ABSTRACTS

THE EAR.

An Addition to the Anatomy of the Tympanic Membrane. ERICH RUTTIN, Vienna. (*Acta Oto-Laryngologica*, Vol. vii., fasc. 32, 1925.)

The author describes a definite fissure or recess, a continuation of the pocket of Troelt, which can be seen to lie within the structures of the tympanic membrane, when a vertical transverse section is made through the whole length of the hammer bone and the attached drum-head. This fissure, which in other preparations has been thought to be an artefact, he finds definitely to be lined with epithelium and therefore to be a true cavity. Thus we have the following structures from without inwards: The outer skin of the drum-head, the sub-epithelial layer, the membrana propria, lateral submucous layer, lateral epithelium; then the recess or fissure, next, the medial epithelium, medial submucous layer, and periosteum of the hammer handle.

It is suggested that many cases described by Politzer as interlamellary drum abscesses are to be explained by a continuation of the inflammation or suppuration into this space, and its function is probably that of a bursa which acts as a protective to the drum fibres at this point of stress over the malleus. H. V. FORSTER.

Congestion of the Middle Ear. ARNOLDO TAPARELLI, Milan. (*Raggi Ultraviolette*, February 1925 and April 1925.)

Dr Taparelli describes two very similar cases which occurred in patients under his treatment for pulmonary phthisis. Both complained of pain, discomfort, and dizziness referred to one ear. In the first, a man of 20 years, there was redness of the tympanic membrane, and signs of osteitis of the petrous bone and congestion of the labyrinth. A special quartz aural speculum was made and ultraviolet rays were administered to the ear. A Kromayer lamp was used, and at first the sittings only lasted one minute, but were increased up to three or four minutes. After about ten applications the symptoms had entirely disappeared.

The second case was a woman of 25 years, who complained of severe pain with a slight discharge from the right ear and some vertigo. She also had congestion of the labyrinth and a subacute otitis media. This patient was treated with a small Sollux lamp which was placed at five centimetres from the filter; she was given thirty minutes' exposure, which was increased in duration and in voltage in successive doses. The recovery was very satisfactory, the discharge and the other symptoms rapidly disappearing. It was found much better to have the patient further from the lamp, and to give a longer sitting. A blue filter was used in each case. F. C. ORMEROD.

Abstracts

The Treatment of Syphilis of the Internal Ear. P. BRISOTTO. (*Zentralblatt für Hals-, Nasen-, und Ohrenheilkunde*, 1925, Vol. vii., 917.)

Brisotto reports the effects of treatment of 49 cases of inner ear syphilis with neosalvarsan and bismuth preparations; the bismuth used was trepol and neotrepol.

He obtained the best results with the bismuth compounds, both in the recent forms of labyrinthine syphilis, and in cases which had resisted arsenic and mercury, and also in cases of neuritis acustica luetica.

F. W. WATKYN-THOMAS.

An Investigation into the Cochlear and Vestibular Functions of Deaf-Mutes at the Institute in Jekaterinoslaw. Professor S. KOMPANEJETZ. (*Zeitschrift für Laryngologie, Rhinologie, etc.*, October 1925, pp. 444-58.)

Thirty-eight deaf-mutes were subjected to very complete functional tests. In 43 per cent. the tympanic membranes were normal. Absolute deafness to the whole of the Bezold-Edelmann series of tuning-forks was found in forty-four ears, or 58 per cent., each ear being considered separately.

The ears in which some hearing function remains are divided into six groups, according to Bezold. The author then gives tables comparing his findings with those of previous investigators, of which sixteen are mentioned. The main division in Bezold's classification is between deaf-mutes who have islands of tone perception, and others where the defects are at either extremity of the tone-scale.

The *tickling symptom* (Kitzel symptom of Fröschels) is lost in 63 per cent.; this refers to a diminished tactile sensibility in the external meatus, and it is found more frequently in those cases where the vestibular reactions are present, *i.e.*, probably the true congenital deaf-mutes.

Rotation nystagmus was present in 66 per cent., caloric nystagmus in 63 per cent. A very full bibliography is appended.

J. KEEN.

Deafness from Primary Changes in Organ of Corti. G. ALEXANDER. (*Zentralblatt für Hals-, Nasen-, und Ohrenheilkunde*, 1925, Vol. vii., p. 801.)

Alexander describes the changes found in the inner ear of a 2-year old deaf-mute suffering from Moller-Barlow's disease.

The central portion of the utricle and the ductus endolymphaticus were dilated, the cristæ atrophic, the maculæ hypoplastic, and the sensory epithelium scanty. In the cochlea there was advanced degeneration, the basilar papilla especially being defective; supporting cells could be shown, but no hair cells or pillar cells. The tectorial

membrane showed changes in position and lamination and here and there was completely absent. There was connective tissue formation in the upper turns of the cochlea and changes in the stria vascularis. There were no primary changes in the nerves.

Alexander believes that in this case there was a primary developmental defect of the entire peripheral nerve endings, with secondary atrophy; the obliteration of the cochlear canals marked the termination of a fœtal change. The same cause which, acting on the brain produced the idiocy, on the ear produced the changes in the duct of the cochlea. F. W. WATKYN-THOMAS.

Clinical Experimental Contribution to the Symptomatology and Origin of Otolith Disease. GERMÁN TIBOR, Budapest. (*Zeitschrift für Hals-, Nasen-, und Ohrenheilkunde*, Vol. xi., Part 4, p. 433.)

A case is narrated in which there was great difficulty in making the diagnosis of otolith disease from disease in the cerebellum or ponto-cerebellar angle. There was chronic middle-ear suppuration with loss of the tympanic membrane on the left side. The patient had vertigo, vomiting, and right-sided nystagmus when his head was turned to the left, the severity of the symptoms being in proportion to the degree to which the head was turned.

To decide the point as to whether the cause of this disturbance was central or peripheral, the author tried the effect of the introduction of cocain, adrenalin, alypin, and simple saline solution respectively. Cocain stopped the attacks, so also, but more slowly, did adrenalin; alypin modified them imperfectly, and saline had no effect at all. The author claims, therefore, that the otolith-symptom-complex is of peripheral origin. JAMES DUNDAS-GRANT.

A New Test for Stating Stimulation of One-sided Deafness. S. T. HEIDEMA, Amsterdam. (*Acta Oto-Laryngologica*, Vol. vii., fasc. 3, 1925.)

A case is described of a man severely injured about the right leg in a railway accident, who developed at a later period various symptoms of an hysterical nature referable to the right side of the body, and, according to his statements, deafness in the right ear.

The ends of an ordinary phonendoscope or micro-membrane stethoscope were placed in the ears of the patient, the examiner standing behind the man. With the tube to the right ear occluded by pinching, a tuning-fork was heard at 7 cm. from the membrane of the instrument, but with both tubes free it was only heard at 1 to 2 cm. With the left side occluded it was not heard. The author concluded that the fork was heard by the right ear with both tubes open, but the man tended to conceal the fact, and only admitted hearing the fork

when the sound grew stronger, even though the tube to the left ear was also clear. The test is somewhat similar to tests described by Steryer and by Seiffert. H. V. FORSTER.

The Newer Methods of Intravenous Therapy in Septicæmia of Otitic Origin: A Preliminary Report. C. T. PORTER, M.D., Boston. (*Annals of Otology, Rhinology, and Laryngology*, September 1925.)

Three cases are reported of septicæmia of otitic origin (one with pus in the lateral sinus, two in which the sinuses were not explored) where the author injected mercurochrome with satisfactory results. The dosage is discussed and the dangers in the use of intravenous mercurochrome injections are clearly pointed out. The author noted a slight kidney involvement in only one case. Pneumococcus was cultured from the lateral sinus pus in one case. Short chain streptococcus was cultured from the blood in another.

In an adult the injection of 20 c.c. mercurochrome was followed by a sharp reaction, high temperature, and violent diarrhœa. Stools and urine were tinged red. A further injection of 18 c.c. in two days was followed by a fall in temperature. The temperature did not come down to normal and remain there, however, till a small abscess in the neck wound was evacuated. The internal jugular vein had been tied and pus found in the lateral sinus.

In a child of 4, where no relief followed upon a paracentesis and a simple mastoidectomy, 5 c.c. of 1 per cent. mercurochrome were injected with very little reaction and a fall in the temperature from 103° to 101° F. Two days later the temperature had not come down any lower and the same dose was repeated. The temperature then fell to normal where it remained.

In a child of 9, a bilateral simple mastoid operation was done, and tonsils and adenoids were removed. There was a question as to erysipelas round one eye. A septic arthritis occurred in the right knee; for over two months the child had a septic temperature. At intervals three injections were given, the first of 3 c.c., then two injections of 5 c.c. of the 1 per cent. solution. After the third injection the temperature dropped to normal and the child made a good recovery. NICOL RANKIN.

THE NOSE AND ACCESSORY SINUSES.

Rhinophyma. JAMES FRANCIS GRATTAN, M.D., New York. (*Surgery, Gynæcology, and Obstretics*, July 1925.)

The paper reports six cases cured by radical operation followed by X-ray and acid treatment to relieve the associated hypertrophy of the skin, and to reduce the operative scars to a state of invisibility.

Photographs of the six cases before and after operation testify to

the excellence of the results. Removal of the tumour and reconstruction of the nose are done at one operation. Local anæsthesia is employed. The author finds that enough skin can be left round the base of the tumours to cover the raw areas after excision of the mass. No secondary skin grafting was ever necessary.

After two X-ray exposures of $\frac{1}{2}$ unit at weekly intervals, including $\frac{1}{4}$ unit at each time to the entire face to clear up the remains of the general acne, 50 per cent. trichloracetic acid was applied to the elevated areas at the end of the third week. These applications were repeated if necessary. The X-ray and acid method reduced the irregularities of the skin and rendered the operative scars practically invisible. NICOL M. RANKIN.

Treatment of Ozæna by Microbial Vaccines. Dr D. IGNACIO FERNANDEZ SECO. (*Revista Espanola de Laringologia, Otologia y Rinologia*, November-December 1924.)

Very mixed views are held as to the nature of ozæna, its etiology and its pathology. Those who hold that it is a hereditary, constitutional condition, and a specific local infection claim most adherents. Whatever views are held, everyone agrees that fœtor is an invariable characteristic. The therapeutic problem is as variously dealt with as the pathological and embraces such forms of treatment as surgical attempts to reduce the cavity of the nose, the administration of vaccines, and all the various local applications which have been used.

The fact that the condition is a chronic one and limited to a single organ has tempted the author to use vaccines. By dint of culture he attempts to find some predominant organism and to make a vaccine of this. Failing this, he prepares a vaccine of the multiple organisms found in the nose or even uses a stock vaccine. He begins with 100 millions and increases the dose so that after eight or ten injections, he has given 8000 to 9000 millions of organisms.

After the interval of one month he gives the same course of treatment over again. There is usually a little fever and general reaction after the injection, but this is followed by a reduction in the amount of crusting and fœtor. In 100 cases the author had very favourable results in 84, but the other 16 were unsatisfactory. The wide nose and the shrunken turbinals are not relieved by these measures, but the symptoms, crusting and fœtor are very definitely improved. F. C. ORMEROD.

Ozæna and its Treatment by Hæmotherapy. N. TAPTAS, Constantinople. (*Annales des Maladies de l'Oreille, du Larynx, du Nez et du Pharynx*, March 1925.)

The first portion of this article is given up to a brief historical survey of the etiology and various types of treatment in vogue in

the past and at present, and the writer draws the conclusion that no form of treatment so far evolved, either operative, by vaccination, or by merely palliative measures, has been found to be of general usefulness.

Taptas states his belief that atrophic rhinitis is the advanced state of a specific infection causing firstly, a definite rhinitis, and later a purulent superimposed condition. He inclines to the theory that the original infection is that of diphtheria, and that the reason that treatment with diphtheria antiserum in the past has been unsuccessful is that, by the time the patient arrives at the stage of atrophy, the secondary sepsis has overcome the Klebs-Loeffler infection.

Acting on this basis of reasoning, and guided by the studies of Besredka on autohæmotherapy, the writer determined to apply this theory to ozæna. The first patient to undergo the treatment was a girl of 16, who was said to have so suffered for about a year. The turbinals showed definite atrophy, but had not altogether disappeared. The nares were filled with foul-smelling crusts. At intervals of from eight to ten days treatment was carried out three times, the technique being the injection under the mucosa of the inferior turbinals, the floor of the nose and the septum, of 8 grammes of blood obtained from the patient's elbow veins. After the third injection the patient failed to return, and was unable to be traced for some months. It was then found that the nose was in good condition, and that the atrophy had diminished in spite of the fact that the patient had discontinued irrigation.

It was decided to carry out the treatment in twenty cases. At the end of the course, all without exception declared themselves cured. All had improved in health and noted the disappearance of the foul odour, synchronously with absence of crusting. Even in advanced cases in which the turbinals had completely atrophied, although the patient was not able entirely to dispense with lavage, the formation of crusts was greatly lessened, and those which formed were much more moist and more easily detached from the mucosa.

The writer describes the treatment as auto-vaccination. He emphasises the fact that the injections should be made between the mucosa and the bone. If the state of the mucosa contra-indicates this, the treatment may be carried out by deep injections into the buttock, and he cites a case in which this was successfully done. GAVIN YOUNG.

Surgical Treatment of Ozæna. Dr F. DE SOJO. (*Revista Espanola de Laringologia, Otologia y Rinologia*, November-December 1924.)

Surgery as applied to the treatment of ozæna consists of various manœuvres aimed at reducing the abnormally wide nasal passages. In slight cases it has been found sufficient to inject or to implant

various substances under the mucous membrane and so reduce the lumen. The method of mobilising the outer wall of the nose and displacing it inwards is a procedure of some difficulty and is followed by a prolonged and very painful course of after-treatment. There is a distinct element of danger associated with this method but the results are good. The author considers it is a method which should only be adopted after other methods have failed and in bad cases. He has found that surgical measures applied to the nose cause an improved blood supply to the mucous membrane probably secondary to the reactionary inflammation. The operation of transferring the duct of the parotid gland to the maxillary antrum in an attempt to increase the moisture of the nose is considered to be bad in principle and should be abandoned.

The author thinks that surgery should only be resorted to when it is quite evident that other therapeutic measures have failed.

F. C. ORMEROD.

The Treatment of Hay-fever. FRANK COKE, F.R.C.S. (*Brit. Med. Journ.*, 23rd May 1925.)

Desensitisation by small doses of the pollen for a prolonged period before the season commences is recommended as first choice, but the treatment must be carefully carried out. The dilutions used for treatment must be the same as those used in testing the patient.

Desensitisation by "mixed coliform vaccine" is also frequently successful. Of medicines, collosol calcium intravenously is the most useful. Cauterisation of the nose is very useful for diminishing the boggy swelling of the mucous membrane and also for destroying some of the nerve-endings. Some useful hints for the patient's comfort are given.

T. RITCHIE RODGER.

The Treatment of Nasal Obstruction by Means of Operative Outward Displacement of the Inferior Turbinated Body. S. BOURACK, Charkow-Minisk. (*Zeitschrift für Hals-, Nasen-, und Ohrenheilk.* Vol. xi., Part 4, p. 461.)

In cases in which the bony structure and not the soft parts of the inferior turbinated body cause obstruction the writer finds outward displacement very successful in 70 per cent. of cases, moderately so in 20, and of negative value in about 10. He prefers it to cutting and snaring methods.

The displacement can often be effected by means of a strong raspatory, though the turbinated bone may have to be fractured along its line of attachment by means of forceps. A pair of raspatories may be made into a mechanical dilator by means of a screw. Pugnat is quoted as recommending a special nasal forceps of which one branch

lies against the septum, the other against the turbinal (*cf.* the "Glove stretcher" dilators of Bendelack-Hewetson and Hill, *Journ. of Laryn. and Otol.*, Vol. iv., p. 445, 1890). JAMES DUNDAS-GRANT.

The Sphenopalatine Ganglion: General, Anatomical, and Surgical Considerations. J. TERRACOL. (*Archives Internat. de Laryngologie*, July-August 1925.)

From his description of the embryology and comparative anatomy of Meckel's ganglion, the author deduces that the sphenopalatine ganglion has a double origin, namely, from the cells of the gasserian and geniculate ganglia.

The anatomy of the ganglion and of the structures in the pterygo maxillary fossa are described in detail and the proximity of the vidian canal to the sphenoidal sinuses is emphasised.

In small sinuses, the vidian nerve is separated from the floor of the sinus by a layer of bone of about 3 mm. in thickness. In sinuses of medium development, the vidian nerve is almost in contact with the floor of the sinus, and only separated from it by a thin layer of bone. In well-developed sinuses, the vidian nerve may project into the cavity, and is separated from it only by mucous membrane.

The position in which Meckel's ganglion is most constantly found is immediately at the anterior extremity of the vidian canal.

The author next discusses the three methods of surgical approach to the sphenopalatine area, and the technique of periganglion injection.

(1) The nasal route.

In the great majority of cases, the orifice of the sphenopalatine foramen is found above and slightly behind the posterior extremity of the middle turbinate bone—about 65 mm. from the anterior nasal spine. The author describes the various methods of localising the area for purposes of anæsthesia and treatment.

(2) The palatine route.

(3) The zygomatic route.

The author considers the palatine method of approach by far the most satisfactory. The injection is carried out by inserting the needle of a syringe into the posterior palatine foramen and pushing it up the foramen for a distance of 4 cm.

The paper is illustrated by a number of diagrams.

MICHAEL VLASTO.

The Method of Intranasal Access to the Lacrymal Sac and Ethmoidal Labyrinth. N. S. OREMBOWSKY, Tiflis, Georgia. (*Acta Oto-Laryngologica*, Vol. vii., fasc. 2, 1925.)

Difficulties due to the deflection of the nasal septum and the varying configuration of the lateral nasal wall occasionally render a

West operation difficult, and preliminary submucous resection of the septum does not always alleviate matters.

Whilst operating on the maxillary sinus (Canfield-Ballenger, Denker) one very often meets the lacrymal canal and sac and therefore such an approach to these parts appeared to be easy. One must operate, however, not below but above the inferior turbinate.

Anæsthesia is produced by combining surface cocain-adrenalin anæsthesia for the mucous membrane with infiltration by novocain-adrenalin for the vestibular skin; the infiltration is continued via the vestibule beneath the periosteum of the frontonasal process adjacent to the anterior attachment of the middle turbinate. The needle is then passed to the outer side of the process as far as the inner angle of the eye, again using the nasal vestibular route.

A vertical incision is made on the margin of the pyriform aperture from its highest visible point downwards to the end of the inferior turbinate. The periosteum is then elevated from both sides of the frontonasal process, and the bone removed in the form of a channel by gouges and forceps as far as the lacrymal sac, which is then separated from the surrounding bones and its inner wall removed. Diseased ethmoidal cells are taken away when present. It is unnecessary to cut a hole through the mucous membrane opposite the sac.

This procedure may be combined with a Canfield-Ballenger operation on the maxillary sinus.

The author has named the operation Dacryocysto-Rhinostomy.

H. V. FORSTER.

Ethmoiditis. Dr WILLIAM FREDERICK MOORE, Philadelphia. (*Laryngoscope*, Vol. xxxiv., p. 26.)

A case of unilateral ethmoiditis is described, giving rise to unusual symptoms in a child aged 10. The original complaint was swollen glands on the right side of the neck, with a high temperature. Local applications to the neck and calomel internally, quickly resulted in an apparent cure.

He was taken to the seaside where the temperature and pulse were immediately increased and the swelling of the glands returned. Again local application resulted in amelioration of symptoms and the little patient was taken to the seaside for the second time. Again the previous chain of symptoms recurred except that the glands became enlarged on both sides of the neck.

A thorough systematic examination did not throw any light on the case, but a streak of mucopurulent secretion on the posterior wall of the nasopharynx eventually led to an X-ray examination which revealed a cloudiness of the left ethmoid cells, the other sinuses being clear. No operative treatment was followed and the ethmoiditis cleared up,

so that three months later another X-ray revealed a clear ethmoid on both sides.

The interesting points were the difficulty in diagnosis and the recurrence of symptoms on going to the seaside. Tonsils and adenoids had been removed a few years before the attack. It is important to remember the possibility of a nasal sinusitis causing cervical adenitis in children, especially when there is no apparent buccal sepsis.

ANDREW CAMPBELL.

THE PHARYNX.

On the Arched Form of the Palate: Observations on Thirty Rachitic Babies. DOTT. GUIDO GUIDA. (*Archivii Italiani di Laringologia*, Anno xliv., fasc. 4, July 1924.)

The arched palate has for a long time been attributed to obstruction of the upper air passages, by the presence of adenoid vegetations and enlarged tonsils. In cases of this deformity the superior maxilla is found to be elongated in an anteroposterior direction, and the dental arches are approximated to the middle line until the soft and hard palates take on the form of the hull of a boat. Along with this deformity of the palate there is a deflection of the septum and a compensatory hypertrophy of the turbinate processes.

The result of this is a necessity for mouth breathing, and the child assumes what is known as the typical adenoid facies.

The author quotes a number of authorities who believe that the condition is directly due to the presence of adenoids, and some of them explain the shape of the palate by the fact that the pressure of the lower jaw on the upper is lacking owing to the mouth breathing. Other writers have suggested that the condition is a direct outcome of rickets, and that the presence of adenoids in some of the cases is a coincidence. Lemaire has found in 47 cases of arched palate only 15 cases of adenoids. He mentions that the arched palate persists in some children who have had their adenoids removed in the first year of life.

The author has observed 30 cases of children under 14 years of age who were the subjects of rickets. Of these 21 had arched palates, but in 3 it was only slight. Of the total number only 4 had tonsillar and adenoid enlargement. Excluding the slight cases, therefore, 14 of the children had the marked arched palate without any sign of lymphoid enlargement. All these children were definitely rachitic, and most of them had other marked signs of the disease. Bony changes in rickets may be primary or may be secondary to some abnormal condition of stress or strain, and in the case of the palate the author thinks that the primary and most important factor is the

rachitic condition of the bone. The presence of rickets in the early years of life is apt to act as an important secondary factor in the production of the "adenoid facies." F. C. ORMEROD.

Affections of the Tonsils and Chronic Joint Diseases. ANDREAS TANBERG, Sandefjord, Norway. (*Acta Oto-Laryngologica*, Vol. vii., fasc. 2, 1925.)

Acute rheumatism is the best known and most frequent example of a connection between the tonsil and joint disease where acute tonsillitis (angina) is given as the cause in 25 to 27 per cent. of cases. Statistics available in Christiania for the ten years, 1913 to 1922, show 6458 cases of angina in men, 6080 in women; acute rheumatism in 828 men and in 815 women. The equality of incidence in the two sexes in the acute disease is remarkable, because in almost all forms of chronic joint disease women predominate as victims.

The material for the investigation discussed in this article refers to patients at Sandefjord during the last three years, and they are divided into the following groups: (1) Acute rheumatism; (2) secondary joint rheumatism; (3) chronic progressive primary polyarthitis.

Group 1 consists of individuals who visit the resort because after acute rheumatism stiffness and pain remain in different joints.

Group 2 comprises those who have chronic joint trouble following acute rheumatism.

In Group 3 the etiology is obscure, but there is a tendency more and more to blame an infection.

Women are in the majority in Group 1, possibly social conditions and a constitutional factor having some influence. In Group 2 women predominate still further, and in them the acute type appears more easily to become chronic, though one may mistake such cases for primary polyarthritis with a feverish onset. In Group 3 there is a great preponderance of women of all ages, from 15 to 50 years, but there are two maximum age periods, *i.e.*, between 20 and 30 and between 40 and 50.

Tanberg considers the disease in the latter group to be a metabolic one. Concerning polyarthritis at the former age period (20 to 30) this should be looked upon as a different type; there is a history of throat trouble preceding the joint symptoms in many cases, and throat infection appears to be far more effective than any other type of infection. The main fact, however, still remains that a constitutional factor is the most important.

"If primary polyarthritis is pre-eminently a disease of the poor, why are not men equally affected with women, and while the wife is affected at the wash-tub, the fisherman escapes?"

Abstracts

Some further interesting statistics are added, showing that men and women suffer equally from muscular rheumatism, but men suffer more from sciatica.

Women have predominance only in joint rheumatism, and in cases of primary polyarthritis there is some etiological factor much more complicated than infection. H. V. FORSTER.

A Review of Radiotherapy in Chronic Tonsillitis. JAMES W. BABCOCK, M.D., New York. (*Annals of Otology, Rhinology, and Laryngology*, September 1925.)

The author offers a résumé of his own personal observations and of the opinions which have been published on the subject of radiotherapy. Of forty-nine articles reviewed, 58 per cent. are heartily in favour of it, 22 per cent. find it of limited but distinct value, 20 per cent. find it of little or no use. Having given as factors in its favour; (1) avoidance of operative risks; (2) reduction in the size of the tonsils; (3) bactericidal effect; (4) improvement in the patient's general condition; (5) treatment is without attendant dangers; the author turns to the articles denying the usefulness of radiotherapy, thereby giving the other side of the picture and reducing the value of four out of five of the above factors to vanishing point. In the opinion of the remaining articles the treatment should be kept for those cases alone in which operation is definitely contra-indicated.

Ten of the author's cases are reported where radiotherapy was employed without success and where, later on, operation for removal of the tonsils was followed by good results. After removal, the tonsils were submitted to thorough pathological and bacteriological examinations. From this series of cases the author concludes that radiotherapy, in chronic inflammation of the lymphoid tissues of the pharynx and nasopharynx, does not: (1) cause a disappearance or fibrosis of this tissue; (2) render the crypts of the tonsils free from pathogenic bacteria; (3) relieve the patient of acute inflammation or the more remote symptoms due to absorption of toxins or bacteria from the tissues in question.

For those reasons it cannot take the place of adequate surgical treatment. NICOL RANKIN.

Total Removal of the Tonsils. GEORGE PORTMANN, Bordeaux. (*La Presse Médicale*, 14th January 1925.)

Professor Portmann has recently visited America, Canada, and Cuba, and has thus watched the operation of tonsillectomy performed "with every variation of technique and under every variety of anæsthesia, local or general." He has returned a confirmed apostle of complete removal, and in this article defends his faith and

describes his technique, a combination of dissection and snare under local anæsthesia. In the case of children, however, he condones the partial operation, "hypertrophy being in the majority of cases the only cause of trouble and the preservation of a portion of the parenchyma of the tonsil being justifiable." He is prepared, nevertheless, "to discuss the complete operation where there is infection." F. J. CLEMINSON.

A Possible Means of Preventing Deep Cervical Abscess after Tonsillectomy. W. B. CHAMBERLIN, M.D. (*Journ. of Amer. Med. Assoc.*, Vol. lxxxv., Part 2, Pp. 98, 99.)

The author mentions the occurrence of the above disease following tonsillectomy under a local ænesthetic. It does not occur with general anæsthesia. He thinks this is due to transfixing the tonsillar tissue by the needle, thus carrying infectious material into the deep structures of the neck. He describes a method of infiltration in which the tonsil is not transfixed by the needle. PERRY GOLDSMITH.

THE LARYNX

Some Disorders of the Larynx: (Hunterian Lecture, Royal College of Surgeons of England). V. E. NEGUS, M.S. Lond., F.R.C.S. Eng. (*The Lancet*, 19*th* September 1925.)

An attempt is made by the author to give some reason for the respiratory movements of the glottis, namely, the movement of opening which occurs on inspiration, in more or less direct relation to the force of the act, and that of closure to a greater or less degree on expiration. The explanation put forward is that the movements are designed to provide a certain degree of obstruction at the glottis, in order to regulate the inflow or outflow of air, and also to determine the degree of negative and positive pressures within the lungs. If the intra-thoracic pressure is lowered, more blood flows through the lungs, and foremost among other factors causing this is diminution of pressure on the great veins, right auricle, and pulmonary capillaries. The lowering of pressure and consequent volume of blood flowing through the lungs are so correlated by control of the glottis with the volume of blood entering the alveoli, that washing out of CO_2 is regulated during inspiration; on expiration the reverse state of affairs occurs owing to the obstruction of the glottis, and CO_2 removal is again controlled. By this mechanism the CO_2 content of the blood leaving the lungs to nourish the tissues can be kept constant.

The paper discusses briefly the relation of respiratory glottic movements to oxygen content of the blood, and describes the pump action upon the circulation caused by rhythmical variation of intra-thoracic pressure.

The effect on the Hering-Breuer reflex and on filling of the alveoli with air is also mentioned.

Certain pathological conditions are dealt with, of which the first is abductor paralysis. The author considers that the reason why the adductor group of muscles survives the abductor, when the recurrent laryngeal nerve is interfered with, is to be found in the fact that the former is of more ancient origin. In the lung fish called Lepidosiren the laryngeal musculature consists of a single sphincteric girdle, with the function of protecting the lungs against entrance of water. Dilator or abductor muscles only appear in higher organisms with the function of opening the glottis: they are of more recent origin and therefore of greater vulnerability.

The effect of abnormal laryngeal obstruction due to paralysis is described as affecting the CO_2 content of the blood, and it is pointed out that the percentage may rise to a great height before any signs of anoxæmia appear; for this reason tracheotomy should be performed early, as otherwise there is a danger that the patient may die even after an apparently successful operation.

In tracheotomy and total laryngectomy the obstructing influence of the glottis is lost, and it is therefore proposed by the author to design a valve for use in such cases, so constructed as to carry out the regulating effect of the vocal cords, by offering a certain degree of obstruction to the inward and outward passage of air.

In connection with the remarkably successful nerve anastomoses performed by certain surgeons, it is shown that, although movements of the previously paralysed glottis are re-established, yet the regulating effect on CO_2 exchange as described in the case of the normal larynx is not exactly reproduced in its finer gradations.

AUTHOR'S ABSTRACT.

MISCELLANEOUS.

DISCUSSION ON OCCUPATIONAL DISEASES OF THE EAR, NOSE, AND THROAT AND THEIR PREVENTION.

BRIT. MED. ASS. MEETING, BATH (*Brit. Med. Journ.*, 14th November 1925.)

1. *Industrial Diseases and the Workmen's Compensation Acts*, by F. H. Westmacott, C.B.E., F.R.C.S., B.Sc.

The paper begins with a statement of the position arising out of the Workmen's Compensation Act and the subsequent orders connected with it. It is pointed out, however, that there are many other diseases attributable to employment, but not included in the scope of these orders, because they do not give rise to such disability as unfits a man for work. Lead poisoning may lead to nerve deafness and vertigo, laryngeal paralyses and disturbances of taste

and smell. In mercury poisoning the nasal, pharyngeal, and laryngeal mucosa may suffer in the same way as the gums. Phosphorus poisoning causes "phossy jaw." Arsenical poisoning produces ulceration of the nasal septum as well as hoarseness and dryness of the throat. Dust, particularly metallic dust, may set up chronic catarrh and suppurative diseases of the nose, nasopharynx, and pharynx, as also of the Eustachian tube and middle ear. Eczematous conditions round the nasal vestibules followed by hypertrophic catarrh may also occur. Compressed air affecting caisson workers, divers, and aviators may give rise to vomiting, vertigo, and tinnitus. The symptoms are probably induced during compression by increase of positive pressure on the membrana tympani, fenestra rotunda and fenestra ovalis, with extravasation of serum or blood. The terminal fibres of the auditory nerve may be injured, with permanent deafness. Continuous noises, as in boiler-making, produce deafness by destruction of the sensitive nerve-endings. Tinnitus is invariable, but vertigo is only present in direct proportion to the loss of perception of the upper tone limit. Œdematous laryngitis may be caused directly by inhalation of irritant fumes of chlorine, bromine, iodine, ammonia or sulphuric acid. Chronic laryngitis may be met with among professional voice-users or street-callers, generally from misuse or faulty voice production.

2. *Prevention of Gun Deafness in the Navy*, by S. W. Grimwade, O.B.E., M.B., Surgeon-Commander, R.N.

In the Navy, occupational diseases of the nose, throat, and ear are uncommon and are confined mainly to the ear. Gun deafness is not nearly so common as has been supposed, indeed, in one investigation, the author found only 3 per cent. of cases of deafness really attributable to service. In two years he had only seen four cases of labyrinth concussion from gunnery practice, and the condition was only temporary. The vast majority of cases of deafness are middle ear in origin, and nearly all are due to pre-existing disease. A more careful examination of recruits would save the country a great deal of the expense incurred for compensation and pensions.

3. *Diseases associated with Aviation*, by Wing-Commander D. Rankin, R.A.F.M.S.

The effects of nasal obstruction are intensified in the air. Mouth-breathing may start or aggravate gingivitis or pyorrhœa, especially when the inspired air is cold and dry as occurs at high altitudes. Laryngitis and tonsillitis may be caused in the same way, and engorgement of the nasal mucosa may interfere with the ventilation of the frontal sinuses, causing headache during and after descent. Eustachian obstruction is, however, the most important condition. Particularly

in high flying and in rapid descents, rapid accommodation and equalisation of pressure on both sides of the drum-head are necessary, and this is rendered impossible if Eustachian obstruction is present. The tympanic membranes become congested, invaginated, or even ruptured, and pain and deafness with nausea and vertigo may occur. Noises are also excessive, both in flight and in the engine shops. The effect can be lessened by paying better attention to the situation of the exhausts on the one hand, and by intermitting the hours of work on the other.

In this country no great importance has been attached in the recruiting of airmen, to the "motion sensing functions" of the vestibular apparatus, but attention is paid to any history pointing to hyperexcitability of the labyrinth. Slight variations either above or below normal are, however, considered of little importance.

4. *Preventive Measures*, by T. Jefferson Faulder, M.B., F.R.C.S., Major R.A.M.C. (T.F.)

Interesting statistics are given of the number of recruits rejected during the recent war on account of ear, nose, and throat disabilities, of the number of soldiers who lost periods of service from the same cause, and also of the disability pensions paid on this account.

The author thinks that ruptured drum-head did not occur so often as had been alleged. Bleeding from the ear is not sufficient evidence of rupture, as pre-existing granulations may bleed after exposure to gun-fire or even jolting in wagons. When rupture does occur the tags of membrane may be found drawn out into the canal instead of being forced inwards to the middle ear.

As regards depreciation of hearing from gun-fire this is usually only temporary. The cumulative effect described by Röpke, of the German pre-war army, has not been noted by the author. He thinks that a kind of resistance may even be developed.

Chronic catarrhal and suppurative conditions of the middle ear are of far greater importance in producing disability. In gas warfare laryngitis is common, and it has been noted that in most of the persistent cases there is some degree of nasal obstruction. The latter cannot be the cause, as the preventive designs against gas all aim at producing nasal obstruction, but it is possible that recovery from the laryngitis is impeded by imperfections of the nasal passages.

5. *Deafness induced by Noisy Occupations*, by T. Ritchie Rodger, M.D., F.R.C.S. Ed.

This paper confines itself to the question of noise deafness. An outline is given of an investigation of the hearing of boiler-makers, selected according to the length of time they had been engaged

in the occupation. It was found that hearing for tuning-forks corresponding in pitch to the sounds predominant in the workshop was invariably diminished even when, as in the younger men, the lower and uppermost parts of the scale were unaffected. The clinical picture described by Barr and Habermann, with marked loss of hearing for high notes, was only found in the older men. The clinical observations were in keeping with the experimental work carried out on animals on the continent when microscopical examination of the cochlea showed degeneration of nerve-endings in sites varying with the pitch of the sound used. The incidence of vertigo in boiler-makers is explained by the concussion caused by the hammering, and is due to excitation of the nerve-endings in the semicircular canals. In the experiments on animals no evidence of such disturbance was seen when testing with electric bells, but detonation produced labyrinth symptoms. The injury is conveyed by air conduction, and prevention consists in using ear plugs of wax or vaselined wool. T. RITCHIE RODGER.

OTO-LARYNGOLOGY AT GUY'S HOSPITAL, LONDON.

(*Contributed.*)

ON the invitation of Mr W. M. Mollison and Mr T. B. Layton, the Visiting Association of Throat and Ear Surgeons of Great Britain attended Guy's Hospital on the 2nd and 3rd October 1925. Every facility was given to the members of the Association to see the work of the special department. They were greatly indebted also to Mr F. J. Steward, the Senior Surgeon of the Hospital, and to Mr C. H. Fagge, to Dr Watt of the Radiological Department, and to Mr H. W. Barber of the Skin Department, for the courtesy extended to them by these members of the hospital staff.

Operations on the Tonsils.—Ample provision had been made to illustrate variations in the technique employed in removal of the faucial tonsils. While Mr Mollison and Mr Gill-Carey demonstrated the method of dissection under a general anæsthetic, Mr Layton showed the procedure adopted in the preparation of the throat for dissection of the tonsil under local anæsthesia, and his method of enucleation in the adult by means of the guillotine.

Mr Mollison's patient was a woman, aged 32. After injection of $\frac{1}{100}$ grain of atropin, anæsthesia was induced by Mr Shipway with gas ether; the anæsthesia was maintained during the operation with ether administered by means of the Shipway apparatus, the tube carrying the anæsthetic being attached to the tongue depressor of the Davis gag. The suction pump was worked from the same apparatus and was in the hands of the anæsthetist who thus acted in a dual capacity, an arrangement which proved quite satisfactory.

In order to overcome the tendency of the lower jaw to drop, when