hoarseness has diminished with great rapidity, the patient voluntarily stating that he can now sing.

I have made a notch in the ventricular band in several other cases in which there seemed to be a focus of tuberculous disease in the ventricle.

Mr H. E. BARWELL (President) said that these cases of tuberculosis inside the ventricle presented special difficulties for local treatment. In one case he had performed laryngofissure and removed the whole of the ventricular band, and the patient's general condition had improved considerably.

ABSTRACTS.

THE EAR.

The Present Position of Deafness and its Prevention. Dr CARY, Dallas, Texas. (*Surgery, Gynæcology, and Obstetrics*, June 1927.)

The writer regards the outlook as most promising and favours routine school examinations; also propaganda among the children and teachers. He analyses the cases recorded by Shambaugh—290—in the Chicago Public Schools for the Deaf (*Archiv. Oto-laryng.*, November 1925). Of these, 145 were acquired, and in 85 of them there was no history of middle-ear inflammation. The last figure he considers misleading and suggests that a serous otitis media, with serous labyrinthitis, actually took place, without perforation of the drum membrane.

He suggests that the pædiatrician should be trained in aural diagnosis in children, especially in infectious fevers.

Discussing this paper, Dr J. M. Waugh of Cleveland, Ohio, stated that one million people in the United States were hard of hearing, and 150,000 deaf and dumb. He mentioned the effect of deficiency in vitamine A in producing sinusitis in mice, and suggested its application to man. S. ADAMS.

The Arsenic Treatment of Deafness. E. WODAK. (*Laryngoscope*, Vol. xxxvii., No. 12.)

Over 300 cases have been treated with arsenic in the form of 5 mgrms. Natr. arsenic given during a meal, preferably in the evening. Each case is dosed according to its reaction and a cautious manner is recommended owing to the possibility of arsenic idiosyncrasy. If there are no bad effects, two doses are given and then three. If symptoms of indigestion or intestinal trouble develop the arsenic is stopped, and when the irritative phenomena have disappeared,

hypodermic injections beginning with 2 mgrms. are gradually increased to 20 mgrms. Toleration of the arsenic having been ascertained, treatment may be continued till 40 to 60 pills or 200 to 300 mgrms. Natr. arsenic have been taken. The treatment must be suspended gradually and the patient given a rest of three to four months, an interval sufficient to rid the system of arsenic.

Arsenic treatment may be applied to affections of the middle-ear as well as those of the inner ear. The less advanced the case, the better the chance. If hearing improves rapidly after the first dose, the prognosis is good and the improvement lasts longer. Cases of severe deafness improve but the change is not appreciated so gratefully.

A grouping of cases according to their etiology shows that 56 cases of otosclerosis were treated, of which in 13 there was no effect, in 9 a doubtful result, with 34 a complete success. Of 74 cases of chronic middle-ear catarrh, in 24 no effect, in 50 positive improvement; among these, 31 with more than 100 per cent. increase in hearing. Neuritis cochlearis, in 24 cases with 58.5 per cent. a positive success. Altogether 213 auditory organs have been treated, 82 with no result, 131 or 62 per cent. successfully. The purpose of the publication is to draw attention to this kind of treatment and have it further tested.

ANDREW CAMPBELL.

Medical Diathermy in Chronic Middle-Ear Deafness. DAN MCKENZIE (*Lancet*, 1928, Vol. i., p. 597.)

The writer draws attention to the value of medical diathermy for diminishing deafness and tinnitus in chronic middle-ear disease. In the form employed, the apparatus for obtaining which is described in detail, a beam of high frequency current traverses the tissues between two electrodes and raises their temperature, and solely to this rise of temperature is the therapeutic action of the diathermy attributed. The author considers the treatment indicated in tubo-tympanic catarrh and the deafness following acute suppuration when active disease has subsided. He considers it worthy of prolonged trial in otosclerosis, "particularly in those cases in which the diagnosis of otosclerosis is not quite definite." The presence of pus and Ménière's syndrome are contra-indications. That the treatment is still in the experimental stage is emphasised.

MACLEOD YEARSLEY.

Ionisation in Chronic Non-suppurative Otitis Media. Drs FRANQUER and LAUDRY. (*Annales des Maladies de l'Oreille, du Larynx, du Nez et du Pharynx*, Jan. 1928.)

After explaining the theory of the passage of electrolytic ions to various soft tissues of the body viâ the local vascular and lymphatic circulations, the writers confirm this by describing the results of their experiments on the middle and internal ear.

Abstracts

Of the many ionisable medicaments that can be employed they find that the ions of anhydrous silicon give the best results in treatment of the chronic non-suppurative diseases of the middle and internal ear.

They claim in their own practice alleviation of deafness and tinnitus in 60 to 70 per cent. of cases treated. The electrodes are placed, the one in the ear and the other on the eyeball, and the course of treatment extends to 30 séances, one being given every other day.

They combine the ionisation treatment with mechanical massage of the tympanum by one of the usual well-known methods.

L. GRAHAM BROWN.

A New Aid in the Diagnosis of Mastoiditis. ISIDORE FLIESNER and SAMUEL ROSEN. (*Laryngoscope*, Vol. xxxvii., No. 10.)

As bone is composed of over 95 per cent. of calcium it occurred to one of the authors (I. F.) that an increased calcium content in pus would be an index of solution of bone. Calcium determinations of pus from manifest sources of bone necrosis were made and compared with pus from other sources. Pus from abscesses of soft parts, suppurative adenitis, chronic sinusitis, acute otitis media averaged from 6.5 to 9.6 mgrms. per 100 c.c. of pus, while pus from acute mastoiditis with necrosis of bone, osteomyelitis of long bones, chronic antritis with fistula, perforated sinusitis averaged 20 to 33 mgrms. per 100 c.c. of pus.

A child, aged 8, suffering from acute otitis media was admitted to hospital. During the first week the calcium content of pus fell from 13 to 6 mgrms. per 100 c.c. During the third week it rose to 26 mgrms. The hearing was poor and there was fever. There was an extensive purulent process within the mastoid and culture showed a hæmolytic streptococcus.

ANDREW CAMPBELL.

Abducens Paralysis in Acute Middle-Ear Inflammations. A. A. BOONACKER and HUIZINGA EELCO. (*Zentralbl. für Hals-, Nasen-, und Ohrenheilkunde*, 1927, Vol. ii.)

The authors have observed that abducens paralysis in cases of middle-ear disease always occurs in the winter months, and always during influenza epidemics. Careful examination showed in these cases some evidence of influenzal infection, for example—suppuration of the maxillary antrum. They deduce therefrom that abducens paralysis in middle-ear disease is a neuritis. Support is given to this view by the occurrence of simultaneous peripheral nerve lesions, for example in one case there was also a peroneal palsy. The trigeminal neuralgia, part of the syndrome of Gradenigo is also, according to the authors, a polyneuritic manifestation. No meningitic signs were observed in any case; lumbar puncture was done in one case, and there the cerebrospinal fluid was normal. All cases recovered completely.

In one an antrotomy was needed, but the paralysis had disappeared before the operation was performed. In another case where resection was necessary on other grounds, the apex of the petrous was normal throughout. It is admitted that the paralysis always occurs on the same side as the suppuration, but the authors point out that a toxic neuritis always shows a predilection for neighbouring nerves, as for example in accessory sinus disease.

They point out, too, that abducens palsy and trigeminal neuralgia may occur in the course of a middle-ear catarrh, without any sign of suppuration, and, in these circumstances, may be cured by catheterisation. The authors hold that an abducens paralysis, by itself, is not an indication for a mastoid operation. F. WATKYN THOMAS.

Facial Neuralgias in the Gradenigo Syndrome. P. RUSSI. (*Arch. Ital. di Otol.*, Vol. xxxviii., p. 7, July 1927.)

The author reports a case which he considers unique in that the patient who had acute otitis media was brought to a medical man solely on account of severe neuralgia of all three branches of the trigeminal nerve.

A child, aged 7, had had severe earache in the left ear twenty days previously. After rupture of the drumhead with escape of pus the pain disappeared. For fifteen days there had been some retro-auricular swelling, accompanied by headache over the whole left side of the head and in the orbit. Later the pain was felt most severely in the face and especially in the lower jaw, so that the patient was unable to masticate. Four days before the patient was seen by the author the child had noticed suddenly that he was seeing double.

In examination the jaw was held rigid, and separation of the teeth caused considerable pain at the angle of the jaw and in the ear. The left eye showed paralysis of the external rectus muscle. Tactile, thermic and taste sensations were retained. The eye grounds were normal. The left ear was full of pus with a bulging drumhead and a small anterior perforation. There was slight swelling and redness of the mastoid.

Paracentesis was performed but three days later a mastoid operation was necessary. Some granulations were found around the lateral sinus. The dura mater of the middle fossa was seen and was apparently healthy. On the fifth day the eye movements had returned to normal but slight headache still persisted. A few days later this disappeared also and recovery was uneventful.

Discussing the pathology of the condition the author attributes the symptoms to inflammation of a group of cells around the Eustachian tube and involving the region of the Gasserian ganglion as well as the sixth nerve. He quotes several reported cases of severe facial

neuralgia associated with mastoiditis but without strabismus, and he states that so far he has been unable to find one with severe facial neuralgia as the leading symptom associated with the Gradenigo syndrome. J. K. M. DICKIE.

THE NOSE AND ACCESSORY SINUSES.

Rhinopletismography. DARIO MÆSTRANZI. (*Archivio Italiano di Otologia rinologia e laringologia*, November 1927.)

The author has evolved a method of estimating the hydraulic state of the mucous membrane under various conditions. He places a rubber bag between the septum and the inferior turbinal of such a size that it is just in contact with these two structures and is in contact above with the middle turbinal and below with the floor of the nose. It is connected with a Marey's tambour which writes on a revolving drum and records any variation in the volume of the nasal mucosa.

During quiet respiration via the mouth there is just a faint periodic variation corresponding to the respiratory movements, but during nasal respiration these variations are very much more marked. There is also a very small variation corresponding to the cardiac cycle. A change from the standing to the lying position raises the intranasal pressure very slightly. Compression of the neck in the region of the jugular vein on one side causes a marked increase in the intranasal pressure on the same side and a less marked increase on the other side. Previous cocainisation of the mucosa abolishes these reactions. Compression of the larynx causes a comparatively long-sustained rise of pressure.

Inhalation of ethyl chloride causes a diminution, acetic acid a rise and ammonia a fall, followed by a rise in pressure in the nasal mucosa. These experiments open up a large field for the investigation of the vasomotor system of the nose. F. C. ORMEROD.

Lacrymal Obstruction: Its Nasal Origin and Intranasal Treatment. F. HOLT DIGGLE. (*Brit. Med. Journ.*, 19th November 1927.)

This paper read before the Ophthalmological Section of the Association at the Annual Meeting in Edinburgh represents an investigation of 120 cases of lacrymal obstruction. The majority of the patients were between 30 and 60 years of age. The intranasal condition was carefully noted in each case, as also the breadth and width of the nose and any signs of external injury. The percentages of the different pathological conditions observed are noted and the following conclusions are reached—"the incidence of nasal deformities, abnormalities, and diseases, in cases of established lacrymal obstruction is a rarity. The failure in relieving the lacrymal obstruction following the rectification of such nasal lesions as were found, with the exception of suppurative ethmoiditis which is in itself rare, seems to preclude

them as etiological factors in lacrymal obstruction. The absence of a history of nasal trouble in the majority of cases, as also the rarity of the incidence of nasal disease, would seem to render the nasal origin of lacrymal obstruction "non-proven." That there is a nasal cause would seem to be undoubted, but its exact pathology and incidence still needs further investigation."

In the author's series, West's operation resulted in a cure in 71 per cent. T. RITCHIE RODGER.

The Treatment of Ozæna with Active and Passive Antidiphtheritic Serum. F. v. d. HUTTEN. (*Münch. Med. Wochenschrift*, S. 1625, Nr. 38, Jahr 74.)

The author endeavoured to corroborate the brilliant results claimed by Vogel in the treatment of ozæna by means of a mixture of active and passive diphtheria antitoxin. In both his own and Vogel's experiments the preparation used was a mixture of toxin and antitoxin which is put up by Messrs Behring of Marburg under the trade name of Ozænasan.

The injections were made subcutaneously in the breast region. In the first instance a dose I was administered, and then at intervals of six days a dose II was given until a total of six doses had been received. There were no noticeable secondary disturbances and the injections were for the most part well borne.

The treatment was given to eight patients with well-marked ozæna. In five of these there was not the least subjective or objective improvement. In one case there was a temporary diminution of crust formation without any influence on the fœtor. One patient refused to continue after four unsuccessful injections. In one case of medium severity there was distinct diminution of both the fœtor and of the crust formation, an improvement which endured six months subsequent to the last injection. He was unable with his more limited material to concur with the results obtained by Vogel, and considers that the unreliable results which he obtained may be looked upon as nothing more or less than the effects of an unspecific irritative therapy.

J. B. HORGAN.

Four Cases of Orbito-Ethmoidal Osteomata with Intracranial Complications. HARVEY CUSHING. Presidential Address to the American Surgical Association. (*Surgery, Gynæcology, and Obstetrics*, June 1927.)

These cases were all in men. The osteomata arose in the posterior ethmoidal cells, pressing the lateral ethmoidal wall into the orbit, and a process of the tumour extended through the dura mater into the anterior cranial fossa of the skull.

Abstracts

CASE I.—A man of 24, for six months complained of increasing headache, right exophthalmos, and loss of vision. The X-ray showed "a-poorly defined area of increased density in the posterior portion of the right orbit."

An exploratory operation by a right frontal osteoplastic flap was undertaken, and in the anterior fossa a small bony nodule in the posterior ethmoidal region was found projecting through the dura mater. When the attached ring of dura mater was freed from the neck of this nodule, cerebrospinal fluid escaped. The roof of the orbit was then removed and the capsule of the tumour incised. The upper surface of a dense smooth bony tumour was exposed. In removing the small projecting nodule an adjacent mucocele was opened.

The main tumour was then rocked free and removed from the orbit. The patient died of meningitis nine days later, probably due to spread of infection from the posterior ethmoidal cells.

CASE II.—A man of 22, in a period of four years had had three attacks of acute swelling of the right orbital tissues. After one of these an operation on the ethmoid cells gave negative findings; after another a craniotomy revealed a frontal lobe abscess (?) containing fluid and air, and a bony tumour as big as the end of the thumb inside the skull, near the mid-line above the nose; his third attack subsided. In addition he had had a series of general convulsions over a period of two years. At an exploratory operation the dura mater was found adherent to the neck of the tumour, but as the frontal sinus was found to be infected the operation was abandoned.

Later he returned, and after admission developed a rhinorrhœa—with a tinkling sound on moving his head which could be detected objectively. X-ray showed the bubble of air in the lateral ventricle.

No operation was felt justified, but three months later headache and convulsion were followed by death in a few hours.

CASE III.—A man of 41 had symptoms for one year; left-sided headaches, awkwardness in using right hand, hesitant speech, loss of memory and difficulty in calculating. X-rays showed a long sharply outlined clear area of the density of air running backward along the left frontal bone 13 cms. in length and 5 cms. in breadth. A dense shadow was present in the left frontal sinus.

At exploratory operation a large cyst was found after reflecting the dura mater, which on puncture contained air. Its walls were naked white nerve tissue, and no fluid was present. The cyst was filled with Ringer's fluid and the dura mater and skull closed. He recovered and was completely well for a time, but four months later his symptoms had returned and the cyst had refilled with air.

A second operation exposed the nodule of bone, its neck surrounded by a collar of dura mater. This was dissected off, leaving a defect of

1 cm. in diameter in the dura mater through which the thickened and adherent pia-arachmoid could be seen. After removal of the nodule a minute thread-like tube of mucous membrane, about the size of a small arteriole, was seen, through which a bubble of air could be forced from the ethmoid cells.

A fascial graft from the leg was sutured over the defect in the dura mater and the wound closed. He made a complete recovery and has remained well for a year.

CASE IV.—Man of 35 had had several attacks of pain, attributed to frontal sinusitis, since 1910. In the course of investigation an X-ray revealed an opaque tumour nodule in the back of his right orbit. The nodule seemed to be causing few symptoms, but while under observation his visual acuity dropped and hence operation was advised.

Operation revealed the dura mater adherent round the neck of the bony tumour 2 cm. from the midline and at the level of the posterior ethmoidal cells. The collar of dura mater was elevated free, the roof of the orbit opened, and the bone removed to the margins of the nodule. The tumour was rocked out of its bed and dislodged, leaving a large opening into the posterior ethmoidal cells. The outer wall of the ethmoid was found to have been displaced towards the orbit, and on removing this the orbital contents quickly refilled the gap.

The capsule of a mucocele was found to lie within the dural opening and this extruded itself and was followed by cerebrospinal fluid. A fascial graft was placed over the hole in the dura mater. The patient made a perfect recovery.

Cushing points out that three of these four patients had a scar of a frontal wound received some years before, and suggests the origin of these osteomata lies in injuries to the frontal region of the skull with fracture of the base, or diastasis of the fronto-ethmoidal suture.

In all these cases intranasal examination was entirely negative.

S. ADAMS.

THE TRACHEA AND BRONCHI.

Reconstruction of the Trachea. FRED R. FAIRCHILD, Woodland, California. (*Surgery, Gynæcology and Obstetrics*, January 1927.)

As a result of a motor car accident the patient, a man aged 25 years, lost 3.5 cm. of the trachea in the neck. The author reviews the literature of the subject, and discusses the necessity or otherwise of including cartilage or bone in the repair graft to prevent collapse of the tracheal tube.

By means of a pedicle skin graft, without bone, from the pectoral region he was able to reconstruct the trachea, in a three stage operation. Difficulties from contraction of the divided lower end of the trachea were met by forming an elliptical opening by cutting the anterior part of the tracheal rings lower.

The patient made a good recovery, and was able to do full manual labour, with no dyspnœa except on extreme exertion. S. ADAMS.

The Diagnosis of Bronchiectasis. DAVID H. BALLON and H. C. BALLON, Montreal and Quebec. (*Acta Oto-laryngologica*, vol. xi., Fasc. iv.)

The use of lipiodol has proved to be both safe and satisfactory in the diagnosis and treatment of bronchiectasis and views on bronchiectasis have been somewhat altered. The disease and its variations have been described in the past from post-mortem examinations. If better results are to be obtained from treatment we should benefit by recent knowledge gained after lipiodol injection. By bronchoscopic examination and from lipiodol injection-pictures the authors have been able to note that there are certain types of bronchiectasis presenting a definite bronchoscopic appearance and lipiodol injection-picture which respond satisfactorily to bronchoscopic treatment.

There are others which should be suited for more radical surgical measures, while there exists a large percentage of the bilateral type in which posture and aids to posture only should be considered.

The author's classification of five radiological types is given with diagrams, each type being discussed and treatment considered; examples being shown in X-ray pictures.

The authors conclude that the application of lipiodol as an aid to the diagnosis and treatment of bronchiectasis will bring the best results when it is employed by the bronchoscopic method.

H. V. FORSTER.

Bronchiectasis and Sinus Disease. LOUIS H. CLERF. (*Archives of Laryngology*, Vol. vi., No. 1, July 1927.)

Clinical observation and experimental study show that nasal accessory sinus disease is a factor in producing bronchiectasis. From this cause bronchiectasis is commonly bilateral, whereas when it follows pneumonia, abscess of the lung or retained foreign body, usually only a single lobe is involved. The inhalation of infectious material plays a part in chronic bronchitis, and in children the peribronchitis associated with glandular involvement is important. A patient with a chronic cough should always have the sinuses thoroughly investigated and treated. If a diagnosis of bronchiectasis is probable then both bronchoscopic and pneumographic examination should be made to confirm it. By these methods the cause of the bronchiectasis is determined and proper treatment instituted. A concomitant infection of the nasal accessory sinuses should always be treated in the first place. DONALD WATSON.

Miscellaneous

Primary Cancer and Secondary Cancer of the Bronchus diagnosed by Bronchoscopy. J. GUISEZ. (*Bulletin d'Oto-Rhino-Laryngologie*, May 1927.)

The author lays great stress on the importance of bronchoscopy in those comparatively rare cases of primary and secondary cancer of the bronchi where the exact diagnosis cannot be determined either clinically or by means of X-rays.

He describes fully with diagrams the clinical history, pathology and treatment of a case of primary cancer of the right bronchus which on tracheoscopy was found to be growing from the entrance to the right bronchus, and by its granulating mass almost completely blocking the inferior portion of the trachea and the left bronchus.

Treatment consisted in removal of this mass by forceps and local applications of radium to the site of the growth. Complete respiratory relief and retrogression of the cancer occurred, but the patient died soon afterwards from hæmorrhage owing to the presence of a former tracheo-pleural fistula. Four other somewhat similar cases are briefly described, the author claiming for his therapeutic measures with radium almost total relief from dyspnœa as well as an actual retrogression of the tumour.

He then describes a case of extension of a carcinoma of the œsophagus to the region of the tracheal bifurcation and left bronchus diagnosed by bronchoscopy after symptoms of hæmoptysis had supervened. L. GRAHAM BROWN.

MISCELLANEOUS.

Incidence of Rheumatism, Chorea, and Heart Disease in Tonsillectomised Children—a Control Study. ALBERT D. KAISER, Rochester, New York. (*Journ. Amer. Med. Assoc.*, Vol. lxxxvii., No. 27, 31st December 1927, p. 2239.)

A survey was made of 48,000 school children, in 20,000 of whom the tonsils had been removed, and in 28,000 not removed. The history pertaining to rheumatic fever, chorea, scarlet fever, and heart disease was obtained, and 1200 showing signs of rheumatic fever, chorea, and heart disease were examined. Most of the 20,000 children had had their tonsils removed at least five years previously. Rheumatic fever, joint pains, or growing pains occurred in both groups, 8 per cent. of the tonsillectomised group, and 10 per cent. of the non-tonsillectomised had rheumatic manifestations. Many of the former had rheumatic symptoms before tonsillectomy. The tonsillectomised child not yet infected had a better chance to escape rheumatic infection over the same period of time than the child whose tonsils had not yet been removed. Recurrent attacks of rheumatic fever were less common in the group in which operation had been performed. Chorea occurred

only slightly less often, 0.4 per cent. as compared to 0.5 per cent. in the tonsillectomised group. The incidence of carditis following chorea was decidedly less in the tonsillectomised children. Scarlet fever occurred in 7.6 per cent. of the tonsillectomised group and in 16 per cent. of the non-tonsillectomised group. The children whose tonsils had been removed, and who developed scarlet fever, had considerably less valvular heart disease than those with scarlet fever in the control group. Rheumatic heart disease was found in 450 of the 20,000 tonsillectomised children and in 817 of the 28,000 who were not operated upon. Many of the children in the former group developed heart disease before tonsil enucleation. A careful analysis of 478 cases of carditis showed that in 83 per cent. the condition developed before tonsils were removed, and in 17 per cent. following removal. Based on a control study of 20,000 tonsillectomised children it must be concluded that the tonsil is a factor in the causation of rheumatism, scarlet fever, and chronic heart disease. The tonsillectomised child is assured greater protection against these infections than his companion whose tonsils have not yet been removed. The article is illustrated by charts. ANGUS A. CAMPBELL.

A Standard Technique for Operations on Peripheral Nerves. W. W. BABCOCK, Philadelphia. (*Surgery, Gynæcology and Obstetrics*, September 1927, Vol. xlv., No. 3, p. 364.)

From his experience of 660 cases of peripheral nerve injury the author has reached conclusions on the method of operation, of which some may have moment in the problem of surgical repair of the facial nerve in the facial canal.

He regards correct end-to-end suture of the divided nerve as the only certain means of restoring function, and nerve grafting he condemns as useless.

The suture material should be fine silk, No. 0000 to size A. Catgut and especially chromic catgut he condemns, owing to the liquefaction-necrosis set up. Many fine sutures are preferable to a few coarse ones, and the sutures pass through the sheath of the nerve only, care being taken that the sheath is not inverted.

The nerve ends are freshened prior to suture, each being sliced back until nerve bundles can be recognised everywhere within the sheath. He slices the proximal neuroma until these nerve bundles can be recognised; and prefers to obtain nerve free from chronic neuritis, but this is not essential.

A sutured nerve should be placed in a normal intermuscular plane, or buried in living muscles.

The illustrations are adequate, and the diagrams of the operative technique clear. No references are given. S. ADAMS.