ABSTRACTS

EAR.

New Operative Techniques for the Treatment of Chronic Progressive Deafness or Otosclerosis. MAURICE SOURDILLE (Nantes). (*Acta Oto-Laryngologica*, Vol. xv., Fasc. 1.)

The problem of the treatment of progressive middle-ear deafness or otosclerosis might be solved in two ways:—

(1) By dealing with the cause; but so far treatment along these lines has proved ineffective.

(2) By dealing with the effect when the malady is established, namely, to relieve the deafness and associated symptoms, head noises and vertigo.

The writer proposes surgical interference under No. 2.

At the beginning of the century Professor Passow of Berlin developed the idea of trephining the external labyrinthine wall, to decompress, and to create an artificial window to supplement the ankylosed oval window.

His technique consisted in carrying out a clearance of middle ear and mastoid and then trephining the promontory. Gunnar Holmgren modified this technique and used magnifying instruments, but a middle-ear suppuration would be risked by this method.

Bárány later attempted to avoid this complication by shutting off the tympanum by grafts of fat so that he could trephine the external semicircular canal with less risk of infection from the tympanum.

The writer proposes an operation in two stages.

A transmastoid attico-tympanotomy is performed under local anæsthesia. Then the tympanic membrane is displaced by dividing its posterior and superior margin. The head of the malleus is next amputated leaving the incus articulated with the stapes, or the incus may be removed altogether.

A plastic flap of the deep membranous meatus is then cut and turned backwards. This flap is laid over the external semicircular canal and also helps to close the hindmost part of the tympanic cavity.

Several months afterwards the post-aural wound is opened and the mastoid is noted to be quite shut off from the tympanum. The epidermal covering lying over the eminence of the external semicircular canal is next raised as a flap and the trephining of the external canal to expose the membranous canal is carried out, after which the epidermal flap is replaced.

Sufficient time has not yet elapsed to pass judgment, nor have a great enough number of cases been treated to form very definite conclusions, but the results are encouraging. H. V. FORSTER.

Abstracts

Case of Hyperacusis and Hyperæsthesia Acustica on a Psychopathic Base. VLADIMIR HASKOVEC and VLADIMIR HLAVACEK. (*Oto-Laryngologia Slavica*, April 1931, Vol. cxi., Fasc. 2.)

A case is described of a patient, aged 17 years, who in May 1929 began to hear a humming in the ears, and observed an increased sensitiveness for all acoustic phenomena. He was of a quiet studious nature and very industrious; of average scholastic attainment, and prior to his illness had had a predilection for reading and music. The first manifestation of the disease was that the patient shunned society and covered his ears in any noise, even before singing, which formerly he had enjoyed. It was not until a year later when he began to show signs of schizophrenia, that he was examined at an aural clinic, where the following examination of his hearing is given:— *The ear test*: Whisper discerned at a distance of 21 metres; Rinné positive; Schwabach not abridged. The patient hears tuning-forks in all octaves for the same length of time as a normally-hearing patient. By tests repeated several times, it was found that the patient heard the C, C 1, and C 3 forks by 3-4 seconds longer than a normally hearing person. The vestibular organ showed normal irritability.

The author points out that in this case there is not only a subjective feeling of sensitiveness of sound but also an abnormal power of hearing, as proved by these tests, and holds that this is probably more frequent in schizophrenia than is generally supposed.

E. J. GILROY GLASS.

On the Similarity of the Pathological Appearances in Otosclerosis and in Diseases of the Epiphyses in Early Life. F. LEIRI. (*Acta Oto-Laryngologica*, Vol. xvi., Fasc. 1.)

In an earlier work (*Acta Oto-Laryngologica*, 13, 1929) the author maintained that certain parts of the labyrinth capsule were subjected to severe mechanical strains, and that the characteristic localisation of the patches of cancellous bone in otosclerosis corresponded with the regions most likely to be subjected to strain.

In the present paper he attempts to prove that the pathological appearances shown by the affected areas of bone in otosclerosis are essentially the same as those presented by a group of diseases of the epiphyses, known collectively as osteochondritis deformans juvenilis. As in the pathogenesis of this group of diseases mechanical strain is of primary importance, it is reasonable to conclude that the same cause plays a principal part in the development of otosclerosis.

In both otosclerosis and these epiphyseal diseases there is, however, some basic predisposing cause, in the absence of which mechanical strain would not produce its effect. THOMAS GUTHRIE.

Ear

The Microphone Action of the Cochlea. E. G. WEVER and C. W. BRAY, Princetown University. (*Proceedings of the Nat. Academy of Science*, U.S.A., May 1930, Vol. xvi., No. 5; *Psychological Review*, September 1930, No. 5, Vol. xxxvii.; see also E. D. Adrian, *Journ. of Physiology*, Vol. lxxi., March 1931.)

One of the most remarkable and striking demonstrations on the subject of audition ever recorded has been carried out by Wever and Bray of Princetown. They found that by placing an electrode on, or in the neighbourhood of, one exposed auditory nerve of a cat, and the other electrode on an indifferent spot, they could lead off a current of action which, when amplified and passed through a telephone, reproduced with great fidelity all the sounds falling on the ear of the animal. The results are fully attested, and the experiments have been repeated in this country by E. D. Adrian.

It would seem at first sight that so dramatic a demonstration must entirely upset most of the views on the function of the cochlea which have been gaining ground during recent years, and that the implications of the experiments are equally disturbing in the domain of the physiology of nerve impulses. If it be accepted that we have to deal with a current of action in the auditory nerve itself, the seemingly obvious conclusion is that the "telephone theory of hearing" of Rinné and Rutherford, which appeared to be discredited, has received triumphant vindication. Sounds of all frequencies and intensities are reproduced without noticeable distortion. Therefore the frequencies and intensities must be transmitted unchanged by the auditory nerve. Analysis must be "central," *i.e.* in the brain itself. What then becomes of the resonance theory, and of the modern views as to the limits of frequency of transmission of impulses in nerve fibres, and of the equal strength of individual nerve impulses—the "all or nothing" doctrine? These, too, are strongly supported by experimental evidence. How can these apparently discordant results be reconciled? The authors themselves are duly cautious and reserved in expressing an opinion on these points.

In the first place, is the action current tapped by the electrode really generated in the fibres of the auditory nerve? The authors believe that such is the case, though they admit that there are difficulties in accepting this view. The electric disturbances of potential are very widespread. The active electrode may be placed anywhere in electrical contact with the petrous bone, and the current continues to come through. The cochlea may be destroyed on the same side as the auditory nerve which is being tapped and the current still comes through from the opposite cochlea. It ceases when both cochleae are destroyed. The current could be tapped from the brain stem, even when the auditory nerve on the same side is divided. If the remaining auditory nerve is divided, and the two ends maintained in electrical contact, the current could not be

obtained. Neither general anæsthesia nor the application of cocaine to the nerve hindered the current from coming through. The observed reduction of intensity was slight, if any. Adrian has repeated the experiments, and had no difficulty in obtaining the reproduction of the sounds by the telephone. He lays stress on the diffuse distribution of the variations of electrical potential. He obtained the current in a series of eight cats by placing the active electrode over the petrous bone near the cochlea. Further, he found it unnecessary to open the cranium. The active electrode could be placed on the ventral aspect of the petrous bone after opening the tympanic bulla. The effect is greatest when the electrode is in the neighbourhood of the fenestra rotunda. He points out the difficulty of believing that the current is generated in the nerve in view of the fact that it is unimpeded by the usual methods of interrupting the conductivity of nerves, such as freezing, covering the nerve with novocaine crystals, or injecting with 5 per cent. acetic acid. Partial crushing of the nerve makes no difference. Crushing the entire nerve, or cutting it through, reduces or abolishes the effect, but as the arteries to the inner ear run with the nerve, it is not possible to do so without cutting off the blood supply to the cochlea, and so throwing it out of action. Wever and Bray have also shown that interference with the blood supply usually abolishes the effect. Adrian argues with much cogency that the electrical changes have their origin in the cochlea, and not in the auditory nerve. There is no inherent improbability in the supposition that mechanical stimulation of the sense elements of the cochlea (*i.e.* the hair cells) give rise to explosive chemical changes which would be accompanied by disturbances of electric potential similar to those giving rise to the current of action in a nerve, and that such electro-chemical changes should correspond in intensity and frequency with the variations of the mechanical stimulation. If we accept this explanation the problem of the mechanism of the cochlea remains unaltered.

Wever and Bray, however, assume that the current which they have demonstrated is actually a current of action in the auditory nerve, and they outline the various hypothetical modes of action of the cochlea, by which their observations may be interpreted:—

(1) *The Resonance-Telephone Theory.*—This assumes that the basilar membrane and Corti's organ are set in vibration at different levels by sounds of different pitch by the mechanism of resonance, and that the impulses transmitted by the auditory nerve are of the "all or nothing" type, but that they are of the same frequency as the mechanical impulses by which they are evoked. Relative intensity of sound sensations is conditioned by the number of nerve fibres involved, each increment of loudness being the result of the spread of stimulation to an additional nerve fibre.

(2) *The "Telephone Theory," of the original Rinné-Rutherford Type.*—The cochlea is without any analytical function for pitch, so central analysis must be presumed.

(3) *The "Resonance-Volley" Theory.*—The attractive feature of this hypothesis is that it provides a possible explanation of the manner in which the current of action drawn from the whole auditory nerve may retain the same frequencies of variation as those of the sound waves impinging on the cochlea, although the frequencies in the individual fibres of which the nerve is built up are determined by the intensity of the stimulus and not by its frequency, as indicated by Adrian's work on nerve currents. For this it is necessary to introduce the conception of "volley firing" in the nerve fibres. It is to be supposed that each nerve fibre responds by an "all or nothing" reaction to the mechanical impulse, but that the response happens in all the nerve fibres involved at one particular phase of the oscillatory movement of the end organs, just as a squad of soldiers fire their rifles at a particular signal from the drill sergeant. This conception is already familiar as having been invoked to explain our perception of the location of sounds according to phase differences in the waves impinging on the two ears. The separate nerve discharges do not follow one another at the same intervals as those of the oscillations of the basilar membrane, but at intervals varying with the intensity of the stimuli acting on the receptors. The sector of the basilar membrane vibrating in response to a tone of any particular pitch is sufficiently wide to involve a number of receptors with their attached nerve fibres. Those receptors which lie at the centre of the vibrating sector will be stimulated more intensely than those towards the periphery. The nerve fibres connected with them will discharge their volleys at shorter intervals than the peripheral fibres. It is as though the squad of soldiers continued to fire their volleys at a given recurring signal, but some of them took longer to reload than others. At each repetition of the signal some would be ready to fire again, others would not. Some might fire at, say, every second repetition of the signal, others at every 3rd, 4th, 5th, etc. The combined result would be that *some* of the squad would be firing at *each* repetition of the signal, and the successive small volleys would retain the rhythm of the successive signals.

In this theory the conception of the existence in the cochlea of pitch levels, determined by the resonance frequencies of the basilar fibres, is retained. The sense of pitch is determined by the particular group of nerve fibres stimulated, and is always the same for these particular fibres. There is no need, therefore, to invoke "central analysis." The analysis of pitch is made in the cochlea by resonance.

(4) *The "Non-Resonance-Volley" Theory.*—If we are prepared to accept the possibility of "central analysis," the "volley-firing"

conception provides an explanation of the means by which the periodicities of the various sound waves impinging on the cochlea may be conveyed to the brain for analysis. Analysis of these periodicities by resonance in the cochlea becomes superfluous.

Many difficulties and objections may be urged against any of the above theories. Indeed, it would seem that the problem of the mechanism of audition remains much as before. The new facts brought to light by Wever and Bray may be made to fit in, more or less, with any of the existing theories of hearing.

It must be admitted that, if the phenomena demonstrated by these observers are due to a current of action in the auditory nerve, the characteristics of this current are somewhat anomalous. It is extraordinarily widespread in its distribution, and shows no sign of being built up of separate nerve impulses. On the other hand, if we accept Adrian's view and regard the variations of electrical potential in the neighbourhood of the petrous bone as being generated in the cochlea, and not in the auditory nerve, the experiment may possibly throw some light on the nature of excitation of the end organs, a subject on which at present we are entirely in the dark.

G. WILKINSON.

Concerning Early Complications in Cases of Acute Middle-Ear Inflammation. W. KRAINZ. (*Wiener Klin. Wochenschrift*, 1931, Vol. xliv., No. 27.)

Whilst not an advocate of early mastoid exploration in cases of acute middle-ear inflammation with mastoid involvement, the author is of opinion that the surgeon must be ever on the alert for symptoms which would suggest rapidly progressive bone changes and be prepared to interfere early on the appearance of even slight symptoms of intracranial extension of the infection. He gives details of two cases, an adult and a child, in which the symptoms were such as to justify interference as early as the third day. In both cases histological examination of the bone removed from the sigmoidal sulcus showed evidence of active congestive and destructive changes whilst streptococci were cultivated from blood removed from the sinus by aspiration.

J. B. HORGAN.

NOSE AND ACCESSORY SINUSES.

Radiography of the Nasal Sinuses. S. PODVINEC. (*Oto-Laryngologia Slavica*, April 1931, Vol. cxi., Fasc. 2.

AUTHOR'S SUMMARY.

The necessity for making X-ray examinations in cases of accessory sinus disease, more especially in the inflammatory conditions, has been stressed in order to improve the diagnostic methods at present in use, and to make them more exact and reliable.

These examinations can be considerably improved by making an injection of lipiodol into the maxillary sinus.

Fluoroscopic observations of the deposits and all photographs should be taken with the patient in the upright position.

Sinusography makes it possible for us to get a good picture of the anatomical changes in the mucous membrane of the sinuses.

It has enabled the author to get a sound knowledge of the existing relationship between nasal polypi and the paranasal cavities. This method is also useful in pointing out the natural ways for draining the maxillary sinus, and showing the condition of the ostium.

The sinusography of the maxillary sinus is really simple and deserves to be generally introduced into everyday practice. In certain cases of polypi it affects considerably indications for operative treatment.

Diagnosis of the inflammatory lesions by the use of X-rays alone is not possible. In comparison with X-ray examinations "diaphanoscopy" and "diaphanography" have small value because they tell us nothing about the nature of the existing changes.

E. J. GILROY GLASS.

Osteoma of the Frontal Sinus. G. ARMITAGE. (*British Journal of Surgery*, 1931, Vol. xviii., 565, and xix., 158.)

An unusual case is described, "An osteoma of the frontal sinus with an intracranial mucocole, communicating with the ventricle (*sic!*), causing cerebrospinal rhinorrhœa, and radiographically demonstrable filling of the ventricular system with air. Removal of tumour, in two stages, repair of cerebrospinal fistulae at a third operation. Recovery." The operations were by Cushing.

A man of 36, known to have an osteoma of the frontal sinus stationary in size for seventeen years, complained of periodic "filling up" at the root of the nose, causing a dull headache, followed and relieved by a watery discharge from the nose. The symptoms were present for a year. A radiogram report was "size, 6·5 by 7 by 6 cm.; goes through anterior and posterior wall of the sinus; also several collections of air in the left ventricle, the entire left temporal (*sic!*) pole being well filled, indicating a communication between it and the frontal sinus." On this a diagnosis was arrived at of osteoma of the frontal sinus complicated by an intracranial mucocele communicating with the ventricular system.

Cushing performed the first operation under local anæsthesia, and by piecemeal removal two-thirds of the tumour and a part of a multilocular mucocele were removed. The ethmoidal cells were accidentally opened. The frontal lobe was denuded by the removal and discovered to be collapsed, with the "lateral ventricle exposed." The cavity was drained and 40-50 c.c. of blood-stained fluid drained

away daily. (This is assumed to be cerebrospinal fluid, though on what grounds is not stated.) A subsequent radiogram revealed that a third of the original tumour remained. There was air in the ventricles.

The second operation took place nine days after the first, and the osteoma was completely removed by the process of morcellement. The ethmoidal communication was occluded by a muscle graft, and drainage was instituted. As the patient still had his "cerebrospinal rhinorrhœa," a third operation was performed one month later. A huge dry cavity was found, lined by mucous membrane, and communicating with each naris through a right and a left aperture. A fascial implant from the patient's leg was inserted over both openings, under a reflection of the mucous membrane. The wound was closed without drainage, and ten days later was healed and dry, and a radiogram showed the ventricles to be devoid of air. The case was seen some months later, still healed.

With the description of this unique case, a historical survey of osteoma of the paranasal sinuses is given. Veiga in 1506 first described an osteoma of the orbit. The osteoma of the frontal sinus may vary in size from being small to one assuming alarming proportions. Thus Paget's case of osteoma occupied "one half of the one hemisphere, and projected considerably over the forehead, nose and eye." The difficulties encountered by the pioneers, in their attempts to remove the osteoma, were many. The tumour was of ivory hardness, they were unable to determine clinically the extent of the tumour, while the operation was frequently accompanied by a meningitis which proved fatal. As late as 1898, statistics revealed a 45 per cent. mortality from meningitis resulting from removal of the osteoma of the frontal sinus by operation.

In 1880, Berlin advised that "enucleation of the eye should be resorted to when an osteoma of the frontal sinus has broken into the orbit, rather than attempt to remove the tumour."

On the other hand, both Hilton (1836) and Lucas (1805) reported cases of spontaneous recovery following infection and suppuration with extrusion of the tumour.

The first successful operation was performed by Dolbean in 1871. A discussion on the origin of these tumours is given, which refers to the embryological, the traumatic and infective theories of origin.

The paper is an excellent epitome of the subject, though it may be surprising to rhinologists to realise that the cavum ventriculi may be in direct communication with the nasal cavities, without an ascending infection producing a ventriculitis. Might not an intracranial mucocele, containing air, and having extensive ramifications in addition to extensive pressure changes on the frontal lobe, due to transmitted pressure of the tumour, account for all the signs and symptoms?

Larynx

In a subsequent paper (Vol. xix., p. 158) the author describes an osteoma $3\frac{1}{2}$ by $2\frac{1}{2}$ successfully removed by operation from a girl of 20. The bone around the base was chiselled away and the mass levered out, a pedicle extending to the infundibulum.

N. ASHERSON.

LARYNX.

Temporary Paralysis of the Recurrent Laryngeal Nerves following Thyroidectomy. EARLE I. GREENE. (*Surg., Gyn. and Obst.*, June 1931, Vol. lii., No. 6.)

Injury of the recurrent laryngeal nerves, although not frequent, is nevertheless a serious complication of operations on the thyroid gland when it does occur. Most injuries are held by the author to be due to lack of familiarity on the part of the surgeon with the true anatomical position of the nerves.

Opinions differ considerably as to the exact position and relationship of the nerves. The results of Higgins, Berlin and Lahey, and of Fowler and Hanson are quoted: the last, dissecting 200 cadavers, found that the nerves were posterior to the main branches of the inferior thyroid artery in 65·5 per cent. of the cases, anterior in 26 per cent., and ran among the branches in 8·5 per cent. The nerves enter into the most intimate relationship with the thyroid gland on its postero-lateral surface at the junction of the middle and lower thirds, while the left nerve lies deeper in the tracheo-œsophageal sulcus than the right.

Crile maintains that it is not the anatomical position of the nerves, but their marked vulnerability, which forms the main hazard. Crile holds that the recurrent nerves must be grouped with the brain, spinal cord, and the optic and auditory nerves in their response to injury.

The investigations of Judd, New and Mann on the effect of injury to the recurrent nerves following operation showed that if the recurrent nerves were pinched once with a hæmostat, paralysis of the corresponding cord occurred which cleared up in 30 to 60 days; ligation and section of the nerve produced a permanent and complete paralysis of the innervated cord. Stretching the nerve produced no effect provided that no direct injury were applied to the nerve. Crile, however, disagrees with the latter conclusion and holds that the most common cause of injury is due to the pull on the nerve when the goitre is rolled out.

Typical cases are quoted by the author to show that paralysis of the recurrent laryngeal nerves may result at operation from traction on the nerve, and from pressure by pinching with a hæmostat or pressure by the finger. Delayed paralysis may occur as a result of œdema, hæmorrhage or the collection of serum in the surrounding tissues.

Abstracts

Injury to one nerve may be overlooked unless a routine examination of the larynx is made both before and after operation.

Various suggestions are made by the author in order to minimise the risk of injury to the nerves during the course of operation.

S. BERNSTEIN.

The Treatment of Laryngeal Tuberculosis. EMIL WESSELY. (*Wiener. Klin. Wochenschrift*, 1931, Vol. xliv., No. 25.)

The writer considers firstly the methods designed to achieve healing of the laryngeal disease, and secondly symptomatic treatment. The indications for, and the contra-indications to, the various recognised methods of local therapy, including the most modern, such as light therapy and diathermy, or combinations of these methods, are briefly but lucidly referred to.

The Viennese school is absolutely averse to the treatment of pulmonary or laryngeal tuberculosis with tuberculin. What is called the "Spleen cure" is said to exert a tonic influence on the patient and a tendency towards spontaneous cure. The patient is given 5 to 10 dkg. of minced raw spleen in hot soup for three to four weeks; this is repeated after similar intervals. Spleen extract can now be supplied in tablet form. The special utility of the various local anæsthetics for the relief of dysphagia are referred to.

Wessely claims to obtain a cure or at least a very marked improvement of the local lesion in a third of his cases and contrasts this with the assertion of Morell Mackenzie in 1880 that "the prognosis of laryngeal tuberculosis is always extremely unfavourable, and it is doubtful if a case ever recovers." The article is an excellent résumé of the subject.

J. B. HORGAN.

PHARYNX.

Angina and Weather. W. UFFENORDE and A. GIESE. (*Zeitschr. f. Laryngologie, Rhinologie, etc.*, 1931, Band xx., pp. 241-292.)

Professor Uffenorde considers the question of weather and season in relation to the ordinary "cold," and more particularly in relation to post-operative angina, by which he means tonsillitis and pharyngitis following operations in the nose and throat. *E.g.*, angina seems to be a much dreaded complication of submucous resections. Sometimes angina takes the form of a small epidemic, case after case in one ward being affected. Sudden changes in the weather have a definite influence on the occurrence of this complication. It must also be remembered that patients sometimes undergo operations when they are in the prodromal stages of a tonsillitis, and the illness then appears to be a post-operative complication.

Pharynx

In the etiology of the common "cold" the bacteriological factor has been considered all important ever since bacteria were discovered. Physical influences, such as draughts, the heating of rooms, cooling of the body surface, wet feet, etc., are again being considered in their true relation to the causation. Many important animal experiments have been made in this connection and the literature is reviewed by the author.

In the second part of the article Dr. Giese gives a statistical review of extensive clinical material which he obtained by questionnaires from eighteen clinics in Germany, Austria, and Switzerland. This material covers 4733 admissions for angina and 1942 cases of post-operative angina, the latter group being more particularly analysed. More than two-thirds of all these complications occurred after submucous resection of the nasal septum. Among 9388 nose operations post-operative angina occurred in 14 per cent. The question of packing or not packing the nose after the septum operation is discussed, and the conclusion is reached that this has no influence whatever on the development of post-operative angina. After tonsillectomy angina is comparatively rare. It takes the form of pharyngitis, inflammation of the lateral strands of lymphoid tissue, fever, and swelling of the cervical glands. In very severe cases the illness may develop into a general septicæmia.

An analysis of all the cases shows that the two summer months, July and August, are always comparatively free from angina, many more cases occurring in the winter months. Many patients were tested before operation for the presence of hæmolytic streptococci in the nose and throat. Although streptococci were often found, these tests proved quite useless for determining beforehand whether or not complications were likely to arise. J. A. KEEN.

The Symptomless Occurrence of Tubercle Bacilli in the Tonsillar Tissue in Cases of Recurrent Articular Rheumatism and in Cases of Retro-Bulbar Neuritis. KARL AMERSBACH, ARNOLD LÖWENSTEIN, and ERNEST LÖWENSTEIN. (*Münch. Med. Wochenschrift*, 1931, No. 26.)

The writers propound the theory that there is a causative relationship between the existence of seemingly latent foci of tubercle in the tonsils and the two affections referred to in the title of this paper. Ritter and E. Löwenstein have established the fact that individual tubercle bacilli are of not uncommon occurrence in the circulating blood of patients suffering from articular rheumatism and that their existence can be proved by culture. Later investigations have shown that this culture-proof is possible in 85 per cent. of such cases during febrile attacks. Stimulated by these facts the above authors are investigating a further series of cases with the object of ascertaining the possible co-existence

of tuberculous foci in the tonsils in these cases. Fourteen cases of polyarthritis have had the dual examination of blood and tonsils carried out to date. Of these five gave a positive tubercle bacilli culture from the tonsils, whilst cultures from the collected and citrated blood remained negative. Amersbach had each of these cases examined by all available clinical means for evidence of open tubercle infection in the lungs or elsewhere. The pathogenicity of the cultures obtained was proved by the injection of guinea-pigs.

The authors express the strong opinion that retro-bulbar neuritis is but an early symptom of multiple sclerosis and that the latter is also a sequel to chronic latent foci of tuberculous infection. Though, as regards the tonsils, the actual number of cases has been small, the authors desire to put their findings on record for the purpose of guiding other investigators along similar lines. J. B. HORGAN.

X-Ray Treatment of Chronic Tonsillitis. O. MAYER. (*Wien. Klin. Woch.*, 1931, Vol. xliv., No. 18.)

Mayer's observations are based upon two patients who had ineffectively undergone X-ray treatment for chronic tonsillitis in America. The tonsils were small, cirrhotic and very septic. In both cases removal was unusually difficult owing to adhesions and hæmorrhage. Both cases suffered from severe dryness of the pharynx and in one case the pathological appearance suggested xerosis. Mayer attributes this to the simultaneous irradiation of the salivary glands.

On histological examination excessive irregular fibrosis was found with scanty adenoid tissue and deep cystic crypts, filled with pus and débris.

Mayer suggests the probability that irradiation of the tonsillar regions may injure the larger vessels and nerves as well as the cervical ganglia and so induce trophic changes. J. B. HORGAN.

ŒSOPHAGUS AND ENDOSCOPY.

Bronchial Stenosis in Children from Disease of the Hilus Glands. E. HUIZINGA. (*Acta Oto-Laryngologica*, Vol. xvi., Fasc. 1.)

Compression stenosis of a bronchus may be due to various diseases of the mediastinum, but a common cause, especially in children, is enlargement of the Hilus glands.

The author describes six cases of this kind. Two of these were the result of an acute lymphadenitis. The other four were cases of tuberculous disease of the glands. In two of these the blocking was due to the presence of caseous masses, while in the other two it was

caused by exuberant granulations which formed after spontaneous expulsion of the caseous material by coughing.

Attention is drawn to the acute onset of the symptoms in these cases, which is always suggestive of the presence of a foreign body. The diagnosis can be established only by bronchoscopy, which may also give valuable aid in the treatment by rendering possible the removal of caseous material and granulations, so as to free the obstructed bronchus. The most frequent site of rupture into a bronchus is the point of origin of the right bronchus from the trachea.

THOMAS GUTHRIE.

Trophic Innervation of the Striated Muscle of the Œsophagus. K. KURÉ, T. ISSHIKI and T. SHIBA. (*Arch. Ohr-, u.s.w. Heilk.*, April 1931, Band cxxviii., pp. 180-200.)

This is a histological study of the innervation of the upper part of the œsophagus, with many illustrations in the text which show the end-plates of the vagus and sympathetic nerves among the striated muscle fibres. Animal experiments were undertaken by the authors, dogs being used, as the œsophagus muscle in that animal is largely of the striated type, except for a small part near the cardia; while in man striated muscle extends only for 3-4 cm. from the cricoid.

In some dogs the cervical sympathetic was removed, in others the vagus was divided. After varying intervals the animals were killed and the muscle changes in the œsophagus were studied. Similar changes of the nature of dystrophy were found in a patient with tabes who had left-sided vagus paralysis; also in a patient whose right cervical sympathetic had been extirpated as a therapeutic measure and who died a year later.

J. A. KEEN.

MISCELLANEOUS.

Case of Primary Synchronous Duplicity of Malignant Tumour. ZDENEK KOCKA. (*Oto-Laryngologia Slavica*, April 1931, Vol. iii., Fasc. 2.)

The case is described of a man, aged 52 years, who was admitted to hospital with history of huskiness for eight months—worse during the previous three weeks. He had had an ulcer on the left ala of the nose (which began as a superficial scratch) for about three years.

A tumour of the right ventricular band of the vocal cord, which was described as a spino-cellular carcinoma, with parakeratosis, and probably due to a malignant degeneration of a papilloma, was found, and the ulcer of the nose was found to be a basal celled carcinoma with amyloid degeneration of the vessels of the stroma (the so-called amyloid tumour).

E. J. GILROY GLASS.

Reviews of Books

Some Cases of Endothelioma in the Upper Air and Food Passages. K. BARMWATER. (*Acta Oto-Laryngologica*, Vol. xvi., Fasc. 1.)

The author describes three cases of endothelioma (one in the nasal cavity and two in the fauces) lately observed by himself, and he gives details also of seven cases occurring in the records of the State Hospital at Copenhagen since the year 1910. In these seven cases the growth was situated in one in the tonsil, in three in the upper jaw, in one in the palate, and in two in the nasal cavity.

The endotheliomata are rare tumours and are for the most part benign, in so far as they never form metastases and are usually well marked off from their surroundings. They do, however, sometimes recur after removal, and the very cellular varieties tend to infiltrate. Such forms approach the soft sarcomata in histological appearance.

On the whole, in the ten cases described in this paper the clinical course of the disease corresponded well as regards the degree of malignancy with what was anticipated from the microscopic appearances. THOMAS GUTHRIE.

Osteomyelitis of the Hyoid Bone. TH. HÜNERMANN. (*Zeitschr. f. Laryngologie, Rhinologie, etc.*, Feb. 1931, Band xx., p. 319).

This is an extremely rare condition which has been described only three times in the literature of general surgery. From the laryngological side the case described here appears to be the first one. The clinical course was that of a deep-seated neck abscess, the patient complaining of persisent severe pain on swallowing and on moving the tongue. For a long time there were no laryngeal signs, later œdema of the epiglottis appeared. The diagnosis was not made until the abscess was incised from the outside and a sequestrum, consisting of the greater part of the left half of the hyoid bone, was found loose in the abscess cavity. J. A. KEEN.

REVIEWS OF BOOKS

Notes on Chronic Otorrhœa. By A. R. FRIEL, M.A., M.D., F.R.C.S. Bristol: John Wright & Sons, Ltd. Pp. 88. Price 6s.

Dr. Friel's book is devoted practically entirely to the treatment of chronic otorrhœa by zinc ionisation. The first part of the book deals with the explanation of the physics of the phenomenon. Illustrations are profuse, readily understandable and are described in simple language. The subject is made easy and interesting.

Part II. concerns treatment. Detailed instructions for the cleansing of the ear are given. The author next examines the causes of the