Abstracts

The auricle was reflected forward by the usual post-aural incision, and a large cast of the meatus was removed disclosing a tympanic cavity full of granulations. The radical mastoid operation proved the original disease to have been cholesteatoma. The pterygoid abscess was drained successfully by enlarging the fistula in the meatal floor.

Pterygo-maxillary abscess is not common. I have on two occasions successfully drained it through a meatal opening close to the tympanum, but, when large, it is perhaps most suitably drained by an opening in the pharynx, as this is the lowest point.

ABSTRACTS

THE EAR.

The Test by Centrifugal Pressure in the Differential Diagnosis of Chronic Deafness. Dr VAQUIER. (*Rev. de Laryngol.*, September 1924, p. 571.)

The author discusses the value of Gellé's test and that of Escat in the diagnosis of ankylosis of the stapes. Escat's test is carried out by holding a vibrating tuning-fork of medium pitch opposite the ear to be tested, and then asking the patient to inflate his ears by Valsalva's method. In normal persons the sound of the tuning-fork is diminished, and the test is said to be positive. In stapes ankylosis there is no diminution of hearing and the test is negative.

In testing 100 normal subjects with Gellé's and Escat's tests the results coincided in all. In 61 cases of otosclerosis Gellé's test was tried thirty-eight times and Escat's sixty-one times; the result was negative in 58 cases and agreed in all. In a number of other cases with deafness of varying degree and origin the tests always agreed, and the author concludes that Escat's intratympanic pressure test is a valuable and reliable method of ascertaining the mobility of the stapes. J. K. M. DICKIE.

Otogenous Abducens Paralysis. K. ULRICH, Zurich. (*Zeitschrift für Hals-, Nasen-, und Ohrenheilk.*, Vol. ix., Part 4, January 1925, p. 403.)

In the light of a case studied by himself, the author reviews the question of the pathological substratum for the syndrome of otitis with paralysis of the sixth and neuralgia of the fifth nerve, attributed by Gradenigo to an osteitis of the tip of the petrous bone. The case was

one of acute exacerbation of a chronic middle ear suppuration calling for paracentesis and mastoid operation. Pus was only found when the antrum was reached. There was severe pain in the regions supplied by the first and second divisions of the trigeminal nerve, and twelve days later double vision from paralysis of the sixth nerve. The symptoms subsided with the exception of the abducens paralysis. Two months later, after a walk, there came on suddenly giddiness, vomiting, and diffuse headache followed by stupor, stiffness of the neck, Kernig's sign and exaggerated reflexes; in short, diffuse purulent meningitis with streptococcus mucosus in the cerebro-spinal fluid, of which the patient died in a few days. The orifice of entrance of infection to the meninges was only found on microscopical examination, the original focus being extra-dural and affecting the tip of the petrous bone. The Gasserian ganglion was invaded and materially damaged by suppuration, and the sixth nerve was reduced in size to a mere thread. The degeneration was traced peripherally and not from above.

The author considers that this case goes to confirm Gradenigo's views, and that the condition in question was present long before the lepto-meningitis set in. There was, however, some photophobia, but it disappeared when the opposite eye was shut, and was therefore traceable to the disturbance of the ciliary nervous plexus and not to a diffuse meningitis either purulent or serous.

JAMES DUNDAS-GRANT.

Cerebral Symptoms in Otogenic Sinus Thrombosis. Professor Dr W. KLESTADT, Breslau. (*Zeitschrift für Laryngologie, Rhinologie, etc.*, November 1924.)

Certain symptoms and signs suggesting intracranial disease, such as drowsiness, coma, vomiting and optic neuritis, are sometimes observed after operations for lateral sinus thrombosis. Exploration of the temporal lobe and cerebellum is negative, the cerebro-spinal fluid is normal and the patient recovers. In a series of sixty cases of uncomplicated sinus thrombosis, this sequence was observed four times. In each of the four cases, the sinus operated on was the *right* one.

In the course of a lengthy article, well worthy of detailed study, the author attempts to prove that these symptoms are due to interference with the venous circulation from the brain tissues; he calls them back pressure phenomena or "Stauungserscheinungen." Blockage of one lateral sinus is not likely to cause any symptoms of this nature, as the circulation via the torcular and the opposite sinus is free. There are cases, however, where one transverse sinus is very small (usually the left), or the superior longitudinal sinus passes entirely to the right side without any anastomosis at the torcular. There is a corresponding large right and a very small left internal jugular vein. Patients having

this anatomical peculiarity are likely to develop the above symptom-complex and may even die, if for any reason—either in connection with a neck operation or from an otological complication—the larger venous channel suddenly becomes occluded. This applies with still greater force to those rare cases where both internal jugulars have to be tied, or where both transverse sinuses become occluded through thrombosis spreading across the torcular. Many other interesting points are raised and there is a great wealth of post-mortem observations, both first-hand and those collected from the available literature. These all tend to support the author's thesis. J. KEEN.

The Operative Treatment of Otogenic Thrombophlebitis. ERIK KNUTSON, Gothenburg. (*Acta Oto-Laryngologica*, Vol. vi., fasc. 3-4.)

This article begins by reminding us that sinus phlebitis and sinus thrombosis are not synonymous. Otogenic sinus thrombosis is always preceded by phlebitis, but the latter is not necessarily accompanied by thrombosis. Evidence is quoted that otogenic general infection (pyæmia and septicæmia) can occur without coexisting thrombophlebitis —for example, by direct absorption from foci in the temporal bone or middle ear—but in most cases it is due, with rare exceptions, to thrombophlebitis in the sigmoid sinus, or bulb, or in both.

The author, after briefly referring to indications for operative treatment in cases of suspected sinus phlebitis, goes on to describe the principal points of his operative method and to state his intention to dwell on some of the much discussed questions, especially the ligature of the internal jugular vein and the treatment of thrombophlebitis of the bulb.

In a case of suspected sinus phlebitis when a simple or radical operation has been thoroughly performed, according as to whether the case is an acute or chronic one, the sinus is exposed and whether the part exposed to the eye and touch appears normal or not, the character of the wall and contents are examined by puncturing with a syringe with a fine point in an oblique direction. Information as to any thickening of the sinus wall, the presence of a mural thrombus or obstructing thrombus may be gained by this method. If the external appearances are normal and if punctures at three points (middle and ends) suggest no change in the sinus wall or contents, the operation is discontinued at this point. Only when pronounced septic or pyæmic symptoms or metastasis are present is the internal jugular vein tied and examined. If pathological changes are found in the sinus wall this is incised, and, if clot is present, this is followed even to the jugular foramen after amputating the tip of the mastoid.

When the case has been treated in the way described, should no improvement take place during the next few days, the sinus is again

examined and if not previously incised this is now done, and should no new pathological changes be found the internal jugular is ligated. The ligature of the internal jugular vein is now discussed by the author, and conclusions from his own cases formulated. He then takes up the question of bulb thrombosis. Extended bulbus thrombosis is not difficult to find out, but cases of an isolated thrombus in this situation are rare and difficult to diagnose.

The different methods of approach to the jugular bulb are described, and finally prognosis is discussed, the author comparing his conclusions with Mygind's recent work on the prognosis of sinus phlebitis.

H. V. FORSTER.

The Operative Treatment of Otogenic Thrombophlebitis. H. VON FIEANDT, Helsingfors. (*Acta Oto-Laryngologica*, Vol. vi. fasc. 3-4.)

The author urges the complete removal of the clot in all cases of lateral sinus thrombosis even should it necessitate the exposure of the bulbo-jugular trunk, and the opening remarks of his paper deal with the pathology and bacteriology of the thrombus. A venous thrombus caused by transparietal infection is invaded by micro-organisms, if not at the start, at least very early. It is not necessary for a thrombus to liquefy in order to establish transport of infective material. A so-called benign or solid thrombus is a carrier of bacteria and often causes typical metastatic pyæmia. One should abandon the idea that a macroscopically benign thrombus is clinically innocent.

Alexander found that the ends of a thrombus contain most bacteria. The newer parts of it are richer in them. The internal jugular vein of one side is not the only portal of infection to the general circulation. We may have a retrograde spread via the torcular Herophili.

The only procedure which will produce all the conditions favourable to the stoppage of infective transport and at the same time prevent intracranial complications such as meningitis and cerebral abscess which, as well as pyæmia, may be caused by thrombo-phlebitis, is to remove completely the thrombus which is responsible.

The author proceeds to examine the material at his disposal from the following points of view:—

1. The results obtained following incision into the sinus and partial thrombectomy.

2. Those obtained following partial thrombectomy and ligature of the internal jugular vein.

3. Those after total extirpation of the clot: He shows the gross mortality in groups 1 and 2 to be twice as great as after complete removal of the thrombus.

Abstracts

Concerning ligature of the internal jugular vein, this should only be undertaken either for diagnosis of the condition of affairs or as part of an operation for total thrombectomy. He finally mentions how it may be necessary to expose the bulbo-jugular trunk and describes a modification of Tandler's procedure for this difficult operation.

H. V. FORSTER.

THE NOSE AND ACCESSORY SINUSES.

Observations on some Diseases of Central America (*Tropical Rhinoscleroma.*) ALDO CASTELLANI, M.D., F.R.C.P. (*Medical Press*, 11th February, 1925.)

Among other interesting diseases which the writer recorded during his recent visit to Central America were some cases of Rhinoscleroma. This disease is not uncommon in Austria, Poland and Russia, but is extremely rare in the Tropics, with the curious exception of Guatemala. It begins as a painless red nodule, of cartilaginous or even stony hardness, in the nostril, or on the surface of the nose, or upper lip. The tumour is believed to be caused by a bacillus, closely allied to Friedländer's pneumobacillus, and it has a tendency to recur after removal. The routine treatment in Guatemala is by X-rays.

DOUGLAS GUTHRIE.

Submucous Resection of the Nasal Septum: A Simple Flap Suture. W. F. WILSON, M.B., B.S. (*Brit. Med. Journ.*, 1st Nov. 1924.)

As an easy method of passing a suture without danger of tearing the flap, an ordinary hypodermic needle is used as a carrier. A strand of horse-hair is passed through the needle and withdrawn till one end just disappears within the point. The needle is then inserted from before backwards, piercing both edges of the flap. The horse-hair is next passed through and grasped by appropriate forceps at the point of the needle, which is then withdrawn.

T. RITCHIE RODGER.

On Necrotising Sinusitis. PROF. KOMPANEJETZ, Jekaterinoslav. (*Zeitschrift für Hals-, Nasen-, und Ohrenheilk.*, Vol. ix., Part 1, p. 1, Sept. 1924.)

This condition is usually characterised by pain, redness and swelling of the cheek and eyelids with fetid nasal suppuration, and pointing of the abscess in the cheek with formation of a fistula. A probe passed through this impinges on bare rough bone. The condition originates usually in a septic tooth and takes its severe

course owing to unusual virulence of the bacteria (streptococci, staphylococci or Vincent's organisms) with diminished powers of resistance due to a low state of the constitution. There is a tendency to extension to the orbit or meninges. The treatment required would seem naturally to be a free external opening, but, in the three cases described in the paper, recovery followed removal of the diseased tooth and such intranasal procedures as resection of the middle turbinated body and clearance of the middle meatus.

JAMES DUNDAS-GRANT.

The Treatment of the Pain in Acute Frontal Sinusitis by Nerve-Blocking. DR DUBRÉ. (*Annales des Maladies de l'Oreille*, June 1924.)

The writer claims to have solved the above difficult problem. The usual treatment on medical and surgical lines are referred to, but they cannot be said to be consistently successful.

The ophthalmic division of the fifth cranial nerve, after leaving the sphenoidal fissure, divides into three branches, frontal, lachrymal and nasal. The frontal terminates in the external frontal, which supplies the mucosa of the frontal sinus. The nasal divides into external and internal branches, the latter supplying the region of the anterior ethmoidal cells.

The nerve-blocking is carried out as follows: A 2 c.c. syringe is used, with a fine needle 3.5 cm. long, filled with a 4 per cent. solution of scurcaine, with adrenalin.

(1) Nasal internal.—At a point half-way between the pulley of the superior oblique and caruncle of the eye, the needle pierces the soft tissues as far as the bone. The direction is now changed backwards in the same plane, injecting a little of the fluid *en route* until the point of the needle has traversed 2 cm., where 1 c.c. of the fluid is injected.

(2) Frontal external.—The needle is withdrawn and the supra-orbital notch is sought, 2.5 cm. from the middle line, where the remainder of the fluid is injected.

The results of this procedure are said to be excellent.

GAVIN YOUNG.

Posterior Sinusitis and Retrobulbar Neuritis. DR GEORGES LIÉBAULT. (*Revue de Laryngologie et d'Otologie, etc.*, 15th September, 1924.)

There is much difference of opinion as to the cause of retrobulbar neuritis. Some even deny that the sphenoidal sinuses and posterior ethmoidal cells play any part in the disease. The disagreement may be due to two causes.

Firstly, in the general physical examination some disease, such as disseminated sclerosis, has been overlooked.

Secondly, an unsatisfactory classification of lesions of the posterior sinuses exists.

There are three types of involvement of the sphenoid and posterior ethmoidal cells.

(1) Polypoid degeneration, as seen in the superior posterior nasal region—common in occurrence and known to all.

(2) Generation of pus by the sinuses in question—the classical case of suppurative spheno-ethmoditis.

(3) No pus, no polypi—merely congestion of mucous membrane in the superior posterior region—this, the "congestive and catarrhal lesion," is much more discrete than formerly supposed.

Types (1) and (2) are rare in cases of retrobulbar neuritis, rather is it type (3), in which no lesion can be diagnosed, but nevertheless operation is requested and performed with astonishing results.

In reality a lesion is present which is not "infective" but "congestive." Operation by the endonasal route is preferred to either the external or the trans-septal routes as it is quicker and more effective. Posterior sinusitis should retain an important place in the etiology of retrobulbar neuritis, and when diagnosed, operation should not be delayed.

J. B. CAVENAGH.

A large Subdural Cyst of the Frontal Lobe. Dr W. G. SHEMELEY, jun. (*Laryngoscope*, Vol. xxxiii., No. 8, p. 575.)

Detailed notes are recorded of a large subdural cyst developing after traumatism. The main symptoms were a shuffling gait, slow cerebration, poor vision, severe right frontal and right temporal headache, blunting of olfactory sense; and when walking, there was tendency to pitch forward. There was marked optic neuritis more severe on the right side and small scattered retinal hæmorrhages, pupils dilated and no reaction to light on the right side. All the other cranial nerves gave negative findings. The vestibular reactions tested by galvanism were normal but there was a spontaneous pastpointing of eight inches inward on both sides. Wassermann test negative—temperature, 98; pulse, 64; respiration, 24. A diagnosis of tumour of the right inferior frontal convolution was made, but the operation revealed a large subdural cyst. A good recovery followed and the patient was seen four years after operation. The eyesight had improved considerably, the sense of smell was much better, and the patient had remained comfortable since operation.

ANDREW CAMPBELL.

Pharynx

PHARYNX.

Endocranial Complications after Peritonsillitis. E. WESSELY, Vienna. (*Zeitschrift für Hals-, Nasen-, und Ohrenheilk.*, Vol. ix., Part 4, p. 439.)

The author narrates a case in which incision was refused by the patient. There developed a thrombosis of the cavernous sinus. In spite of operation the patient died, and there was found purulent thrombo-phlebitis of the sinus with suppuration in the sella turcica extending to the base of the brain. Another noteworthy condition was an abscess in the internal pterygoid muscle, explaining the extreme degree of trismus present. In another case of the author's, suppuration extended down the neck with septic thrombosis of the great veins. There were metastases in the gluteal region. Icterus supervened and the patient died of "sepsis following angina." In addition to the conditions in the neck there was found, post-mortem, purulent meningitis on the floor of the corresponding middle cranial fossa.

The author traces the extension of the disease through loose connective tissue in the para-tonsillar space—external to the constrictor muscles and pharyngeal fascia—to the base of the brain, it being guided to the foramen ovale by the third division of the fifth nerve, and, in addition, through the venous plexus in this space. He confirmed these views by forcible injection of Indian ink into the peritonsillar space.

He finds these complications are comparatively rare, and can offer no absolutely reliable indication for diagnosis in good time. He cautions against puncture of the lateral wall of the pharynx when opening a peritonsillar abscess. He reminds us of the access to the para-tonsillar space afforded by lateral pharyngotomy.

Several cases are quoted, including one published by Wylie and Wingrave in the *Lancet* for 1st February 1919.

JAMES DUNDAS-GRANT.

PERORAL ENDOSCOPY.

Unilateral Purulent Bronchitis due to Bronchial Calculus. M. HAJEK, Vienna. (*Zeitschrift für Hals-, Nasen-, und Ohrenheilkunde*, Vol. viii., Part 2, p. 206.)

The case was looked upon as one of bronchiectasis, and when it was referred to Professor Hajek, there was found by tracheo-bronchoscopy, a swelling of the mucous lining of the right bronchus in which there was a mass of granulations. A fragment of these was removed for microscopical examination and found to consist of simple inflammatory tissue. Professor Hajek suspected that a foreign body

might be present. Later a rough calculus was coughed up, and subsequently several small calcareous particles were extracted from the right upper bronchus. JAMES DUNDAS-GRANT.

MISCELLANEOUS.

Report of three Head Cases in which the Symptoms referable to the Eye aided materially in arriving at the Diagnosis. GEORGE W. MACKENZIE, Philadelphia, Pa. (*Journal of Ophthalmology, Otology and Laryngology*, Vol. xxix., No. 2, February 1925.)

The first report refers to a tumour of the middle fossa causing rarefaction of the temporal bone and absorption of the posterior clinoid process; the second refers to an exostosis of the internal auditory meatus, and the third describes a fibrosarcoma of the temporo-maxillary region, which partially destroyed the greater wing of the sphenoid. The clinical notes are accompanied by four photographs and six radiograms. The second case is briefly as follows.

A Jewess, aged 17, four weeks after a cold in the head, which was followed by tinnitus in the left ear, developed a left sided facial paralysis. During the next three months the following train of symptoms ensued: (*a*) progressive deafness of the left ear becoming absolute; (*b*) myosis of the left eye from irritation of the third nerve; (*c*) homonymous diplopia, increasing on looking to the left, from paralysis of the sixth nerve; (*d*) clumsiness of the left hand in pianoforte exercises, from ataxy of the left arm and hand; (*e*) curving to the right on attempting to walk forward with closed eyes; (*f*) abolition of normal vestibular and auditory reflexes; (*g*) exaggeration of deep reflexes; no ankle clonus, no Babinski; (*h*) finally, onset of projectile vomiting. The fundi were normal. Radiographic report—"Mastoid area on left side shows atypical cells on left side, right auditory canal larger than left." Wassermann negative.

Suboccipital craniotomy revealed an osteoma of the left internal auditory meatus. This was not removed; it was considered that the decompressive effect of the operation would do good.

WM. OLIVER LODGE.

The Significance of Local Anæsthesia in Oto-Laryngology. N. R. BLEGVAD, Copenhagen. (*Acta Oto-Laryngologica*, Vol. vi., fasc. 3-4.)

Local anæsthesia is discussed under the headings of (1) surface anæsthesia, (2) infiltration anæsthesia, (3) conduction or regional anæsthesia. The latter is subdivided into peripheral and central.

Many workers took up local anæsthesia with great enthusiasm, but

more recently a reaction has set in in favour of conservatism, because of complications such as: (1) poisoning; (2) necrosis of the tissues; (3) infection; (4) after-pain and other bad effects.

The author proceeds to discuss in detail the uses and effects of cocain, alypin, and novocain-suprarenin, because these drugs are more widely used than the other numerous preparations brought out from time to time.

As regards (1) poisonous effects; cocain should not be used in concentrations of more than 10 per cent. for surface anæsthesia. The value of calcium chloride intravenously as an antidote is mentioned. Concerning alypin; this should not be used for injection, and as a surface anæsthetic has no advantage over cocain. Concerning novocain-suprarenin; he has actually found mentioned 26 cases of death, 11 in the special branch. He believes that both novocain and the suprarenin are poisonous substances and each may be responsible for these accidents. Warning is given of the use of soda in sterilised water, as this destroys suprarenin.

(2) Concerning necrosis: This is believed only to follow infection or suprarenin ischæmia.

(3) Infection: Cases of gas gangrene have occurred, and he urges the use of very carefully prepared physiological solutions. Technique is discussed and finally anæsthesia in all practical localities in ear, nose and throat work is described in detail.

An extensive bibliography is added, and the article, which is a lengthy one, makes valuable reading. H. V. FORSTER.

Tutocain in Rhinology. P. and E. WATSON-WILLIAMS. (*Lancet*, 1925, Vol. i., p. 915.)

The authors have used tutocain, a new synthetic local anæsthetic, on 200 occasions. They found it, in 5 per cent. (occasionally 10 per cent.) solutions, an efficient anæsthetic, but requiring longer time than cocain. It did not seem to compare favourably with cocain or adrenalin as an ischæmic or styptic. It was unirritating and showed no toxic effect in any case, even when cocain had done so.

MACLEOD YEARSLEY.

Tutocain—A New Surface and Injection Anæsthetic. CÆSAR HIRSCH, Stuttgart. (*Acta Oto-Laryngologica*, Vol. vii., fasc. 1.)

The writer is using for all operations in the specialty solutions not stronger than a 5 per cent. tutocain solution in 0.5 per cent. phenol with suprarenin. The addition of phenol increases the potency of the solution.

As an injection anæsthetic instead of novocain, he is using with entire satisfaction solutions of tutocain $\frac{1}{8}$ to $\frac{1}{4}$ per cent.

He summarises in favour of tutocain, stating that in practical use it is non-poisonous. It can be used both for surface and injection anæsthesia, is sterilisable by heat, and its anæsthetising value is higher than that of all the other local anæsthetics.

It is cheaper than its best rivals, both as a surface and injection anæsthetic. H. V. FORSTER.

Syphilis of the Premaxilla. Drs M. LANNOIS and R. GAILLARD, Lyons. (*Annales des Maladies de l'Oreille, du Larynx, du Nez et du Pharynx.* September 1924.)

This condition has been described before, mainly by syphilologists, but does not seem greatly to have attracted the attention of rhinologists.

A typical case is that of a man, 40 years old, who had syphilis when 22. For six months the left naris was obstructed and discharged foul pus. The upper lip swelled and the central and right lateral incisors were bathed in fetid discharge. Diagnosis of necrosis of the superior maxilla was made, and ten days later a sequestrum was separated out which extended from and included: (1) The superior maxilla between the canines and up to the anterior nasal spine; (2) About 2.5 centimetres of the corresponding part of the hard palate; (3) A part of the vomer and of the bony septum. Another type of case was seen in a woman with a history of syphilis. She complained of pain in the upper jaw, and had a commencing ulceration above the central incisors. The lesion was very tender, and the incisors were loose, and the hard palate behind the incisors was swollen and painful, while probing revealed a large sequestrum. Pain played a greater part in this history than in the previous one.

It might be thought that the exposed position of this lesion would tend to rapid recognition of its nature, but the authors think that other conditions in the same site may easily be mistaken for it. Cases are quoted from hospital records which have been treated as periodental cysts, whereas from the subsequent history they may well have been specific in origin.

The differential diagnosis is entered into between pyorrhœa, dental cyst, scurvy and subacute circumscribed osteitis or periostitis. The authors state that in the syphilitic lesion the teeth, though shaky, are always sound. Antispecific treatment is indicated.

GAVIN YOUNG.

The Technique of Radium Puncture. E. LÜSCHER, Bern. (*Zeitsch. für Hals-, Nasen-, und Ohrenheilk.*, Vol. ix., Part 4, p. 419.)

As regards the mode of use, the author recommends in general the insertion of a number of short needles along the margins of the growth

and one or more longer ones near the centre. The degree of filtration depends on the extent of the growth, inasmuch as for a small growth the intense and circumscribed action of the Beta rays is desirable and less filtration is required. On the other hand, the Gamma rays are appropriate in a more extensive growth and stronger filtration (to shut down the Beta rays) is required. An endeavour is made to break down the central part of a tumour with Beta rays and the margins with the Gamma rays. The noble metals, such as platinum, hold back the Beta rays. The dose for the larger tumours varies from 1500 to 4000 milligram-hours, for those of medium size 2000 to 3000. The needles are left in position for forty-eight hours.

The author lays down the fundamental rule that malignant growths which are operable should be treated by operation and not radiation.

Various needles are described, as also applicators for introducing them. JAMES DUNDAS-GRANT.

Trypaflavin in the Treatment of Post-operative Purulent Meningitis. Dr C. L. PAUL TRÜB. (*Archiv. für Ohren-, Nasen-, und Kehlkopfheilkunde*, 112 Band, 3/4 Heft, February 1925.)

In meningitis complicating operations on the frontal sinuses, etc., Trüb, by administering intravenously 20 cm. of a 2 per cent. trypaflavin solution, has effected a reduction in the intensity of the meningitic symptoms, fall of temperature, and general improvement in the condition of the patients, leading to recovery in three out of four cases described.

Experimentally it has been impossible to obtain a concentration in the cerebro-spinal fluid sufficient to kill micro-organisms *in vitro* without exceeding a safe intravenous dose, yet in these cases of purulent meningitis the cerebro-spinal fluid was stained yellow by the dyestuff after injections of 0.3 gm. Trypaflavin evidently passes through inflamed choroid plexuses to an extent varying with the severity of the infection, constitution of the patient, and individual function of the reticulo-endothelial cell apparatus; the dosage may be regulated to some extent by the lymphocyte count.

A bibliography is appended, containing eighteen references to the literature on the subject. WM. OLIVER LODGE.

Facts and Considerations in a Study of the Thyroglossal Tract. A. P. BERTWISTLE, Leeds. *With an Account of the Embryological Conditions.* J. E. FRAZER, London. (*Brit. Journ. Surgery*, 1925, Vol. xii., pp. 561-578.)

The first portion of this paper consists of five pages dealing with the growth and development of the thyroglossal tract, and is contributed by J. E. Frazer; the remainder by A. P. Bertwistle discusses

the clinical considerations, differential diagnosis, and operative results of thyroglossal cysts and fistulæ, based on the experience of 11 cases.

The main clinical or pathological conclusions arrived at are:—

(1) The thyroglossal remnants above the hyoid are few, and if present are usually either near the foramen or near the hyoid.

(2) Below the hyoid the tract is present completely in many cases, incompletely, *i.e.* potentially, in others.

(3) The complete infrahyoid tract extends from the hyoid, usually folded up behind it from below, to the thyroid gland, either centrally or on one side.

(4) The incomplete tract has *potentially* exactly the same line; it is the tract broken up, and its parts remain *in situ*.

(5) Any of these remnants may take on further development.

(6) Cysts situated below and behind the foramen cæcum may have a possible origin from between the two halves of the developing posterior portion of the tongue, and not be connected necessarily with the thyroglossal tract.

The differential diagnosis made from their position, and their movement on swallowing, is comparatively easy. They may be confused with suppurating or tuberculous suprahyoid lymph glands on the mylohyoid, or sequestration dermoids. The infrahyoid bursa is rarely the seat of pathological processes.

The authors suggest that thyroglossal fistulæ are in direct anatomical relationship with the thyroid gland, and that, as in the case of the salivary glands, their activity is increased during digestion.

Treatment.—Incomplete removal is the most common cause of operative failure, and a thorough knowledge of the thyroglossal tract and its relationship to the hyoid bone is necessary to ensure good results. Division of the hyoid bone is rarely necessary if the dissection is carried up well behind the bone. A horizontal incision should be made in a natural crease of the neck to avoid an unsightly scar.

This paper is well illustrated by sections through the embryo showing the development of the tract, also by a number of radiographs exhibiting the various situations of the cysts. IRWIN MOORE.

Thyroglossal Cysts and Fistulæ. HAMILTON BAILEY, London. (*Brit. Journ. Surgery*, March 1925, pp. 579-589.)

The author deals with the surgical aspect of 117 cases of thyroglossal cysts and fistulæ, of which 75 occurred in females. He refers to the incidence of thyroglossal cysts as being small, and quotes Sistrunk who found in the Mayo Clinic only 31 cases amongst 86,000 consecutive patients examined.

Amongst 92 cases the site was found to be at the base of the tongue—beneath the foramen cæcum in 3 cases; the floor of the mouth in 6 cases; suprahyoid 12 cases; subhyoid 37 cases; on the thyroid cartilage or membrane 23 cases; at level of the cricoid cartilage 7 cases; in the suprasternal notch 4 cases. It will thus be seen that the most frequent site is the sublingual region. The cyst may disappear behind the hyoid bone when the patient swallows.

Many lingual dermoids are squamous-lined thyroglossal cysts. Some so-called "ranulæ" are mucous varieties of thyroglossal cysts. There appears to be very little anatomical or pathological evidence of the existence of a subhyoid bursa.

Thyroglossal cysts occur most commonly in babies, while branchial cysts most frequently appear in early adult life.

Thyroglossal fistulæ are rarely if ever congenital, but result from rupture of a thyroglossal cyst, following suppuration in the cyst. Amongst 32 cases studied there were only two exceptions, and they were congenital. The fistula is often situated below the cricoid cartilage.

Treatment.—Unless complete removal of the cyst and tract is effected, there is apt to be recurrence. The difficult part of the operation is near the hyoid bone. The author quotes Sistrunk who advises complete removal of the tract by a transverse skin incision, removal of the central portion of the hyoid bone, followed by the "coring out" of the tissues round the tract up to the foramen cæcum of the tongue.

IRWIN MOORE.

The Sphincters of the Alimentary Canal and their Clinical Significance. ARTHUR F. HURST, M.A., M.D. Oxon, F.R.C.P. (*Brit. Med. Journ.*, 24th January 1925.)

The first part of this paper is of interest to œsophagoscopists, dealing as it does with the cardiac sphincter and achalasia, of which latter term the author appears to have been the originator. Although there is not much in the anatomical appearance of the short abdominal part of the œsophagus to justify its being called a sphincter, the radiological study of normal cases and of patients suffering from achalasia leads unquestionably to the conclusion that there is a sphincter-action. This part offers a definite resistance to the passage of food, whereas the rest of the œsophagus offers no resistance at all. The vagal and sympathetic nerve fibres which supply the œsophagus form a plexus consisting mainly of nodal tissue which reaches its greatest development in the part of the œsophagus immediately adjoining the stomach. The absence of the obvious thickening of the muscular coat seen round the other sphincters is said to be probably due to the fact that

the cardia is concerned, not in forcing food into the stomach but in merely preventing the regurgitation of food or gas from the latter.

Cardiospasm is not acceptable as an explanation of cases of distended and hypertrophied œsophagus, as the author has found that no hindrance is met with on passing a rubber tube filled with mercury, nor has any hypertrophy of the muscular walls of the cardia been found post-mortem. The condition is rather a failure in relaxation (achalasia) and is a degenerative nerve condition affecting the nodal tissue and due to a variety of causes—*e.g.* syphilis, diphtheria, or pressure by enlarged glands on the vagus and probably in many cases a reflex condition set up by gastric or other disorders.

The author advocates the use of a large mercury tube which the patient can generally learn to use on himself, keeping it in position for ten minutes before each meal at first and gradually using it less frequently.

Forcible dilatation by the hydrostatic apparatus is discountenanced, but in one case recourse was had to division of the muscular coat longitudinally after gastrostomy. T. RITCHIE RODGER.

REVIEWS OF BOOKS

Medical Education: A Comparative Study. By ABRAHAM FLEXNER. New York: The Macmillan Company. 1925.

In the present volume the author, after an interval of twelve years, re-surveys the international field of undergraduate medical education. He has endeavoured to show in what respects reforms have been achieved since he investigated the subject during the three years prior to the publication of his first book on the subject, and he draws attention to the further improvements that might still be effected.

It is impossible within the compass of a short review to do sufficient justice to such an important and widespread piece of analytical research, which embraces a comprehensive survey of the medical curriculum in the countries of Northern and Western Europe, and on the North American Continent. Although the author concentrates mainly upon internal medicine, when dealing with the clinical side of the curriculum, he points out that if a sound organisation can be perfected in that department, the requisite adjustments in other clinics would readily follow as a matter of course.

With the introduction into the medical curriculum of compulsory instruction in the special subjects, thus making the teachers of these