent increased intracranial tension.

A large-sized trephine opening in itself is never a cause of cerebral hernia. In fact one form of surgical treatment is to *enlarge* the bone opening in the hope of relieving the œdema due to the mechanical pressure of the bone ring, as this œdema is a factor in aggravating the encephalitis. Unfortunately the encephalitis is generally progressive and surgical treatment is not often successful. J. A. KEEN.

Thrombophlebitis of the Lateral Sinus and the Internal Jugular: A Case of Unsuspected Etiology. LUIS RUIZ-ZORILLA and GERARDO CLAVERO (Santander). (*Revista Española y Americana de Laringologi*, p. 250, June 1929.)

The authors, after a search of the literature, believe that the case presents features which are unique.

A youth of 13 had a sore throat and received some local treatment. A fortnight later he came under the care of the authors, who performed a mastoid operation. The lesion in the bone was extensive and the lateral sinus, on being exposed, was found to be the colour of straw. However, the walls were compressible, so in the absence of pulsation and symptoms of pyæmia the sinus was not opened. Pain disappeared; otherwise the patient did not improve, and nine days later he had a rigor, with temperature of 104° F. Further operation was refused and the patient was treated with various injections. Three days later, however, as the patient was getting worse and the left hip and right shoulder-joints began to swell, consent was given and Grunert's operation was performed. The internal jugular was found thrombosed as far down as the lower border of the thyroid cartilage. Five days later the right sterno-clavicular joint became painful and rigors continued until the twenty-sixth day after the operation. The progress of the disease in the joints was not very rapid and it was only in the sterno-clavicular joint that fluctuation appeared. The wound itself remained sluggish and at the end of a month the open vessels were covered with pale granulations. A piece of packing taken from the lumen of the sinus was then examined and showed almost entirely a diphtheria or pseudo-diphtheria bacillus with a few short chains of streptococci. Aspiration of the sterno-clavicular joint yielded a pure culture of virulent diphtheria bacillus. Treatment with antitoxin produced an immediate improvement in the wound and the lesions in the hip, shoulder and sterno-clavicular joints disappeared

in a fortnight. Healing was complete in three months from the beginning of the illness. A few cases of diphtheritic bacillæmia have been recorded, but apparently no other case of metastatic arthritis.

L. COLLEDGE.

Diagnostic and Therapeutic Value of Iodized Oil in Chronic Purulent Otitis Media and Chronic Mastoiditis. Preliminary Report. M. J. MANDELBAUM. (*Laryngoscope*, Vol. xxxix., No. 3, p. 156.)

Iodine has long been used in the treatment of nose, throat and ear diseases, but recently the author decided to use iodized oil as an opaque medium for the study of diseases of the middle ear by X-ray. A few cases are described where the instillation of lipiodol after thorough cleansing of the middle ear not only provided a study of the mastoid cells, but also effected a cure of the chronic suppuration. The illustrations clearly show the presence of the oil in outlying mastoid cells and the X-ray specialist is of opinion that the oil shows up cells which would be invisible in an ordinary X-ray.

It is, of course, essential that a perforation exists in the tympanic membrane. The technique consists in instilling about 2 c.c. of ether into the ear morning and night. As soon as this has evaporated 1 c.c. of iodized oil is injected daily into the external auditory canal and retained for ten minutes.

It is suggested that the penetration of lipiodol into the field of otology opens up a new sphere of study and therapeutics. It may show up cells which have been overlooked during a mastoid operation.

The results of the few cases detailed are encouraging, and should prove of value in preventing a radical operation on many a doubtful case.

ANDREW CAMPBELL.

Syndrome-Complex, Ménière. D. W. DRURY. (*Laryngoscope*, Vol. xxxiv., No. 3, p. 141.)

The author contends that the term "Syndrome-Complex, Ménière" should be reserved for a chronic type of disease exhibiting tinnitus, deafness and vertigo. The case described by Ménière of the young girl who after contracting a chill became suddenly deaf and was dead in five days was probably a meningitis. Other cases of Ménière are quoted, and they are of the chronic type—that is to say the symptoms vary according to the intensity of the affection. These usually occur in paroxysms at irregular intervals, which may be weeks or months. A fresh attack is often preceded by increased tinnitus, a feeling of pressure in the head, general depression and a sensation of rotation. The attack itself is characterised by severe dizziness, tinnitus, nausea and often vomiting.

There may be inability to stand or walk. Of the violent symptoms met with at the beginning of an attack, unconsciousness and vomiting are the first to disappear, while dizziness and disturbance of equilibrium may last several days. The patient is usually middle-aged, the pulse is slow, the temperature subnormal, the nystagmus is a combination of horizontal and rotatory.

A certain proportion of these chronic cases are probably due to endocrine dysfunction. Three cases are described in which this view seems to receive support as a result of treatment with thyroid extract. In a study of 500 consecutive cases, which on laboratory examination were shown to be endocrine in origin, the author found deafness, tinnitus and vertigo not only present, but the chief complaints in 289 pituitary, 148 thyroid, 119 gonad cases, as well as in 12 cases of adrenal involvement. In another group study of 500 cases of non-endocrine etiology the same syndrome was observed in cardiovascular 61 cases, neuroses and psychoses 60, syphilis 43, focal infections 56, lesions of central nervous system 83, miscellaneous 198. Percentages of incidence of each of the three symptoms are tabulated in the two groups.

The writer does not wish to suggest that all cases of the syndrome are endocrine in origin, but he feels that a certain proportion will eventually be proved to be due to an endocrine hypofunction, never to a hyperfunction. ANDREW CAMPBELL.

Present State of the Anatomy and Physiology of the Vestibular Nerve. R. LORENTE DE NO. (*Revista Española y Americana*, p. 433, November 1929.)

Currents of endolymph or perilymph are only produced during circular movements of the head—movements in a straight line do not produce any current. For a long time there has been a discussion on the possibility of currents in the interior of tubes of such narrow calibre as the semicircular canals, but to-day there can be no discussion, because various experimenters have seen them directly with the microscope. Displacements of the canals occur in any movement of the head, the extent being greater in proportion in rectilinear acceleration. Movements in a straight line produce only displacements of the membranous canals. Centrifugal movements produce in addition to the currents a displacement of the canal, the extent of the latter being dependent on the position of the head in relation to the axis of rotation. The combination of the stimuli due to the currents and the displacements of the canals explains the enormous difference of the nystagmus in different positions of the head in relation to the axis of rotation.

Abstracts

In the early days of the physiology of the labyrinth it was accepted that the semicircular canals react only to circular movements and they only produce nystagmus: little by little the function of the semicircular canals has been amplified to include all the labyrinthine reflexes.

(1) The semicircular canals produce nystagmus.

Direct proof.—A current produced by any mechanism whatever produces nystagmus, or at any rate the slow phase.

Indirect proof.—Blocking the semicircular canals causes the nystagmus to disappear.

The mechanism of production is fundamentally a current in the canal—the stimuli due to the displacements of the canal only modify the amplitude, frequency and duration of the nystagmus. Its direction, in general terms, depends only on the currents.

(2) The semicircular canals produce reflexes from movements of acceleration in a straight line. There is only indirect proof of this. If the otolith membranes be separated from the maculæ by centrifugalisation according to the method of Wittmaack, nevertheless the reflexes from movements of acceleration in a straight line persist. Also blockage of the six semicircular canals causes these reflexes to disappear. The mechanism of production consists in displacement of the membranous canal into the interior of the bone.

(3) The semicircular canals take part in the production of the "third reaction" on turning. Blockage of the semicircular canals modifies this reaction profoundly—even causes it to disappear.

(4) The semicircular canals take part in the production of tonic reflexes.

Direct proofs.—These are not altogether convincing. The author has observed that on applying a little piece of cotton to a semicircular canal obliquely so that the canal is not only compressed, whereby currents are produced, but also displaced, the eyes undergo deviations of tonic character, which are different when the cotton is directed towards the ampulla or towards the plain end of the canal.

Indirect proofs.—Maxwell has observed that tonic reflexes can be produced even after removal of the otolith membrane. Nylèn has observed positional nystagmus in guinea-pigs after removing the otolith membranes by centrifugalisation. The author has observed profound modifications of the ocular tonic reflexes after blocking the canals, and has demonstrated that the blockage of the canals causes a profound modification of the tonic reflexes produced by centrifugal force. The mechanism of production consists in a displacement of the membranous canal into the bone. L. Colledge.

Ear

Complications of Otitis due to the Streptococcus Hæmolyticus. Dr JUSTO M. ALONSO, Professor of O.R.L. in Montevideo (Uruguay). (*Revista Española y Americana de Laringologia*, Vol. xxi., p. 104, March 1930.)

Dr Alonso thinks that although the hæmolytic streptococcus is intimately associated with scarlet fever, it is probably not the cause. He reviews concisely the numerous reasons for this opinion and concludes with Werner Schultz that the infection of scarlet fever is initiated by an unknown virus, which opens the way for the activity of the hæmolytic streptococcus.

He then relates in detail the histories of five cases of otitis treated with scarlatina antitoxin. In the first case there was a history of scarlet fever which was followed by otitis and meningitis, and the hæmolytic streptococcus was twice cultivated from the cerebrospinal fluid. The injections of antitoxin were both subcutaneous and intrathecal. The patient, a boy aged 9, made a good recovery.

In the second case there was meningitis following an otitis. The hæmolytic streptococcus was cultivated from the aural discharge, but cultures of the cerebrospinal fluid were sterile although it was turbid. This patient was treated with scarlatina antitoxin and a vaccine. Recovery was complete. In these two cases simple mastoid operations were done, followed in the first by a radical operation, owing to the extent of bone destruction.

In the third case septicæmia supervened on a streptococcal otitis in a girl aged 6. The injections were intravenous and intramuscular. The patient recovered after an abscess in the right hand was opened. The pus contained a hæmolytic streptococcus. Two more cases are related, in one of which the otitis followed scarlet fever and in the other an ordinary cold. In both the pus from the ear contained the hæmolytic streptococcus. The scarlatina antitoxin was used in both cases with good effect.

In the treatment the scarlatinal antitoxin of Sordelli and the antiscarlatinal serum of the Argentine Biological Institute were used. The author considers the former is the more active, and that many lives have been saved by serum therapy in scarlatinal otitis. Full clinical records of the cases are given, and the exact details of the treatment, so that the report furnishes strong evidence in support of the author's conviction, although the cases are not very numerous.

L. COLLEDGE.

Late Meningitis after Fracture of the Labyrinth. F. R. NAGER. (*Acta Oto-laryngologica*, Vol. xiv., Fasc. 1-2.)

The experience that people with a fracture of the skull may die from a meningitis after injury to the temporal bone after a lapse of many months is very important, not only from a general medical, but

especially from an otologic point of view. After mentioning the cases hitherto known, two cases with their microscopic findings, observed by the author himself, are communicated.

From these cases it is evident that the danger of post-traumatic meningitis only exists in cases of true labyrinth-fracture—that is, in cross-fracture through the petrous bone or longitudinal fracture of the skull.

It is remarkable that as a rule in such fractures of the mastoid bone no ear-bleeding was seen after the lesion, so that apparently no danger of secondary infection existed. In the microscopic investigation it became, however, evident that the fracture in the region of the periosteal layer of the labyrinthine capsule ossifies, whereas in the enchondral part the fracture line does not heal, or heals only by means of connective tissue. Along these pathways the infection of the internal ear and the meningeal membranes follows the slightest infection of the middle ear. The diagnosis of these cross-fractures can at present easily be made by the clinical symptoms: deafness, insensitiveness of the vestibular apparatus, and especially by Stenvers special X-ray photographs.

Prophylactically, in cases of initial meningeal irritation, the radical operation with opening of the labyrinths is advised. It is of great importance in these cases that there should be co-operation between the doctor who first sees the case and the otologist.

AUTHOR'S ABSTRACT.

On the Beginnings of Otosclerotic Focal Disease. LANGE W. (Leipzig). (*Zeitschrift für Hals-, Nasen- und Ohrenheilkunde*, Band. XXV., Heft. 1, p. 1.)

The author examined histologically 45 cases of otosclerosis—in 21 both temporal bones, making 66 in all. Strangely, 26 were male and 14 female. In 43 the foci were situated in the fenestræ. The oval window was alone affected in 22, the round one alone in 4, both windows alone in 7, the oval window and cochlea in 1, the round window and cochlea in 1, both windows and cochlea in 4, oval and round windows and cochlea (*sic*) in 1, both windows, cochlea and semicircular canals in 3, cochlea and canals in 1, cochlea alone in 1. The beginnings are studied in the capsule of the labyrinth, importance being attached to the staining with hæmatoxylin-eosin, of specimens prepared with formalin and not bichromate of potassium.

The writer finds in his researches points of agreement with the various views enunciated by others. He recognises a *pre-stage* of degeneration of endochondrial labyrinthine cartilage, especially of the interglobular spaces and their cartilage cells. This is followed by a *cartilage-stage* with reconstruction of the degenerated labyrinthine bone

and development of the tumour-like formation, for which room is afforded by the advancing degeneration and the lacunar absorption of the original bone. The third or *bone-stage* supplies the more or less circumscribed focus. In the final stage there is bone which is either compact or else spongy with normal looking fatty marrow, or with abnormally wide blood-vessels, or fibrous marrow, or sometimes with cystic spaces.

Lange first recognised these changes in the foci in the capsule of the labyrinth. He holds that the processes in otosclerosis are quite unique in the general pathology of bone, that there is no unequivocal explanation of its origination, that it is not comparable with any form of inflammation or influenced by inflammatory processes in the temporal bone, that, as it is confined to the capsule of the labyrinth and develops in focal form, it is not analogous to the bone changes produced by disturbances of metabolism such as osteo-malacia and rickets. He attaches importance to the conclusion of Eckert Möbius that the focus regularly develops between the terminal areas of distribution of the primary cartilage-vessels and those of the secondary bone-vessels. (The article is enriched by a large number of instructive histological illustrations, many of them in colour.)

JAMES DUNDAS-GRANT.

NOSE AND ACCESSORY SINUSES.

Anatomical Investigations on the Maxillary Sinus in relation to the Ethmoid and Frontal Sinus. Dr R. VILAR FIOL (Valencia). (*Revista Española y Americana de Laringologia*, Vol. xxi., January and February 1930.)

Dr Fiol has made an extensive research into the anatomy of the accessory sinuses of the nose. The articles are richly illustrated with drawings, photographs and X-ray plates of dissections and bones.

His conclusions are as follows:—

A. *Relating to the Maxillary Sinus.*

1. The maxillary sinus does not open directly into the nasal fossa, but into the oval fosette, and in this way communicates at the same time with the nasal fossa and with the antero-external group of ethmoidal cells.

2. The maxillary sinus can be in direct communication with the frontal sinus. This communication is independent of the classical anatomical arrangement in the outer wall of the nasal fossa.

3. The orbital prolongation of the maxillary sinus must not be confused with the structures of the oval fosette. The first is antero-external and the second is postero-internal to the lacrymo-nasal duct.

4. The relationship of the maxillary sinus to the lateral mass of the ethmoid is that of simple vicinity or contiguity in its posterior part and of direct communication in its anterior parts.

5. The clinical relation of the maxillary sinus to the ethmoid and the frontal sinus, which to-day is supposed to be only possible through the nasal fossa, is in reality also direct.

B. *Relating to the Ethmoid.*

6. The ethmoidal cells do not all open into the nasal fossa.

7. The cells of the antero-external group, that is the cells of Mouret which surround the lacrymo-nasal duct, open into the maxillary sinus through the maxillo-ethmoidal duct and the oval fosette.

8. The root of the unciform process above and the process itself below form a bony plate which isolates this group of cells from the nasal fossa.

9. The investigations confirm the present ideas on the development of the ethmoid and the origin of the frontal sinuses.

C. *Relating to the Frontal Sinus.*

10. The frontal sinus, whether single or multiple, can be in direct relation not only with the nasal fossa, but also with the maxillary sinus.

11. The communication of the frontal sinus with the exterior (that is with the nasal fossa or the maxillary sinus) always takes place across the ethmoid, principally by the cell whose expansion formed the frontal sinus in whole or in part.

12. It can happen that a frontal sinus communicates only with the maxillary sinus, when the origin is entirely from an uncinate cell.

13. The communication of the frontal sinus with the uncinate group of cells is, in the majority of cases in which it exists, very distinct. It is generally situated in the antero-external part of the fundus of the sinus, in a depression named by the author the maxillary depression.

D. *Relating to Structures described by the Author for the first time.*

14. The oval fosette communicates externally and below with the maxillary sinus, above and behind with the nasal fossa through the maxillary canal, above and in front with the ethmoid through maxillary-ethmoidal duct.

15. The maxillary-ethmoidal duct places the oval fosette in communication with antero-external ethmoid.

16. These structures are all outside the unciform process.

Nose and Accessory Sinuses

E. *Relating to the Correction of some Classical Conceptions.*

It is usually supposed that each diverticulum from the nose is independent.

17. It has been shown that the maxillary sinus and the frontal sinus can communicate, and in reality often do so.

18. It has also been shown that a whole region of the ethmoid communicates directly with the maxillary sinus, and only by this means with the nasal fossa.

19. And that the frontal sinus can communicate at the same time with the nasal fossa and the maxillary sinus, and sometimes only with the latter. L. COLLEDGE.

Iodized Oil as an Aid in the Diagnosis of Chronic Maxillary Sinus Disease. E. LLOYD JONES. (*Archives of Oto-laryngology*, Vol. xi., No. 4, April 1930.)

The writer describes how radiography, following the introduction of iodized oil into the maxillary sinus, may be of great value in diagnosis. His method is as follows:—After irrigation of the antrum, iodized sesame oil (40 per cent.) is injected, until the oil drips from the nose, the head being slightly inclined forward. The radiogram is taken within the next ten minutes, the patient being in the Waters position, viz., mouth widely opened, with chin and nose touching the plate. The sinuses are afterwards allowed to empty themselves, the patient being warned to expectorate the oil. The normal sinus is filled with 7 to 12 c.c. of oil, and empties itself within forty-eight hours. Radiogram following injection of the oil will show whether the lining membrane is thickened, smooth or polypoid. Without the aid of opaque injection, the diagnosis of polypi or granulations is often missed.

287 patients have been studied by this method, and the diagnosis verified by operation through the canine fossa in 54 cases.

The paper is illustrated by a series of radiograms.

DOUGLAS GUTHRIE.

On Vasomotor Reflexes in the Nose. W. UNDRITZ (Leningrad). (*Zeitschrift für Hals-, Nasen- und Ohrenheilkunde*, Band xxv., Part 2, p. 157.)

The plethysmographic method of registering the contraction or dilatation of the vessels of the nasal mucous membrane was employed. Section and stimulation of the nerves showed that the cervical sympathetic controlled the contraction and the vidian nerve the dilatation. Nicotinisation of the superior cervical ganglion interfered with the one, and of the sphenopalatine ganglion with the other. The constricting fibres of the sympathetic are broken up (with synapses)

in the superior cervical ganglion, the dilating fibres of the vidian in the sphenopalatine, the latter being parasympathetic. Stimulation of a peripheral nerve causes narrowing of the intranasal vessels on both sides, but this is absent on any side on which the cervical sympathetic has been divided. Cerebral or psychical stimuli may produce vaso-motor changes. Direct irritation of the nasal mucous membranes produces defensive slowing of respiration and glottic spasm. The points are brought out by means of tracings, which are most distinct.

JAMES DUNDAS-GRANT.

LARYNX.

Congenital Laryngeal Stenosis due to a Double Laryngocele. E. OPPIKOFER. (*Zeitschrift f. Laryngologie, Rhinologie, etc.*, Band xix., p. 362, May 1930.)

This interesting condition was discovered post-mortem. The boy, who had suffered from laryngeal stridor since birth, died of broncho-pneumonia at the age of 4 months. Two cystic swellings were found in the larynx, one occupying each aryteno-epiglottic fold. The swellings were cysts containing air; they were lined with columnar, ciliated epithelium and communicated with the respective ventricles of Morgagni. The article contains very good illustrations of the macroscopic and microscopic appearances. J. A. KEEN.

Difficulties in the Removal of the Tracheotomy Tube in Children. HELENE BURMEISTER. (*Zeitschrift f. Laryngologie, Rhinologie, etc.*, Band xix., p. 359, May 1930.)

In the clinic at Dnjepropetrowsk (Russia) there are frequent admissions of infants of the peasant class who have inhaled water-melon or sunflower seeds. As many as 40 cases were observed during 1928. A tracheotomy and a low bronchoscopy are necessary. Occasionally some form of laryngeal stenosis develops and the subsequent removal of the tracheotomy tube presents difficulties. Six cases are described in detail.

The author finds that it is quite unnecessary to consider serious operations such as laryngofissure and laryngostomy, which play an important rôle in the treatment of chronic laryngeal stenosis in adults.

In young children one can take full advantage of the fact that the dimensions of the upper air passages increase considerably as the child grows. After six to twelve months or even longer intervals the removal of the tracheotomy tube may become quite easy without further interference. J. A. KEEN.

Tonsil and Pharynx

Formation of a Pseudoglottis after Total Laryngectomy. A. SEIFFERT. (*Zeitschrift f. Laryngologie, Rhinologie, etc.*, Band xix., p. 358, May 1930.)

Prolonged pressure of the tracheotomy tube had caused some necrosis of the cartilage on the side walls of the trachea. As a result a band of scar tissue had formed on each side just below the tracheal opening. These two bands could be seen to approximate during attempts at phonation and coughing, and to separate on inspiration. There are three excellent coloured illustrations. J. A. KEEN.

TONSIL AND PHARYNX.

Alleviation of Pain in Peritonsillar Abscess. M. R. GUTTMAN. (*Archives of Oto-laryngology*, Vol. xi., No. 4, April 1930.)

The writer, having noted how pain in the region of the palate, such as occurs in peritonsillitis, may be relieved by the application of cocaine to the mucosa overlying the sphenopalatine ganglion, has applied this method to secure anæsthesia for the opening of peritonsillar abscess. A cotton applicator, dipped in 20 per cent. solution of cocaine, is introduced into the nose until the tip lies just behind the posterior end of the middle turbinal. After leaving this in position for several minutes a peritonsillar abscess may be painlessly incised. The advantage of this method of nerve blocking is that the application is made at a distance from the inflamed area, as it is well known that the efficacy of a local anæsthetic is reduced, or may even be ineffective, when injected into inflamed tissues. Also the inability to open the mouth widely increases the difficulty of applying any local anæsthetic to the peritonsillar region itself. DOUGLAS GUTHRIE.

The Inoperable Tonsil. J. C. SCAL. (*Archives of Oto-laryngology*, Vol. xi., No. 4, April 1930.)

In this paper the word "inoperable" is not applied to malignant disease, but to the tonsil in which, for some reason, the usual operation of surgical removal is contra-indicated. Such tonsils may be treated by the introduction of radon seeds. Each seed contains 2·5 millicuries of radium emanation and is left *in situ* for five or six days, when it is removed by means of a silk thread attached to one end. The seed should be planted centrally in the tonsil, at least 2 mm. below the surface. The writer now uses two seeds for each tonsil, each seed containing 1·5 millicuries. No anæsthetic is required and only one treatment is necessary. The writer regards his method as superior to electro-coagulation or X-rays, as the radium exerts its action only on the lymphoid tissues within the area, without affecting adjacent tissues. DOUGLAS GUTHRIE.

Abstracts

Chronic Tonsillitis. S. BERGGREN and T. HELLMAN. (*Acta Oto-laryngologica*, Supplement XII.)

In this elaborate paper, which extends to a length of 222 pages of text and illustrations, the authors give details and discuss the results of researches carried out with the object of determinating the relationship between the clinical symptoms and signs of chronic tonsillitis and the pathological condition actually found on microscopical examination of the tonsils removed by operation.

The material consisted of the tonsils removed from 128 patients. Details are given of the history and clinical appearances of each of these cases, and of the pathological condition found on the microscopic examination of three sections taken from the middle and from the upper and lower poles of each tonsil. Particular attention was paid to the degree of involution and the apparent functional capacity; the test of the former being the proportion of connective tissue, and of the latter the number and size of the follicles. It was found possible to divide the tonsils into three groups, namely those of poor, moderate and good functional capacity, as estimated by their histological appearances, and an attempt was made to correlate the conditions characterising each of these groups with the history and clinical features of the cases. If the amount of the lymphatic or follicular tissue present in a tonsil be taken as a measure of its functional capacity, it is found that, although there is a marked tendency to atrophy as age advances, functionally active and inactive tonsils may be met with at any age. Nevertheless it is clear that during childhood the tonsils attain their highest development and activity, and the authors believe that they fulfil, especially in early life, an important protective function. This function may be more or less interfered with by an acute inflammatory process—an acute angina—which prepares the way for a recurrence of similar attacks. "Chronic tonsillitis with free intervals" is nothing but the frequent recurrence of inflammatory attacks in tonsils whose physiological capacity has been subjected to a severe strain. The first attack of acute angina may therefore be the real starting-point of a chronic process which may show little in the way of definite clinical signs or symptoms in the tonsil itself, but may form the basis of a general infective condition.

The histological appearances, as the authors show, vary so much in what is regarded from the clinical standpoint as "chronic tonsillitis" that it is not surprising that the decision that the tonsil is the seat of a chronic inflammation may in any given case be difficult or impossible. It is customary to regard the presence of cheesy collections in the crypts as of great importance; but in most cases these consist of loosened epithelial scales with a moderate number of leucocytes. In a small proportion only do they consist of actual pus, and in these

cases alone can they be regarded as evidence of a chronic inflammatory condition. A microscopic examination of the secretion may give useful information, since the presence of numerous leucocytes will indicate the existence of an inflammatory process in the crypt under examination. On the other hand, bacteriological examination is of less value, as it supplies little or no indication of the virulence to the patient of any organism that may be found.

Reddening of the tonsils and pillars is frequent in healthy persons, especially after meals, and may, moreover, be completely absent during the "free intervals" in cases with chronic disease. It must therefore be regarded as a very doubtful sign. On the other hand, œdematous infiltration, with redness and swelling of the palatal arches, is a definite indication of a collateral œdema in the neighbourhood of an inflammatory focus in the tonsil.

An enlargement of the tonsil should not be regarded as absolute proof of the presence of a chronic tonsillitis. Primarily such an enlargement must be looked on as a compensatory hypertrophy, the result of unusual calls upon its physiological activity.

The presence of deep clefts and pits in the surface of a tonsil is merely an individual peculiarity and cannot, therefore, be regarded as of the least value in diagnosis.

Scarring and cicatricial adhesions between the anterior pillars and the tonsils are important as evidence of disease in the past, and indicate involuntary changes which lessen the functional activity of the tonsil and so render it more or less liable to recurring inflammatory attacks.

The conclusion is that the diagnosis of "chronic tonsillitis" in the pathologico-anatomic sense can be established clinically only when, after long-continued inflammatory trouble, there persists an œdematous swelling of the tonsil itself or of neighbouring parts, or when actual pus, proved by microscopic examination, can be expressed from the crypts. Much enlargement and marked diminution in the size of the tonsil both point to an embarrassment or loss of efficiency in the functional activity of the tonsil and should therefore often lead to a diagnosis of "chronic tonsillitis." Such tonsils are liable to repeated acute inflammatory attacks with "free intervals," so that great importance must be attached to the history of the case, and as Hajek remarks, "The most certain proof of a chronic tonsillitis is always the occurrence of repeated acute attacks."

The concluding section of the paper deals with operative technique and complications. Post-operative hæmorrhage (chiefly on the same day) occurred in 5 per cent. of the cases, and in half of these was treated by suturing the pillars. Hæmoplastin appeared to be of service in some cases. The paper is illustrated by 47 figures, most of them of microscopic sections of normal and diseased tonsils. THOMAS GUTHRIE.

Abstracts

ENDOSCOPY.

Diseases of the Œsophagus. CHEVALIER JACKSON. (*Archives of Oto-laryngology*, Vol. xi., No. 4, April 1930.)

In this brief paper the writer describes four unusual lesions of the œsophagus, namely: urticaria, angioneurotic œdema, serum disease and herpes. The last-mentioned condition is classified as a neurosis, and possibly the other three lesions may come to be placed in the same category. In the meantime the reported clinical facts may be of interest.

1. The angioneurotic œdema occurred in a woman, aged 38, who was suddenly seized with abdominal pain, painless swelling of the right hand, and a swelling of the upper lip, lower lid of the right eye, and the tip of the tongue. Four days later she was unable to swallow solids, and the process of swallowing was accompanied by pain. There was a history of previous similar attacks. Œsophagoscopic examination showed the lumen in the mid-thoracic portion to be occluded by firm, swollen, bleeding nodules springing from the right wall. Each nodule was white, with a zone of intense redness at its base. The symptoms gradually abated, and within two weeks had entirely disappeared. On the second œsophagoscopy the œsophagus was quite normal.

2. The case of urticaria was a woman, aged 43, who was unable to swallow anything, even water. At the same time as the difficulty of swallowing there had appeared an eruption of intensely itching wheals on the chest, back and face. Œsophagoscopy showed a firm, white nodular swelling in the lower part of the œsophagus. On re-examination with a smaller œsophagoscope no permeable lumen was seen, but there was noted a reddened mucosa, with a white ridge extending down the anterior wall of the œsophagus towards the nodular masses. This suggested that a lesion, analogous to that produced on the skin by scratching, had been produced in the œsophagus by the passage of the tube. Treatment consisted in administration of large quantities of water by the bowels. On the fourth day the rash had disappeared and the patient could swallow water without difficulty. A few days later the œsophagus was examined and found to be normal.

3. The case of serum disease of the œsophagus occurred in a boy, aged 18, who had complained of obstruction of the œsophagus four days after the injection of a prophylactic dose of diphtheritic antitoxin. Just below the entrance to the œsophagus the lumen was completely closed by firm, white, nodular masses. The symptoms disappeared within a week and the œsophagus became normal.

4. The case of herpes of the œsophagus occurred in a woman, aged 52, who complained of discomfort and burning in the centre of the chest, extending towards the back. Difficulty in swallowing had

been intermittent during a period of three years, and the attacks had become worse lately. The case had been diagnosed as "cardiospasm" and dilatation had been practised, without benefit. The lower third of the œsophagus showed a chronic inflammatory condition, with some superficial ulceration. General medical treatment combined with local application of bismuth caused the ulcer to heal rapidly within two weeks and the symptoms disappeared. The appearance at several successive examinations is carefully described, and it appeared that the acute primary lesion was probably herpetic. No other lesion would be so evanescent.

The paper is illustrated by water-coloured drawings of each of the conditions described. DOUGLAS GUTHRIE.

MISCELLANEOUS.

Relation of Vincent's Angina to Fusospirochetal Disease of the Lungs. DAVID T. SMITH (Ray Brook, N.Y.). (*Journ. Amer. Med. Assoc.*, Vol. xciv., No. 1, 4th January 1930.)

Three cases of Vincent's angina of the lungs were observed at the New York State Hospital for incipient tuberculosis. Two cases followed primary infection of the throat, while the third was primary in the lungs and began four days after exposure. All three cases were treated with sulpharsphenamine and recovered. Rabbits and guinea-pigs were inoculated while studying the bacteriology. Two guinea-pigs inoculated with sputum from patients before sulpharsphenamine was given had abscess formation and one died. Sputum collected twenty-four and forty-eight hours after the patient had received sulpharsphenamine contained neither fusiform bacilli nor spirochetes, and inoculation of this sputum into guinea-pigs did not produce abscess.

The article occupies five columns, is illustrated, and has an extensive bibliography. ANGUS A. CAMPBELL.

REVIEWS OF BOOKS

"*Human Speech*," *Some Observations, Experiences and Conclusions as to the Nature, Origin, Purpose and Possible Improvement of Human Speech.* By Sir RICHARD PAGET, Bart., with 175 illustrations. Pp. 353, price 25s. net. London: Kegan Paul, Trench, Trubner & Co., Ltd. New York: Harcourt, Brace & Co. 1930.

Sir Richard Paget's lectures and demonstrations have startled and delighted audiences and readers the whole world over and there are probably few who are not prepared to seize the opportunity of studying