Ophthalmic and intranasal examination negative. Hot fomentations reduced the œdema in a few days, when a tense, tender, ill-defined swelling could be made out, extending from the external angular process to the inner canthus.

Diagnosis.—? Orbital cellulitis, ? suppurating dermoid, ? sarcoma. Through an incision below the line of the eyebrow, a hard firmly adherent mass, the size of a large broad-bean, was removed with difficulty.

Pathological Report.—Fibrous tissue stroma, probably produced by chronic inflammation. In this are groups of glandular acini and ducts with considerable evidence of chronic inflammation, which may be tuberculous, though this is not quite certain.

The structure is no doubt the lachrymal gland. It is not a malignant tumour. The wound healed by first intention. Removal has not affected the eye.

Chronic inflammation of the lachrymal gland is seldom met with, and if, in this case, the suspicions of the pathologist that the gland is tuberculous are confirmed, a very rare condition will have been recorded. Although the case proved to be beyond the confines of rhinology, the clinical signs suggested an acute inflammatory process in the orbit, probably secondary to infection from the nose.

ABSTRACTS

THE Abstracts this month, which are taken principally from the *Zentralblatt f. Hals-, Nasen-, und Ohrenheilkunde*, 1928, Vol. xiii., pp. 34-64, are of the first group of papers read at the First International Congress of Oto-Laryngology at Copenhagen, August 1928.

The "Rapports" are not included in these Abstracts. They have been published in full as a Supplement to the *Acta Oto-Laryngologica*, and abstracts of them will appear in the *Journal*. They are:—

"Septicæmia of Pharyngeal Origin," by W. Uffenorde and G. Ferreri.

"The Conservative Radical Mastoid in Chronic Middle-Ear Suppuration," by H. Neumann.

"The Treatment of Cancer of the Pharynx, Larynx and Œsophagus by Diathermy," by Dan McKenzie.

"The Diathermy Treatment of Malignant Tumours of the Nasal Cavities and of the Naso- and Meso-Pharynx," by G. Holmgren.

Abstracts

Among other papers not dealt with in these Abstracts are Prof. T. T. Harris's article on "Training in Oto-Laryngology in America," which was published in the May number of this *Journal;* Dr Carmody's paper on "The Development of the Sinuses in Children," which has appeared in the March number of the *Annals of Otology;* Maljutin on "The Influence of the Structure of the Soft Palate on Nasal Respiration," which appeared in the *Oto-Laryngologica Slavica* and was reviewed by Sir James Dundas-Grant in the April number of the *Journal;* and Sercer's paper on Laryngectomy, which was reviewed by Mr Wilkinson in the same number (pp. 282 and 285).

It is hoped to complete the abstracts of the short papers in the next number of the *Journal.* Notes on the discussions appear with the corresponding papers.

F. W. WATKYN-THOMAS.

EAR

The Application of Medical Science to the Problems of Acquired Deafness.
W. PHILLIPS, New York.

The American Federation of Organisations for the Hard of Hearing is made up of more than sixty local groups, and co-operates with the Otological Societies, the National Research Council, the American Medical Association, and allied Medical, Social, and Educational Bodies. Social workers are being trained for this special purpose. Lectures are given on the care of children's hearing, surveys of schools, oral hygiene, and warnings against quackery.

The development of the phonograph audiometer by the Bell Telephone Laboratories makes it possible to examine large numbers of children. The examination of many thousands of elementary school children shows that at least 12 per cent. of them have defective hearing. This means that in the United States alone there are over three million children of school age with some degree of deafness. "Hard of Hearing" children, unlike the congenitally deaf, should not be educated in special schools, but should be given lip-reading in the elementary schools under normal environment.

Testing of the Acuity of Hearing of School Children by the Audiometer.
H. NEWHART, Minneapolis.

In the past two years, Newhart has examined some 50,000 children, principally in the public schools in Minneapolis. The "multiple telephone" audiometer has made it possible to examine

large groups of children with reasonable accuracy. This method enables the otologist to detect slight degrees of deafness at an age when the best results can be obtained in the prevention of progressive deafness. The instruments and procedure were described at length.

Forty-eight children can be tested at the same time. The method of testing is by numbered gramophone plates giving an ever-increasing weakness of sound. The children repeat the records, and the last number not clearly heard gives the acuity of hearing in terms of the sensitivity.

Observations on Shrapnel's Membrane on the Living Subject under a 10-20 *Magnification.* E. LÜSCHER, Berne.

Lüscher, from the examination of a large number of cases with his aural microscope, concludes that (1) a genuine description of the normal pars flaccida is now possible; (2) atrophic areas can readily be distinguished; (3) a good picture of the boundaries of the defects can be obtained. The results of his investigation confirmed the views of Bezold and Wittmaack with regard to the formation of cholesteatoma.

In reply to von Eicken, the lecturer said that the principle of the Siegle speculum could be easily and satisfactorily applied to his microscope.

The Mechanism of Certain Types of Otalgia.
R. FENTON and O. LARSELL, Oregon.

In a paper illustrated by their own slides, microphotographs and reconstruction diagrams, the authors discuss the afferent tracts from the sphenopalatine ganglion region. After mentioning the views of Sluder, van Gehuchten, Hunt, Wilson, and others, they describe the origin of the 7th, 9th, and 10th nerves, and the components of the vidian and petrosals.

According to the authors afferent fibres from the sphenopalatine ganglion pass through the great superficial petrosal nerve to cells in the geniculate ganglion. These are visceral sensory fibres. Somatic cells and fibres of the ramus cutaneus facialis transfer the impulse to the peripheral distribution. Sensory fibres were also traced to the carotid sympathetic plexus through the deep petrosal. The authors believe that from there they may reach the ganglion of the 9th and 10th. . This would account for pain in the neck and tongue following lesions of the sphenopalatine ganglion.

The Etiology of Mastoiditis. N. IBRAHIM, Constantinople.

The cause of mastoiditis is narrowness and deformity of the aditus. Therefore for the production of mastoiditis one cannot blame the method of treatment of the otitis media, because mastoiditis can

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occur in cases of otitis media however well and carefully they are treated. Myringotomy cannot prevent the occurrence of mastoiditis. The cause of mastoiditis is the internal structure of the mastoid, and the disease cannot be regarded merely as the sequel of an otitis media.

Translabyrinthine Operation for Tumours of the Eighth Nerve. O. KUTVIRT, Prague.

Kutvirt describes four cases of acoustic tumours which he had attacked by the translabyrinthine route. In three of these he had had complete success. In the fourth the tumour lay nearly in the foramen magnum, in such a position that it could not be reached through the labyrinth. In this case the patient died of meningitis four months after the operation.

In the discussion, Bourguet said that he held very reserved opinions on the methods of approaching acoustic tumours.

Quix referred to the principal danger of the translabyrinthine method, namely the infection of the meninges through the Eustachian tube.

Voss said that for the same reason he had chosen the posterior route.

Bacterio-Therapy of Suppurative Otitis Media and Chronic Suppuration of the Antrum of Highmore with B. Bulgaricus. O. S. MEEROVIC, Leningrad.

Meerovic states that he has obtained a complete cure of chronic middle-ear suppuration, and of chronic suppuration in the antrum of Highmore by treatment with milk cultures of *B. Bulgaricus*. This represents a cure in 70 to 80 per cent. in all cases for which he has tried it.

A Modified Radical Operation for Chronic Mastoiditis. H. N. BARNETT, Bath.

A modification of the radical operation is urgently called for on these grounds:—

1. The radical operation is usually unnecessary. It is the duty of the aural surgeon to preserve, rather than destroy, the hearing.
2. The radical operation is not always completely successful from the standpoint of general surgery.
3. In cases of bilateral disease it is not possible to perform the operation on both sides.
4. The procedure usually causes a complete deafness.
5. Often the operation is postponed, owing to its severity.

The Ear

A Peculiar Case of Ménière's Disease. DE KLEYN, Utrecht.

In this patient, a lad 18 years old, de Kleyn observed two distinct vestibular disturbances.

I. An ordinary Ménière's attack with vertigo, which appeared referable to a semicircular canal irritation.

II. A vestibular phenomenon of a more tonic nature, that must have been produced by some functional disturbance of other parts of the vestibular apparatus, as the tonic labyrinth reflexes were unaffected.

On a Particular Form of Vertigo Associated with Accessory Sinusitis. M. JACO, Lyons.

Occasionally there exists with anterior or posterior sinusitis, sometimes suppurating, or even more commonly in the absence of suppuration, a permanent vertiginous state, quite distinct from the typical aural vertigos, and independent of any lesion of the ear. This sense of disordered equilibrium is not rotatory in nature, but is always in the sagittal plane, predominantly anteriorly or posteriorly according to the localisation and severity of the sinus lesion. It comes and goes with the symptoms of the sinusitis; it returns with any recurrence and it sometimes persists in a diminished form as the only residue of the infection. It is usually accompanied by an intermittent sense of weight in the head, and a marked sensibility to cold.

The Diagnosis of Brain Tumours: Head Position Nystagmus in Brain Tumour. C. O. NYLÉN, Stockholm.

After a reference to the epoch-making researches of Magnus and de Kleyn on the positional nystagmus, Nylén gave an account of his own investigations of the nystagmus in different positions in a large number of cases in which the presence of a cerebral tumour had been definitely proved. As a result of the examination of 101 of his own cases at the Serafimer Hospital, in all of which the diagnosis had been confirmed by operation or by autopsy, he emphasised the importance of examination of nystagmus in all suspected cases of intracranial tumour. He had found this method a more valuable aid to diagnosis in such cases than all the other cerebellar and labyrinth signs.

The paper was illustrated with tables and photographs, and with a cinematograph film of a case of cerebellar tumour with a well-marked positional nystagmus.

S. H. Mygind agreed that changes in the head-position would produce a nystagmus in the presence of brain tumours, particularly in lesions of the posterior fossa.

Quix asked whether a histological examination of the labyrinth had been made in the fatal cases.

Brunner asked whether the lecturer had found these signs in cases where there was no choked disc? In his experience decompression altered the quantitative irritability of the labyrinth.

In his reply, Nylén said he could recall one case where papillœdema was present. Histological examination of the labyrinth had not been made.

Otological Findings in Tumours of the Brain. E. RUTTIN, Vienna.

In his description of the otological evidence for the localisation of brain tumours in different positions, Ruttin pointed out that it was rare for a brain tumour to give the signs for exact localisation as the diagnosis was always obscured by the effects of pressure, both on the long tracts and on neighbouring regions. At the same time, the cochlear and vestibular tests were of great importance themselves, and equally important were progressive changes in cochlear and vestibular symptoms. They were particularly valuable for tumours of the auditory nerve and the pons, and for cerebellar tumours in their later stage; but they were also most valuable in the differential diagnosis between middle and posterior fossa lesions.

In the discussion, Wanner spoke favourably of his method of localisation of brain tumours with the aid of a phonendoscope, which he had practised for twenty years.

Blohmke drew attention to the incongruity of the early and late symptoms in lesions of the middle fossa with gross disturbances of equilibrium.

Galvanic Reaction in Diseases of the Labyrinth, the Brain, and in the Normal Subject. VILAR Y ABADAL, Barcelona.

Even in health, although the typical reaction is usually obtained, in a considerable number of subjects it is diminished or paradoxical. In unilateral labyrinth disease where the lesion is circumscribed an abnormal reaction is obtained, which, however, is not constant. It varies in different cases and appears to be altered by the position of the head. In cerebrospinal cases there is usually an increase in the central reaction and a weakening of the peripheral reaction.

On the Nervous Mechanism of the Vestibulo-Ocular Movements. R. LORENTE DE NÓ, Madrid.

By registration by graphic methods of the changes in the labyrinthine reflexes after injuries to the nerve centres, the extent of which were confirmed by histological examination of the operated brain, evidence has been adduced to show that the labyrinth reflex of the eye-musculature can be produced after division of the posterior longitudinal bundle and the other tracts that pass from the vestibular nuclei in the medulla to the nuclei of the oculo-motor nerves.

de Nó believes that the afferent impulse of the reflex must travel through the substantia reticularis. He also suggests that there are, in the substantia reticularis, not only additional supranuclear centres for the slow phase, but also deep connecting tracts for the rapid component of nystagmus.

The paper was illustrated by slides of the curve graphs, and sections of the brains on which the author had operated.

Experiments on the Muscle-Tonus of the Limbs and Neck in the Pigeon. C. E. BENJAMINS and E. HUIZINGA, Gröningen.

In this paper the authors describe a method of obtaining a more exact measure of the changes of muscle-tonus. Their results are expressed in curves which give an exact representation of the effect of the different reflex actions on the muscle-tonus; these are then excluded in turn by partial or total destruction of the labyrinth, by division of the posterior roots of the spinal nerves, by general anæsthesia, etc.

Some Remarks on Caloric Nystagmus. A. DE KLEYN and C. VERSTEEGH, Utrecht.

I. In mammals the caloric reaction most probably arises in the semicircular canals. This opinion is based on the following experiments:—

(1) The direction of the caloric nystagmus depends on the position of the horizontal semicircular canal.

(2) A normal caloric nystagmus can still be evoked (*a*) after having detached the otolithic membranes of guinea-pigs by centrifugalising, (*b*) after extirpation of the whole saccular macula (epithelium and otolithic membrane), (*c*) after cutting through, at least the greater part, of the utricular nerve.

II. The usual clinical method of examining the labyrinthine caloric reactions with cold water only, and only in one position of the head in space, is apt to give rise to wrong conclusions concerning the irritability of the vestibular part of the labyrinth: (*a*) the so-called caloric reactions after labyrinthectomy; (*b*) cases in which the irritability is influenced by the central nervous system.

Experimental Research on the Communications between the Perilymph of the Inner Ear and the Subarachnoid Spaces in Man and Animals. B. KARBOWSKI, Warsaw.

In the preliminary experiment it was shown that, in dogs, infections of the labyrinth passed to the meninges through the aqueduct of the cochlea. It remained to be proved whether there was, normally, a patent communication between the perilymph and the subarachnoid space by this or any other route. It was found possible to inject the perilymph space with gelatine-indigo-carmine by the suboccipital route

in narcotised rabbits and dogs, and similar results were obtained on the bodies of newly-born children—here Indian ink was used. These experiments showed not only that there is a free communication in man between the cerebrospinal and perilymphatic spaces, but also that there are possible communications between the subarachnoid spaces and the marrow spaces of the petrous, and between the subarachnoid spaces and the subepithelial tissue of the paries jugularis. These results explain the early onset of meningeal signs in some cases of middle-ear inflammation, and also the occurrence of middle-ear inflammation in the course of an epidemic cerebrospinal meningitis.

NOSE AND ACCESSORY SINUSES.

Clinical and Pathological Observations on Vasomotor Coryza (Cold in the Head). C. A. TORRIGIANI, Florence.

The paper is principally concerned with the symptoms and pathogenesis of the various forms of coryza. The author holds that there are two factors—an alteration in the reflex mechanism, and a change in the permeability of the capillaries and of the basilar membrane. Thus vasomotor coryza may be produced by disease of another organ, affecting the reflex mechanism, or by the effect on the mucosa of toxins from a distance produced by some remote infection. The author has been able to demonstrate definite microscopic changes, not only in the mucosal cells, but also in the connective tissue in chronic cases.

Of the Treatment of Ozæna with Pilocarpine and Potassium Sulphocyanide. F. LEIRI, Helsingfors.

At the commencement of the treatment, the mucous membrane is painted six times weekly with 1 per cent. pilocarpine solution. This is usually done for from three to five weeks; in one case it had to be done for twelve weeks. The intervals between the paintings are lengthened until it is only done once in four weeks. The painting is combined with irrigations of the nose, carried out by the patient himself. Potassium salts are used in the irrigation fluid, as potassium has a stimulating influence on the sympathetic nervous system. A minute quantity of potassium sulphocyanide is present in the normal nasal secretion, but it is absent in true ozæna. For this reason, and on account of its bactericidal qualities, Leiri uses it in his irrigating fluid. In all cases treated by this method there has been a substantial improvement.

In the discussion, Hajek said that all therapeutic measures could only give symptomatic relief. Cure was an anatomical and physio-

logical impossibility. There could be no regeneration of the destroyed cavernous tissue and glands of the mucous membrane, although microscopically the appearance of the atrophic membrane might improve by softening and some return of normal elasticity.

Mühlenkamp spoke favourably of Halle's modification of Lautenschläger's operation for ozæna, which he had used for seven years. From the patient's point of view, he had had good results from Hinsberg's operation.

Citelli disagreed with Hajek's views. He had had two cases of severe ozæna with considerable atrophy of the inferior turbinals. Three years after his biological treatment the turbinals were hypertrophic and vascular, and the abnormal width of the nasal cavity had disappeared. Here at any rate, we were entitled to speak of perfect anatomical cure, even though it might not be histological.

Helman mentioned the relation between diphtheria and ozæna. He had seen cases where ozæna occurred after non-specific treatment in children and had been cured by serum.

Meerowitsch advised further investigations of treatment by milk-cultures of the bacillus Bulgaricus.

Laskiewicz advised sympatheticotomy, to be followed by hæmatherapy.

Szmurlo moved for an international inquiry on the etiology, pathogenesis, frequency, etc., of ozæna.

Polypus in Ozæna. V. HIRSCH, Vienna.

The simultaneous occurrence of atrophic and hypertrophic processes give the clue to the formation of nasal polypi in the accessory sinuses. In the majority of cases polypi arise in the middle meatus; elsewhere they are rare. Moreover, the origin of polypus is usually associated, not with suppuration in the accessory sinuses, but with a catarrhal inflammation therein.

Lastly, the commonest site of origin is not the cells of the ethmoidal labyrinth, but the antrum of Highmore. From this it can be seen that polypi may be present with atrophy of the nasal mucosa.

Further Work on the Mixed Vaccine of Marschik-Busson in Ozæna. H. MARSCHIK and SCHNIERER, Vienna.

The authors give the results of four years' experience with their mixed vaccine. About 150 cases were treated, of which 94 are discussed here. As a rule at least 40 injections were given, in some cases as many as 60 or 70. The injections were given at shortening intervals until a maximal injection could be given every third day.

In at least 75 per cent. of cases there was permanent disappearance of fœtor; in an important, but diminishing percentage, an improvement

or disappearance of crust formation; in a small proportion, an improvement of the atrophic condition. The small amount of improvement in the last group is not surprising, as the treatment was specially reserved for the most inveterate cases that had proved refractory to all other methods of treatment. At present the treatment with the mixed vaccine of *Bacillus capsulatus* must be regarded as supplementary to other therapeutic methods.

Signs and Treatment of Ethmoidal Neuralgia. Z. VEIN, Budapest.

The anterior ethmoidal nerve, like other branches of the trigeminal, is very subject to neuralgia. The principal symptoms vary from a vague sense of oppression up to lancinating pain about the root of the nose, and a continual fullness and dryness of the antero-superior portions of the nasal passages without any visible causative condition of the nasal cavities. That the trouble arises in the area of distribution of the anterior ethmoidal is confirmed by the fact that pain of exactly the same nature and localisation occurs in suppuration or polypus formation in the anterior ethmoid labyrinth.

Treatment should be limited to warm applications and painting the mucous membrane of the olfactory cleft.

Scleroma. B. FELDMANN, Minsk.

Since the European War there has been a great increase of scleroma. The author, who practises in a region where scleroma is endemic, has seen 200 cases in five years. In the clinical picture he regards as particularly important from the point of view of diagnosis, the atrophy of the mucosa of the upper air-way and the serum test. In his opinion there is definite evidence of familial infection. He urges the necessity of the notification of all cases of scleroma, and suggests the formation of an International Commission for the organisation of further research on the subject.

Histopathology of Rhinoscleroma. J. SZMURLO, Vilna.

In the majority of cases the scleroma first attacks the nose, where it develops in the anterior portion of the septum. The next commonest place of attack is the larynx, especially the subglottic region. The characteristic trait of the scleromatous tissue is its cartilaginous hardness to touch, while at the same time it can quite easily be cut, even in old cases where the cicatricial tissue is already developed.

Another characteristic trait is the absence of any tendency to ulceration and its relative resistance to injury.

The microscopic appearances vary considerably at different periods of the disease.

Nose and Accessory Sinuses

Results of Treatment of Scleroma by X-rays and Surgical Diathermy. A. Dobranski, Lwoff.

Considerable improvement and even cure in cases of scleroma can be obtained by the use of X-rays. At the same time as the X-ray treatment, mechanical dilatation must be employed to avoid stenosis by contraction of scar tissue. When the application is made to the stenosed larynx a preliminary tracheotomy should be done to guard against suffocation during the period of reaction.

Bronchoscopy should be used for stretching the bronchi and trachea. Only weak doses of X-ray should be employed ($\frac{1}{4}$ erythema doses) and for periods from three to six weeks.

In gross scleromatous infiltration of the nose, surgical diathermy gives excellent results, but to avoid a relapse and to reach the deeper-seated deposits this must be combined with X-ray treatment.

Rhinoscleroma in Bulgaria. S. Belinoff, Sofia.

Belinoff reports that although up to date only one proved case of rhinoscleroma in which the diagnosis was confirmed by histological and bacteriological examination has been notified in Bulgaria, he has himself seen three cases that clinically suspiciously resembled rhinoscleroma.

He suggests that rhinoscleroma shall be one of the subjects chosen for discussion at the next International Congress of Oto-Rhino Laryngology.

The Treatment of Rhinoscleroma by Chemical Methods. C. Szumowski, Lwoff.

In his clinic the author has treated 18 cases of rhinoscleroma of the respiratory tract by different chemical agencies. In 7 cases he used intramuscular injections of luatol (a watery solution of sodium and potassium bismuth tartrate) with a striking improvement in 4 cases.

In 5 cases he used intramuscular injections of a mixture of bismuth, quinine, and iodine, with improvement in 3 cases.

In another 5 cases he gave subcutaneous injections of quinine and intravenous injections of novarsenbenzol Billon, with improvement in 2 cases.

He used argochrome (a methylene-blue compound of silver) in one case but found no improvement.

The cases were under observation from two to eight months. A considerable improvement in 9 out of 18 cases of rhinoscleroma is a strong indication for the advisability of further study of chemical methods in the treatment of this disease.

Abstracts

A Morphological, Biochemical and Serological Study of the so-called "Bacillus of Frisch" in Rhinoscleroma. B. ELBERT, Minsk.

In the serum of rabbits and horses a pure culture of the bacillus of Frisch produces a specific antibody. For this reason the complement reaction is the surest method for the diagnosis of rhinoscleroma, either in the clinically well-developed form, or in the early stages. The question of the agglutinability of the bacteria of the muco-capsulate group thus becomes of considerable interest. In the serum of animals immunised with the bacillus, agglutinins are formed which precipitate only the mucus-dissolving cultures of the Frisch bacillus. In the serum of patients suffering from rhinoscleroma these specific agglutinins are always present.

The writer believes that the serological reaction provides an exact means of diagnosis. He further points out the importance of the disease over the whole regions of the Pripet, Dnieper, Vistula and Danube, where it is still spreading.

PHARYNX.

Abscesses of the Naso-Pharynx, Tonsils, Base of the Tongue, etc., that may track into the Neck and Mediastinum. O. GLOGAU, New York.

All abscesses arising from the upper air passages show the characteristic of tracking from the peripharyngeal spaces into the vascular spaces of the neck that lead into the mediastinum. However different the place of origin may be, all these descending abscesses follow the same track, and may be reached by the same method. Through a low incision across the superficial fascia of the neck, the vessels are reached by blunt dissection. The anterior "collar" mediastinum is exposed and sealed with a tampon of iodoform gauze. The posterior space is now exposed by lifting the thyroid gland, which brings into view the wall of the œsophagus. If the infection has not reached this point, the mediastinum is closed by a tampon (prophylactic mediastinotomy of Marschik).

For the drainage of abscesses descending from the lateral pharyngeal wall the inferior belly of the digastric gives the line of attack; a dressing forceps is introduced in the space below the muscle and pushed upward into the parapharyngeal space. Throughout, the inner wall of the jugular sheath gives the outer landmark.

Œdematous Phlegmon of the Throat. N. ST ARIFER, Sophia.

This is a rare condition of the throat which at first sight much resembles an ordinary phlegmon, but such a resemblance is only superficial. The appearances suggest suppuration, but incision in

every direction and for any depth never finds pus. The anterior and posterior pillars share in the general swelling. The condition is usually unilateral, but may be bilateral.

The œdematous phlegmon may occur in patients whose tonsils have been completely removed.

The Origin of Pharyngeal Infections. G. G. BAQUERO, La Coruna.

The conditions determining liability to pharyngeal infections are largely congenital, but the immunity of more resistant subjects can be undermined by repeated infections of the lymphoid tissue of Waldeyer's ring. Once the balance between resistance and susceptibility has been destroyed massive degeneration of the tonsils quickly takes place, and they become a dangerous portal of entry for infection. As in a large proportion of cases many symptoms disappear immediately after tonsillectomy, Baquero advises removal of tonsils in all cases where they are infected and degenerated, whether they are large or small. He points out that small tonsils are often the more dangerous. On the other hand, the undeteriorated tonsils found in healthy individuals should not be interfered with.

A Contribution to the Study of Septicæmia of Pharyngeal Origin. JUAN R. PORTELA, Cadiz.

From a study of his own cases and comparison of them with others, Portela concludes that the most dangerous infections, and those which are most likely to produce a generalised septicæmia, are the group of "Pseudoperitonsillitis"—*i.e.*, cases in which there is no abscess formation. The primary inflammation of the pharynx is a sign of the entry of organisms into the body, and the subsequent course of infection depends on their different species, staphylococci or streptococci, and on their specific virulence. Portela backs up his views with numerous cases, and comes to the following conclusions:—

1. A pseudophlegmenous angina is only the first sign of the invasion of the pharyngeal substance by infections of the most diverse nature and virulence; it can be caused by mild as well as by severe infections, and from septic foci at some distance.

2. These remote septic foci come into play through the spread of organisms and of toxins both by the blood and the lymph streams.

3. The group of symptoms referable to these remote septic foci may become manifest either at the beginning of the pharyngeal condition or later.

Four Cases of Pneumococcal Peritonsillitis. RENÉ MIÉGEVILLE, Paris.

The lecturer reported four cases of "pseudophlegmenous" tonsillitis and peritonsillar inflammation caused by pneumococcal infection, which ran a course of nine days without abscess formation. The severe onset, massive œdema, and slow resolution combine to form a characteristic

picture, and make a bacteriological examination indispensable if useless surgery is to be avoided and rational treatment adopted.

Post-anginous Pyæmia. RICHARD WALDAPFEL, Vienna.

From the recent work of Fraenkel, Uffenorde, Zange and Claus, the following points arise for discussion :—

(1) The site of the terminal focus; whether it is a primary thrombosis of the tonsillar or of the jugular vein.
(2) The methods of treatment which can be established from knowledge of the pathology of the condition.

The examination of serial sections of the tonsils and neighbouring structures, taken in conjunction with the Viennese statistics for the last thirty years, show that a primary thrombosis of the tonsillar vein is the rule, that of the internal jugular the exception. It must be remembered that thrombosis and bacterial invasion are not synonymous, the jugular thrombus may be sterile. The bacterial invasion occurs not through the tonsil, but outside the tonsil itself, from an abscess and then through the lymphatics of the peripharyngeal spaces. It is certainly true that the suppuration of a gland in the peripharyngeal space may sometimes account for abscess formation; but this point is of no particular importance in the pathogenesis or treatment of the condition. In the great majority of cases such abscesses arise in the parapharyngeal cavities; it is only in a small percentage of cases that there is direct vascular infection without abscess formation. The prognosis depends usually not on the state of the blood-vessels but on the possibility of dealing with the abscess formation. Surgical interference with the veins is of secondary importance. The most valuable prophylactic method is drainage of the parapharyngeal spaces by the external route, a "kollarer" mediastinotomy is the method of choice.

DISCUSSION ON THE PAPERS OF UFFENORDE AND FERRERI.

VOSS emphasised the importance of the lymphatic route in tonsillar septico-pyæmia and mentioned a recent case of his own in which, as the veins were found to be unaffected, he had confined himself to excision of glands. The temperature fell by crisis and remained normal.

The primary infection was in the lymphatics, the vascular infection was secondary to the lymphatic infection. KELEMAN laid stress on the value of excision and pathological examination of a gland in the neighbourhood of the operation ground for purposes of prognosis and treatment. HAJEK stated that abscess formation is commoner than is usually believed, as these abscesses often cause few symptoms and so are not recognised.

WEIN mentioned two cases of tonsillectomy in which a cellulitis of the floor of the mouth started in veins exposed under a slough. For this reason he advised ligature of both ends of divided veins. CLAUS agreed that the veins were usually infected through the lymphatics, and held that this was borne out by the massive infiltration of the lymph glands of the

region as well as the sheath of the vessels. In other cases the infection spreads from the tonsils into the parapharyngeal connective tissue and along the œsophagus. Points in diagnosis are the swelling along the course of the internal jugular, rigors, and tenderness at the angle of the jaw: this last is always present. He advocated attack on the primary focus by tonsillectomy, even when the tonsils appeared to have recovered from the infection.

MARSCHIK advised thorough examination of the tonsils as a possible focus of infection in all cases, with tonsillectomy if there was any evidence of sepsis. Mediastinotomy was valuable as a prophylactic measure only in those cases where the pharyngeal infection threatened to invade the mediastinum. BÁRÁNY mentioned two or three cases of tonsillectomy where he had found aseptic venous thrombosis without any visible change in the vessel wall. CÆSAR HIRSCH reported eleven cases of post-anginous septico-pyæmia which, in his opinion, showed that a hæmatogenous infection was possible as well as a lymphogenous. For the first group ligation and resection of the vein was indicated, for the second excision of inflamed glands.

A Method of Tonsillectomy. F. CASADESUS, Barcelona.

Casadesus advises complete removal of the tonsil by dissection under an infiltration anæsthesia with 2 per cent. novocaine and adrenalin; the stages of the operation are as follows:—

1. The tonsil is grasped in the long axis with a toothed forceps and pulled towards the mid-line.
2. An incision is made right round the tonsil with section of the fold of His at its union with the anterior pillar, which gives a free opening above, and separation of the pillars from the tonsil by dissection.
3. With the capsule of the tonsil well exposed above, a fresh grip across the capsule is taken; this makes it possible to pull the tonsil firmly downwards without tearing.
4. Sharp dissection of the tonsil with the capsule from its bed from above downwards, and for the left tonsil, from before backwards, for the right tonsil, from behind forwards.
5. Division of the attachment of the lower pole to its surrounding tissue with the scalpel, cutting horizontally from within outwards.

In the discussion Gault (Dijon) said that he still used the method which he had been practising with some modifications for twenty-five years.

Kubo (Fukuoka) said that it was especially important to avoid injury to the anterior pillars of the fauces, since otherwise later on a marked contraction could cause injury to the voice. Furthermore, one must remove the capsule completely, on account of the danger of profuse parenchymatous hæmorrhage in an incomplete operation. Kubo strongly recommended the use of his own instrument.

Neumann said that with an arsenal of instruments, and a lexicon

of methods, everyone of us had the very best of them! In the majority of cases it was preferable to operate with the tonsil under traction than *in situ*. For both methods, an anæsthesia by deep injection was usual.

The Choice of Methods in Total Tonsillectomy.
P. A. HINOJAZ, Madrid.

Hinojaz advises dissection with the aid of the finger under local anæsthesia (10 per cent. cocaine with adrenaline). He does not inject the palatine arch, as he regards this as a cause of post-operative palatal deformity, as also is any injury about the lingual base. Hinojaz never sutures the pillars, and has never any fear of reactionary or secondary hæmorrhage.

The Frequency of Pituitary Disturbances in Adenoid Cases.
S. CITELLI, Catania.

Citelli points out the frequency of pituitary troubles in cases of adenoids in children over 10 years of age, associated with functional troubles in the sexual organs, delayed appearance of the secondary sexual characters, and general asthenia. In this connection Redner has caused degeneration of the anterior lobe of the pituitary in rabbits by galvano-cautery of the opening of the cranio-pharyngeal canal.

The Development of the Lateral Pharyngeal Recess.
P. CALICETI, Bologna.

From a series of anatomical and embryological researches, Caliceti concludes that the fossa of Rosenmüller is a late formation in the developmental process. To its formation there contribute in different degrees the method in which the fibrous lamina of the pharynx is attached to the body of the temporal bone and to the posterior and internal portion of the cartilage of the Eustachian tube, the act of swallowing, and above all, the exact position of the insertion of the superior constrictor. This muscle, although it reaches the skull in the full-term fœtus and early life, is separated from it in the adult by some 10 mm. It is especially on this arrangement of the superior constrictor that the depth and position of the fossa depends.

Anomalies of the Epipharynx in Skiagrams. A. SCHÜLLER, Vienna.

Among the pathological changes of the nasopharynx which can be confirmed by X-ray examination, the following are of particular importance:—

1. Deformities of the base of the skull.
2. Deformities, fractures, or luxation of the cervical vertebræ.
3. Foreign bodies in the nasopharynx.
4. Tumours or inflammatory changes.

In the discussion, Thost said that skiagrams of the cervical vertebræ frequently explained otherwise unaccountable pain in swallowing. There were sometimes centres of ossification in the ligaments which the larynx rubs against in the movement of deglutition. In old people, when the larynx itself had become ossified and the vertebral column more curved forward, pain and difficulty in swallowing might be produced, and cause a suspicion of carcinoma.

Note.—This paper has now been published *in extenso* and with all illustrations in the *Annals of Otology*, March 1929.

LARYNX.

The Vocal Organ of the Orang-outang and its Phylogenetic Position. J. Némai and G. Keleman, Buda Pesth.

It is remarkable that an animal so highly placed in the animal kingdom as the orang-outang should have so primitive a vocal organ. The low grade of development of the larynx in the orang-outang is shown by the huge epiglottis, the defective aryepiglottic folds and the pendulous velum, and by the fact that the vocal cords are too deeply embedded in the lateral walls and are too far apart to function as do the human cords.

With the exception of the thyro-arytenoideus, the muscles are poorly developed, and the longitudinal tensors in particular are weak.

In spite of the ossification of the thyroid plate, which, however, is not completely ossified especially anteriorly, the laryngeal box is elastic, and this elasticity is the more remarkable since it is found in all apes. It is not surprising that the voice can be made strongly resonant; such a powerful animal must be able to expel his breath strongly and shut the vocal orifice firmly. The lateral air cushion of the ventricles and the tense air pouches add to this, but the vocal apparatus is not adapted for more modulated tones. Some differentiation of sound is, however, possible, and it is this that he has to thank for his superior intelligence.

Recent Work on the Localisation of the Laryngeal Cortical Centre in the Dog. Luigi Belucci, Siena.

The author describes his experimental methods by means of which he has been able to determine exactly the localisation in the cortex of the centres for the movements of the vocal cords in the dog, cat, wolf, and monkey.

In regard to man and the apes he has confirmed the localisation given by other workers on clinical and experimental grounds. In the case of the dog, he finds that the cortical centre for the laryngeal muscles is situated in the sulcus postcrucialis close to the area for the facial muscles, and in especial relation to the centre for the orbicularis palpebrarum; that this centre is responsible for the action

of the muscles in both directions; that the sulcus crucialis in dogs does not correspond with the sulcus Rolandi in man or with the sulcus centralis in apes; and that, by suitable chemical or electrical stimuli, the phonator and respiratory functions can be separately invoked. Continuing on these lines, he has found it possible to produce an isolated spasm of the adductors, spreading in time to the tongue and the ocular muscles.

The centre is symmetrically bilateral, and he has confirmed his results by the degenerations following excision of the recurrent.

In reply to Lubiner (Warsaw), the speaker said that he did not think that his results in any way affected the validity of the Semon-Horsley law.

Experimental Observations on the Tremolo of the Singing Voice. NADOLECZNY, Munich.

The tremolo is a disturbance in the continuity of the singing tone due to a rhythmical disturbance of the innervation of the muscular phonation apparatus, including the larynx and the muscles of articulation. Tremulous motions of the whole phonatory muscles up to the lips are observed. There are, almost always, spasmodic vertical movements of the whole larynx, base of the tongue, and soft palate, which can be demonstrated by graphic records. The trouble usually appears in the course of training, and usually in the transitional tones between the middle and high register, or "swelling tones" in *forte*.

By means of Frank's apparatus it is possible to register the sound curves and correlate the ratio of the high-tone oscillations to the strength of the tone. In this way we can assign the limits to the tremolo, and also to the trills, which are found to be rhythmical shaking movements of the larynx of an approximately equal frequency and a regular sound interval.

On the Singing Voice. M. ERBSTEIN, Leningrad.

From the experience of thirteen years with 1600 singers, it has become possible to place the voice definitely as tenor, base, baritone, etc. The author's method consists of four stages. An examination of the larynx and respiratory passages, an examination of the character of the singing voice, an examination of the elaborated tones, and finally an examination of hearing, musical memory and rhythm sense.

The character of the singing voice is determined by seven factors:— The position of the hard palate, the larynx, the resonance-capability of the thorax, the character of the singer's elaborated tones, the diapasons, the subjective sense of the singer, and finally the general impression the voice makes at the examination. When the first three signs show an undoubted vocal character, the other four are so unimportant that one can place the singer's voice in its proper position on anatomical grounds alone, without even hearing it.

Miscellaneous

X-Ray Diagnosis of Laryngeal Tubercle.
G. Wotzilka and H. Adler, Spiegelsberg.

Until recently X-ray examination of the larynx was confined entirely to skiagrams; Adler, however, has found it possible to see by screening most of what is shown by skiagrams. Screening has the additional advantage that the larynx can be examined in different positions and in motion.

Among the characteristic signs of laryngeal tuberculosis under the X-ray are the faintness of the thyroid and cricoid cartilage shadows, the presence therein of a degree of calcification excessive for the patient's age, swelling of the epiglottis and arytenoids, and changes of shape in the ventricle of Morgagni. It is rare to find by skiagrams any extensive tuberculous process in the ventricle where the laryngeal mirror only shows redness of the cords or bands. Skiagrams have shown calcification in the mucosa after galvanocautery. They are a valuable aid in the differential diagnosis of tubercle, syphilis, and new growth.

In the discussion, Thost laid stress on the great practical importance of X-ray examination of the larynx. He believed that it was possible to detect tuberculous disease in the sinus of Morgagni before anything could be seen in the mirror.

X-Ray Examination of the Larynx.
A. Réthi and A. Szebeny, Buda Pesth.

Since 1912, Réthi has practised sagittal, *i.e.* antero-posterior, skiagraphy of the larynx. A suitably cut film wrapped in a black paper sheath, one end bound with rubber, is introduced into the previously cocainised hypopharynx, with the head in the flexed position. It is afterwards removed with Brüning's forceps.

The pictures show in sharp outline the inner portion of the larynx, the false and true cords, the sinus of Morgagni, and the subglottic space; the ossification is particularly conspicuous.

Skiagrams have shown that in cases of marked chronic catarrh ossification is more extensive than in healthy subjects of the same age. The abnormal ossification is particularly marked in stenosis following injury, tracheotomy, etc. Skiagrams can show, amongst other things, prolapse of the sinus of Morgagni, varying forms of stenosis, tumours, and infiltrations.

MISCELLANEOUS.

Treatment of Congenital Cervical Fistula by Diathermy.
G. Hofer, Vienna.

Hofer, finding that conservative methods did not give secure closure of the fistula, and that radical operations were often extensive and sometimes dangerous, has treated these defects by diathermy coagulation.

He dilates the fistula as far as possible with probes, and then uses a specially designed guarded electrode. The method should be used with caution, but his results have compared very favourably with those of open operation; as well, the reaction is much less, and the period of convalescence brief.

The Local Treatment of Tuberculosis of Mucous Membranes with Artificial Sunlight. E. WESSELY, Vienna.

The paper is based on eight years' experience of local irradiation for tuberculosis of mucous membranes in Professor Hajek's Clinic in Vienna. Although in particular instances the method has shown extraordinarily successful results, it is specially valuable in cases where the localisation of the lesion does not favour cautery or curettage. Success depends on the local powers of regeneration of the tissues, and it appears that the best results are obtained in vascular areas that can give a rapid and rather extensive reaction. Thus it follows that on the whole the treatment has little influence on avascular tissues such as the laryngeal cartilages, and a definitely bad influence in tuberculous disease of the gums, where there is a bony foundation. It seems possible that the organisms may be sensitised to light by intravenous injections of trypaflavin. If this should be so, the same light effect should in future be produced by smaller doses of light, and in shorter time.

Advantages and Disadvantages of Diathermy in the Upper Reaches of the Air and Food Passages. CÆSAR HIRSCH, Stuttgart.

Surgical diathermy can be used advantageously in many conditions of the upper air passages; particularly for malignant tumours of the nose and accessory sinuses, for the post-nasal fibromas, for malignant disease of the tonsils and tongue, and for nasal and pharyngeal tuberculosis. In severe hæmorrhages of the nose there is no surer method of arrest than diathermy, and it is of great service in hæmorrhage after tonsillectomy.

Diathermy is a simple and effective method of treating nasal synechiæ, but in all intranasal cases caution must be exercised to avoid injury to the nasal orifice, as this can cause serious scar-stenosis of the vestibule.

Tonsillectomy by diathermy is only indicated in patients with vascular diseases, and in those peculiarly liable to hæmorrhage. Here excellent results are obtained by Lemoine's "Morceleur diathermique."

In diseases of the larynx, hypopharynx and œsophagus, the method has not proved so satisfactory. In cases of laryngeal tuberculosis diathermy coagulation may easily produce severe œdema, and, not uncommonly in cured cases, grave stricture. Also in malignant growths of the hypopharynx, larynx, and œsophagus, diathermy may be followed by œdema and strictures.

Review of Book

The Etiology and Treatment of Plaut-Vincent's Angina.
MANGABEIRA-ALBERNAZ, Campinas, Brazil.

The author believes that Plaut-Vincent's angina is not itself a clinical entity, but only the localisation of a disease. The treatment at present is purely empirical.

After a discussion of the normal type of the condition and the effects of some sixty different methods of treatment, he comes to the conclusion that the most valuable is the local application of the bismuth salts, a method which he has been practising since 1922.

The Vaccine Treatment of Malignant Tumours.
S. CITELLI, Catania.

For fourteen years the author has been treating malignant tumours by his vaccine method. As much of the tumour as possible is removed, and from a filtered extract of this his vaccine is prepared. This is then administered intravenously to the patient. Fifteen cases of inoperable malignant growths of different types have been treated. In 11 cases the tumour has entirely disappeared, and a definite cure is expected. In the other 4 cases, there was considerable improvement and prolongation of life.

The method has been practised also by Alagna, who reports successful results.

Piazza, who has used the same method, has observed a reaction within the first half hour in all his cancer cases, but never in patients who are free from malignant disease.

REVIEW OF BOOK

The Medical Annual: A Year-Book of Treatment and Practitioner's Index. Forty-seventh year. 1929. Pp. 610. Bristol: John Wright & Sons, Ltd. London: Simpkin Marshall, Ltd. Price 20s.

We are reminded, not unpleasantly, of the passage of time by the appearance of the forty-seventh issue of the *Medical Annual.* Each of the previous forty-six has provided a record of progress and this one is no exception.

It need hardly be said that Radiology, Radium and X-ray therapy occupy a considerable amount of space, especially in the light of the proceedings of the International Congress of Radiology, held in London last year. The Reports of the Radium and X-ray Committee of the Medical Research Council are cited in evidence of the improvement in results with the progress in technique. The physiological, pathological and therapeutical effects on the various organs afford most interesting and instructive reading. The question of tonsillectomy in relation to