Abstracts

The patient was shown as representing:

1. An instance of suspected scarlet fever, complicated by a " mucosus " infection.
2. The sudden onset of meningitis.
3. The great diagnostic value of lumbar puncture.
4. The good result obtained by the " meningitis operation ", and injection of artificial cerebrospinal fluid.
5. The advanced age of the patient.

ABSTRACTS

EAR

" An analysis of the effects of repeated bodily rotation, with especial reference to the possible impairment of static equilibrium." O. H. MOWRER. (*Annals of O.R.L.*, 1934, xliii., 367.)

It has long been established that repeated bodily rotation (e.g. as among whirling dancers) will produce immunity to visual vertigo. The mechanism of this immunity is, however, in dispute. Certain persons, the subjects of repeated rotation experiments, have complained of more or less permanent impairment of static equilibrium, and it has been argued that this probably indicates damage to the peripheral organ. The experiments recorded here have been undertaken to elucidate this point.

Pigeons were used exclusively and their equilibratory ability gauged by means of a freely rotating perch, the movements of which could be recorded. It was found that repeated rotation periods over two weeks did not in the least affect the balancing ability of the experimented birds as against controls or against their own records prior to rotation, indeed if anything they had improved. Thus, concludes the author, it is proved that the mechanism of immunity is not due to damage to the peripheral organ.

E. J. GILROY GLASS.

Significant Anatomical Features of the Auditory Mechanism with special reference to the Late Fœtus. DOROTHY WOLFF. (*Annals of O.R.L.*, 1933, xlii., 1136-70, and 1934, xliii., 193-247.)

Early epochal investigations of the anatomy of the ear are reviewed. A routine method for procuring and preparing microscopic sections of the petrous portion of the human temporal bone is given. Detailed gross and microscopic observations of the auditory mechanism of a six months' premature fœtus of the American negro are made. A wax-plate model of the labyrinth

constructed from photographic negatives of serial sections of this specimen is described.

The study revealed that at this age the tympanum is placed inferiorly in relation to the *pars petrosa* ; that the facial nerve lies in an open groove, and that pigment has not yet developed in the inner ear, although it is present in granular form in the skin of the external auditory meatus. Certain anatomical variations are noted, such as an accessory crista in the posterior ampulla and irregularities in the contour of the superior and lateral bony semi-circular canals.

Comparative tables covering over forty cases and ranging from late embryo to adult are presented. Data are given confirming previous work and showing that : (1) post-natal apertures (so-called " dehiscences ") in the bony facial canal have a phylogenetic and ontogenetic explanation ; (2) embryonic mesenchyme is resorbed in the tympanum, normally, by the middle of the second year ; (3) the subarcuate fossa may penetrate to the antral cavity. A phylogenetic explanation of the endolymphatic valve is offered.

(This careful article is lucidly written and is illustrated by a series of excellent photographs and micro-photographs. There is also a long bibliography.)

[Author's summary.]

E. J. Gilroy Glass.

The Symptomatology of Experimental Brain Tumours. C. O. Nylén. (*Acta Oto-Laryngologica,* xx., fasc. 3-4.)

In the year 1931 the Author reported, as a Supplement to the *Acta,* observations which showed that postural nystagmus is a frequent symptom of brain tumour, and that both the different postural types and also the nature of the nystagmus itself may be of diagnostic importance in determining the situation of the growth.

In order to verify these results of clinical observation and to study the mechanism of vestibular eye movements, the Author introduced within the cranial cavities of a number of rabbits and rats, laminaria tents or a small amount of Jensen's sarcoma—the former to cause rapid, and the latter slow, increase of intracranial pressure.

By this means abnormal eye displacements, nystagmus and postural nystagmus were produced, which appeared whatever the localization of the " tumour " in the brain, but were most marked when it was close to or in contact with the vestibular centres or nerves.

Both ordinary vestibular nystagmus and postural nystagmus still occurred after destruction of the labyrinths, and might be horizontal, rotatory or vertical, whether the labyrinths were present or not. In the absence of the labyrinths, however, the eye

movements were slower and less regular and constant, and the influence of posture was less marked.

THOMAS GUTHRIE.

Two Interesting Autopsies of Intracranial Complications. K. NIHONSUGI. (*Oto-Rhino-Laryngologia*, vii., 10, 841.)

(1) A man, aged 33, had suffered for a month with left acute otitis media, and meningitic symptoms had suddenly come on. He died eleven days after the operation for left-sided temporo-sphenoidal abscess. On *post mortem* examination it was found that an abscess, the size of the tip of the thumb, in the temporo-sphenoidal lobe communicated through a fistula with the lateral ventricle of the same side. In this the enlarged choroid plexus occupied the whole of the space and formed adhesions with the ependyma so as to prevent the extension of the suppuration into the ventricle.

(2) A woman, aged 47, had suffered from acute inflammation of the left middle ear of four months' duration. In spite of three operations headache, vomiting and vertigo came on during the last month. Clinical examination indicated a left-sided labyrinthitis. Puncture of the cerebrum and cerebellum gave negative results. The patient died nine days after the last operation and on *post mortem* examination there was found a purulent thrombosis in the left transverse sinus which had extended to the pial veins of the convexity of the left hemisphere, where circumscribed purulent meningitis was found and the track of infection could be followed out.

JAMES DUNDAS-GRANT.

Cure in a case of Otogenic Meningitis. K. TANAKA. (*Oto-Rhino-Laryngologia*, vii., 11, 915.)

The patient, a man aged 21, six days after the mastoid operation for bilateral mastoiditis, developed high fever, headache, stiffness of the neck and Kernig's symptoms. The cerebrospinal fluid was under 300 mm. pressure and turbid. Nonne's and Pandy's tests were positive; streptococci were present. As purulent material was found in the left aditus, a radical mastoid operation was performed on the left side and after twenty-one lumbar punctures and medical treatment, recovery ensued.

JAMES DUNDAS-GRANT.

Burns of the Tympanic Membrane. N. KARASHIMA. (*Oto-Rhino-Laryngologia*, vii., 10, 848.)

A welder, aged 34, complained of pain in the left ear owing to the entrance of sparks during his ship-building work. On the flaccid portion of the left membrane there was a small rounded

perforation with a rough blackish margin, and dullness of hearing. The pain and the congestion of the membrane disappeared in three days, but the perforation and dullness of hearing remained unchanged.

JAMES DUNDAS-GRANT.

Ménière's Disease. WALTER E. DANDY. (*Archives of Oto-Laryngology*, xx., 1, July, 1934.)

Discussing the symptoms, findings, and treatment in forty-two cases the writer states that a permanent cure may be effected by section of the auditory nerve. He suggests that by dividing only the vestibular branch, while retaining the cochlear branch intact, it may be possible to cure the attacks of vertigo and at the same time preserve the hearing. This operation was performed in three cases of the present series. Until the pathology is more clearly understood we cannot tell whether a cure of attacks of giddiness will prevent the progressive loss of hearing which is the rule in untreated cases.

The basic syndrome of Ménière's disease consists in sudden attacks of severe vertigo, with nausea and vomiting, *plus* deafness and tinnitus in the affected ear. In two-thirds of the writer's cases the symptoms appeared in the fifth or sixth decade. Males were more frequently affected (68 per cent.), and in 70 per cent. of cases the side affected is the left. In most cases the attacks occur once or twice a week, and come on without warning and without apparent stimulus. The operative technique is described in detail and the paper is illustrated by four figures and seventeen audiograms.

DOUGLAS GUTHRIE.

A Case of Otogenous Meningitis with Vertical Nystagmus (including observations on Chronic Bone Disease in the Lateral Attic). E. GRABSCHEID. (*Acta Oto-Laryngologica*, xxi., fasc. 1.)

The case was one of bilateral suppurative otitis media, which succumbed to meningitis following an acute exacerbation of the cholesteatomatous disease in the right ear.

A complete microscopical examination of the brain and of both temporal bones disclosed a number of points of interest. The meningitis originated from multiple perforations of the right tegmen tympani, but both labyrinths showed an early otitis interna of meningeal origin with purulent invasion of the modiolus and of the vestibular turn of the cochlea through the aqueductus cochleæ.

The most striking symptoms of the meningitis were motor aphasia and vertical nystagmus. Of the latter the chief, if not the sole, cause appeared to have been a lipoid degeneration of the ganglion cells of Deiters' nucleus. THOMAS GUTHRIE.

Nose and Accessory Sinuses

NOSE AND ACCESSORY SINUSES

Melanosarcoma of the Nasal Septum with Bleeding Polypi of the lateral nasal wall. K. OTSUKA. (*Oto-Rhino-Laryngologia*, vii., 10, 851.)

A peasant woman, 42 years of age, complained of nasal obstruction and epistaxis on the left side. There was a dull red, smooth, soft mass of the size of a pea in the left inferior meatus and another darkish irregular mass with an ulcerated surface on the posterior and upper part of the septum, which bled readily. Opening of the antrum showed it to be free from growth. Both tumours were removed with the cold snare and forceps. Histologically the tumour on the septum was found to be melanosarcoma and the one in the inferior meatus a bleeding polypus. Death took place from recurrence three months later.

JAMES DUNDAS-GRANT.

Chronic Antrum Infection: Treatment by Intranasal Operation. H. M. GOODYEAR. (*Archives of Oto-Laryngology*, xx., 4, October, 1934.)

The writer believes that the results of intranasal operations are equal to or even superior to those obtained by the more radical approach through the canine fossa. He operates under local anæsthesia making a large opening which extends far posteriorly, leaving the lining mucosa undisturbed, after temporary elevation of the inferior turbinate and, finally he packs the cavity with iodoform gauze which is left undisturbed for a week.

The paper is illustrated by a series of radiograms.

DOUGLAS GUTHRIE.

The Sphenoid Sinus: Post Operative Observations following Operations on the Ethmo-sphenoid Sinuses. FREDERICK T. HILL. (*Archives of Oto-Laryngology*, xx., 3, September, 1934.)

Many surgeons still prefer to operate intranasally, although external operation is more satisfactory in dealing with the ethmoid cells. The advantage of external operation in approaching the sphenoid sinuses is not so widely admitted. There is, however, a growing opinion that the opening for sphenoidal drainage, when made by intranasal approach, tends to close in about 50 per cent. of cases. Post-operative constriction is more apt to occur in a small sinus. The re-formation of the anterior wall, an attempt by nature to replace original structures, may lead to recurrence of the suppuration. The complete operation, such as is possible with an external operation, would produce the satisfactory results such as are obtained from a radical operation on the antrum.

DOUGLAS GUTHRIE.

Abstracts

LARYNX AND TRACHEA

A Case of Myoblastomyoma of the Larynx. A. I. GESCHELIN. (*Acta Oto-Laryngologica*, xxi., fasc. 1.)

The myoblastomyomata (Rhabdomyomata) are among the rarest of laryngeal growths. Only three appear to have been recorded. These tumours are met with less rarely in other situations such as the tongue, œsophagus and mediastinal glands. Their histological features are very variable, and, while most grow slowly and are benign, some are malignant and are classed as myoblastosarcomata.

The author's patient was a woman, 40 years of age, who complained of hoarseness and discomfort in the throat. A reddish swelling the size of a pea was attached by a broad base to the margin and upper and lower surfaces of the posterior half of the left vocal cord, the movement of which was not impaired.

The growth was removed with the Krause snare, only a slight prominence remaining. The microscopical appearances were puzzling, and several distinguished pathologists who examined the specimen were unable to agree as to its nature, although most regarded it as probably malignant. Professor Petrow of Leningrad, however, described it as an immature rhabdomyoma, and a second operation was performed, consisting of laryngofissure, removal of the small remaining portion of the growth and the application of the diathermy cautery to its point of attachment. Examination of the specimen obtained on this occasion confirmed Professor Petrow's diagnosis. Recovery was uneventful and eighteen months later the larynx appeared normal.

Myoblastomyomata are probably congenital and due to developmental errors. They probably remain dormant for a long time until stimulated to active growth by some intercurrent malady such as, in the larynx, an acute catarrhal infection.

THOMAS GUTHRIE.

Supraglottic Tumours. FREDERICK A. FIGI. (*Archives of Oto-Laryngology*, xx., 3, September, 1934.)

Tumours in the supraglottic region of the larynx are rare, only twenty cases being found among the 539 cases of malignant disease of the larynx treated at the Mayo Clinic during the past decade. Apart from multiple papillomata and cysts of the epiglottis, all supraglottic laryngeal tumours are malignant. The site of origin is most frequently the epiglottis. As a rule the tumours are squamous-celled epitheliomas of low grade and they are slow to produce metastases, but owing to slightness of the early symptoms—

irritation or sensations of a foreign body in the throat or of fullness in the hypopharynx—they may not come under observation until far advanced. Diagnosis may be easy, but in all cases a radiogram of the chest, serological test for syphilis, and a biopsy of the growth should be made.

When the tumour is limited it may be successfully removed by diathermy after being exposed by laryngeal suspension with the Lynch apparatus; an expiration tube, close to the electrode, being used to carry away the escaping steam, so as to avoid scalding of the surrounding tissues. The slough separates in two or three weeks and the writer has seen no hæmorrhage or pulmonary complication. Preliminary tracheotomy is advisable. The method is reserved for limited lesions, as pharyngotomy remains the best means of treatment in the majority of malignant tumours in these situations. Radium and X-ray therapy are useful as supplementary measures but should not be used exclusively for the treatment of lesions which can be removed surgically.

Although good results appear to follow the implantation of radium after removal of a portion of the thyroid cartilage, the removal of these protective barriers appears to be an unwise procedure. When recurrence occurs after previous radium treatment, the malignancy appears to be increased. Six of the cases are reported in detail and the paper is illustrated by eight figures.

DOUGLAS GUTHRIE.

Associated Paralysis of Vocal Cord and Diaphragm. H. BURGER. (*Acta Oto-Laryngologica*, xxi., fasc. 1.)

Two cases are reported in which paralysis of the right side of the diaphragm was accompanied by paralysis, in one, of the right vocal cord, and in the other of the left vocal cord. Both showed, on X-ray examination, the characteristic appearances of paralysis of the diaphragm, together with a shadow in the upper part of the right mediastinum due, in the one case probably to a gumma, and in the other to a neoplasm. The paralysis in the second case of the *opposite* vocal cord was probably due to gland pressure.

The literature contains very few reports of associated lesions of the phrenic and the recurrent laryngeal nerves. Probably, however, such cases are in reality not very uncommon. Gaarde, indeed, mentions that hoarseness may be the only symptom of paralysis of the phrenic nerve, and no doubt the laryngeal condition is often overlooked.

Traumatic vocal cord paralysis following phrenic avulsion is probably always due to a vagus and not a recurrent laryngeal nerve lesion, the result either of injury to the nerve during the

operation or of pressure from blood extravasation or reactionary swelling.

THOMAS GUTHRIE.

The Respiratory Pressure Variations in the Trachea and their Influence on the Composition of the Alveolar Air. R. MOE. (*Acta Oto-Laryngologica*, xx., fasc. 3-4.)

The chief object of this enquiry was to test the suggestion of Mink that mouth-breathing is much more superficial than nasal respiration and that, in consequence, the mixing of the inspired with the alveolar air is less complete, less oxygen being taken up and less carbon dioxide given off, so that there is a constant oxygen deficiency.

It appeared unlikely that Mink's hypothesis would be correct, because Haldane has shown that it makes little difference to the oxygen content of the blood whether the alveolar air contains 14 or 16 per cent. of oxygen, so that within these limits there can be no serious oxygen deficiency.

It is, however, of interest that, while the composition of the alveolar air is fairly constant in any one person, between one person and another it shows rather large variations, for which it is difficult to account. As it is well known that the carbon dioxide content of the alveolar air rises in the presence of respiratory obstruction, it seemed likely that the normal variations might be connected with variations of the respiratory pressure, and that it might be possible to demonstrate these relations by measuring the intra-tracheal pressure.

Previous investigators of the pressure changes in the trachea had all employed for the purpose patients who had undergone tracheotomy. As few of these patients have a completely normal larynx, the author adopted a new method. This consisted in introducing, under cocaine and adrenalin anæsthesia, through the larynx into the trachea of a normal person, a thin-walled metal tube of 4 mm. diameter. The tube reduces the glottic space by about 9 per cent., but this reduction is fully compensated by the contraction of the mucous membrane caused by the anæsthetizing solution. The tube is attached to a water manometer and the pressure changes are recorded photographically. At the same time observations on the alveolar air were made by Haldane's method, in which the CO_2 content is determined and the oxygen pressure inferred from this.

It was found that the normal respiratory pressure variations in the trachea are relatively small. During unobstructed nasal respiration they amount on an average to $-7{\cdot}9$ mm. of water for inspiration and $+9{\cdot}5$ mm. for expiration, the range being thus $17{\cdot}4$ mm. The corresponding figures for unobstructed mouth

breathing are inspiration −6·0 mm., expiration + 6·9 mm., range 12·9 mm.

The average pressures in seven patients who complained of obstructed nasal respiration, and were wholly or mainly mouth-breathers, were inspiration −13·2 mm., expiration + 16·2 mm., range 29·4 mm.

No relationship could be detected between nasal or mouth-breathing and the CO_2 content of the alveolar air. This is not surprising in view of the high degree of respiratory obstruction necessary to produce an increase in the alveolar CO_2 content.

THOMAS GUTHRIE.

ŒSOPHAGUS AND ENDOSCOPY

Hæmorrhage due to Foreign Bodies in the Œsophagus. M. TER-OGANESJAN. (*Acta Oto-Laryngologica*, xxi., fasc. 1.)

The œsophagus is in close relationship with large blood vessels throughout its whole length. Schlemmer, in 1929, collected fifty records of hæmorrhage associated with foreign bodies.

The great vessels have thick elastic walls and are embedded in the loose connective tissue of the mediastinum; hence primary bleeding is very rare. Secondary bleeding results from the formation of an abscess in the tissue surrounding the œsophagus and the vessels, with subsequent erosion of the vessel wall. Erosion and ultimate rupture are hastened by contact of the pulsating vessel wall with a pointed foreign body, and also by swallowing, coughing, vomiting and, especially, by blind attempts to extract the foreign body or to push it downwards. Perforation of the aorta may also follow the constant pressure of a smooth rounded body like a coin, as in three cases recorded by Krause. Hæmorrhage occurs in from four days to several weeks after impaction of the foreign body.

The author gives details of five cases of secondary hæmorrhage from the great thoracic vessels due to foreign bodies in the œsophagus, observed during the last seven years. In two the bleeding came from the left subclavian artery, and in the other three from the aorta. In one case the nature of the foreign body was doubtful, while in four the history pointed to a fishbone; but in only one of these was the foreign body actually found. Bleeding occurred in one case on the seventh day, in one on the ninth, in two on the tenth and in one on the twelfth.

The patients all died; and the paper concludes with a consideration of how a fatal issue might be prevented in such cases by a sufficiently early opening and drainage of the infected mediastinum.

THOMAS GUTHRIE.

Abstracts

MISCELLANEOUS

A Clinical and Experimental Study of the Action of Saliva on Blood Coagulation and Wound Healing in Surgery of the Oral Cavity and Throat. MATTHEW S. ERSNER, DAVID MYERS and WILLIAM ERSNER. (*Annals of O.R.L.*, 1934, xliii., 114.)

Details of experiments to show the effect of saliva on wound healing and blood coagulation are given in detail. The results may be summarized as follows:

(i.) Saliva added to blood *in vitro* reduces the coagulation time from ten to fifteen minutes to two to three minutes.

(ii.) The effect is the same whether the saliva be autogenous, exogenous, mixed, or centrifuged, using sediment or supernatant fluid.

(iii.) Saliva kept on ice or at room temperature for from twenty-four to forty-eight hours does not lose its potency.

(iv.) The normal reaction of saliva is pH 6·8 to 6·6 and this is the optimum reaction at which it accelerates blood coagulation. Acidification below pH 4·8 inhibits this action.

(v.) Saliva produced by prolonged stimulation is less viscid but its pH and coagulating power does not vary.

(vi.) Filtered saliva possesses the same action as whole saliva.

(vii.) Solutions of the inorganic constituents in appropriate percentages have no coagulating action.

E. J. GILROY GLASS.

Post-Operative Cyst in the Cheek. H. TOKUNAGA. (*Oto-Rhino-Laryngologia*, vii., 10, 855.)

The patient was a man, 39 years of age, on whose right antrum a radical operation had been carried out nine years previously on account of empyema. Two years ago he began to suffer from pressure, pain in the right cheek, and hæmorrhage from the left naris; within the last month the swelling of the cheek became greater but the bleeding came to an end. On puncturing through the canine fossa there was obtained a darkish-green, transparent, tenacious fluid which was sterile and contained cholesterin plates and fatty bodies. By means of radical operation a communication with the antrum could be made out and the development of the cyst from the cicatricial tissue, as described by Kubo, could be verified.

JAMES DUNDAS-GRANT.

The Effect of Certain Drugs on Ciliated Epithelium. K. VIKTOROW. (*Acta Oto-Laryngologica*, xxi., fasc. 1.)

The author is engaged on an investigation of the effect produced by many of the commonly used drugs on the activity of ciliated

epithelium in both cold and warm blooded animals. The present paper is preliminary, and contains the results of experiments only on the ciliated epithelium of the œsophagus of the frog. This was removed from the body, split longitudinally, fixed to a cork plate and placed in a moist chamber, through the glass roof of which it was easy to observe the movement along the specimen of small particles of wood charcoal. The time taken by a particle in travelling, as a result of ciliary action, from one point to another 1·5 cm. distant was noted both before and after the application of various drugs by means of a soft brush; and thus it was possible to estimate their relative power of stimulating or inhibiting ciliary movement.

It was shown (1) that the activity of the cilia of the frog's œsophagus was much diminished or arrested by alkaline salts, such as sodium bicarbonate and sodium biborate, and also by both menthol and glycerine. (2) The effect of cocaine was remarkable in that a relatively high concentration (2-3 per cent.) caused increased activity at first, followed later by arrest; while a more dilute solution (1 per cent.) produced inhibition only, not preceded by stimulation. The action of adrenalin was uncertain and might be either excitation or inhibition. (3) A 0·2 per cent. solution of carbolic acid caused, like the stronger solution of cocaine, an initial increased activity followed by arrest.

THOMAS GUTHRIE.

Bacteræmia and Acute Infections of the Upper Respiratory Tract. H. C. BALLENGER. (*Archives of Oto-Laryngology*, XX., 4, October, 1934.)

The common cold, which leads to so many varieties of infection of the upper respiratory tract is said to be caused by a filtrable virus which activates the pathogenic bacteria already present. The writer believes that a transitory type of bacteræmia is a common complication of such respiratory infections, especially when due to the hæmolytic streptococcus.

The frequency of bacteræmia is not yet recognized, as it is difficult to demonstrate by blood culture. Following injection of bacteria into the blood streams of animals practically all bacteria, regardless of virulence, disappear from the blood stream within a few hours.

Yet Reith and Squier were able to obtain positive blood cultures from 12 per cent. of apparently healthy persons without a demonstrable focus of infection and to show that the percentage of positive results was greater in winter than in summer. The existence of bacteræmia during the course of so many acute infections forms an argument against operative interference in the acute stage. Most laryngologists agree that it is unwise to perform

tonsillectomy during an attack of tonsillitis. As regards otitis the sudden increase of temperature which so often follows early incision of the tympanic membrane is caused by streptococcal bacteræmia, which is fortunately temporary in the majority of cases. If mastoiditis has developed, when is the best time to operate? The author is of opinion that if one can wait three weeks from the onset of the discharge with reasonable safety, it is desirable to do so. Nature has had a chance to throw up her protective barriers and, if reasonable delay is possible, it should be exercised.

DOUGLAS GUTHRIE.

Lung Abscess with Special Reference to Cause and Treatment. JAMES MAXWELL. (*Quarterly Journal of Medicine*, 1934, xxvii., 467-522.)

This valuable and comprehensive paper is not only an up-to-date summary of the work done on the subject, but is also an important original research.

Maxwell's own work is based on the findings in 315 cases discovered in two consecutive series, in all 11,006, of *post mortem* examinations in the records of St. Bartholomew's Hospital (1907-31) and of the Royal Chest Hospital (1922-31). Every case in which suppuration was present in the lung tissue has been included, with the exception only of those cases in which tuberculosis appeared to be the sole cause. This ensures us against any "selection" of cases.

In a brief historical summary we are reminded that our methods of treatment are older than we realize. Hippocrates, who upheld the "aspiratory" origin of lung abscess, advised thoracotomy when the abscess burst into the pleura, and Green in 1860 practised intra-bronchial intubation.

In his definition Maxwell points out the confusion arising from the use of the term "gangrene" and includes as "lung abscess" "all cases of non-tuberculous cavitation with suppuration".

His classification is anatomical, thus:

I. SINGLE.

Unilocular	Hilar / Central	(*a*) open to closed	Bronchus / Pleura.
Multilocular	Peripheral / Lobar	(*b*)		

II. MULTIPLE.

The writer comments on the statement that lung abscess is becoming more frequent, but concludes that it is not possible to

decide whether there has been a real increase or whether greater accuracy in diagnosis has led to more general detection of the condition.

In the single abscess group there were 199 cases; in 149 (nearly three-quarters) the abscess was unilocular.

The sex distribution in this series agreed with the accepted ratio, three males to one female.

The age-incidence also agreed with other published records; 113 cases were patients between forty and seventy years of age. This may be associated with the carcinoma age incidence.

The greatest difference from the usual records, especially from the United States figures, is in the causative conditions. In the whole group only two cases followed tonsillectomy, and three tracheotomy; seven cases followed otitis media, with lateral sinus thrombosis in three; thirty-eight cases followed abdominal operations; carcinoma of the bronchus or œsophagus was responsible for forty-eight cases, and pneumonia for forty-three. It is noticeable that no case in this group was attributed to nasal accessory sinusitis.

The right lung was attacked more frequently than the left and in each lung the lower lobe was affected more than twice as often as the upper.

It will be seen from this that the figures give us little help in deciding whether aspiration or embolism is the usual cause of lung abscess. It is generally agreed that embolism would be more likely to affect the right lower lobe than any other part of the lung; unfortunately so would aspiration, and the high incidence of infection at this site can be explained equally well by either view. It is probable that the nearer the abscess is to the hilum the more likely it is to have been caused by aspiration; the figures show, on the whole, a greater predilection for the periphery, which suggests embolism as the commoner cause. In the thirty-eight cases in which an abdominal operation had been performed there was pre-operative sepsis of the site in twenty-nine; sepsis elsewhere in another three, and broncho-pneumonia in the remaining six. Therefore, in thirty-two, embolism was the probable cause. Cerebral abscess was found only in four cases, and in three an empyema was present as well. This low incidence is remarkable; Tuffier placed it at 13 per cent. in his series.

The 116 cases of multiple abscess show a slightly lower male incidence (eighty-two males and thirty-four females), and a much more generalized age incidence (seventy-two cases in the first four decades). Carcinoma of the lung and œsophagus was responsible for nine cases, abdominal operations for another nine, and acute pulmonary conditions for six. There were no cases following tonsillectomy. The largest "causative group" was "septic conditions elsewhere" with sixty-two cases. In this group there were two

cases of nasal sinusitis and eleven of middle-ear disease. It is, of course, possible that nasal sinusitis may have had a share in the bronchiectatic group (ten cases), but there is no evidence of this.

On the bacteriological side, it seems clear that a variety of infective organisms can cause lung abscess; spirochætes and other anærobes are often present, but their specific activity is not proven.

In his discussion on the cause of lung abscess Maxwell remarks on the rarity of tonsillectomy as the causative factor in his series. Only two such cases were found, and in both there was septic clot in the jugular vein; both cases were certainly embolic. Recent American figures (Flick, Clerf, Funk and Farrell, 1929) show ninety-seven cases following tonsillectomy in a series of 167 cases, and this discrepancy between American and European statistics has frequently been noticed. It cannot be due to the use of general anæsthesia, as the great majority of tonsil operations in this country are done under general anæsthesia. It has been suggested that in these cases the route of infection is by the lymphatics rather than by aspiration or by the blood-stream.

The question whether aspiration or embolism is the more common cause is still undecided. Experimental work shows that abscess can be produced by either method in many animals. In man it has been shown by bronchoscopic examination that blood can be found in the bronchial tree in nearly 40 per cent. of cases after tonsillectomy, whether the operation has been performed under local or general anæsthesia.

On the whole it seems impossible to decide which is the more common route. Maxwell inclines to the view that post-tonsillectomy abscess is more likely to be aspiratory, and that abscess after abdominal operation is usually embolic; he does not mention Benjamin's work, in which it was suggested that the high incidence of post-tonsillectomy abscess in America was due to the practice of removing tonsils in the more acute stage of inflammation.

There is a very clear summary of methods of treatment. Maxwell believes that unless the patient is losing ground acute cases are best dealt with by non-operative measures, such as postural treatment. If, after two months' treatment, the condition is stationary, further measures are necessary. Bronchoscopic treatment is useful for hilar and central lesions, but where the abscess is draining freely into a bronchus postural treatment will probably give as good results.

Artificial pneumothorax should only be used with a central or hilar abscess draining into a bronchus. It should never be used when the abscess is near the pleura. As healing is by apposition of the walls and obliteration of the cavity, it is not likely to succeed in chronic cases in which the granulation tissue has been replaced by epithelium.

Review of Book

Maxwell advises surgical treatment for peripheral abscesses, especially when they are multilocular. He believes that a two-stage drainage operation is the simplest, and the best for routine use. Excision of the lung and lobectomy are severe and rarely needed. Thoracoplasty relieves a small number of chronic cases, but it " has resulted in many disasters—and has all the disadvantages of the artificial pneumothorax in addition to the mutilation attendant upon it, as well as the finality of the procedure ".

The paper has an admirable bibliography of 380 references.

F. W. WATKYN-THOMAS.

REVIEW OF BOOK

Illustrations of Regional Anatomy. By E. B. JAMIESON. Published by E. & S. Livingstone, Edinburgh. Price 30s.

These illustrations form a most useful method of presenting the main facts of the anatomy of the various regions in a form which is easy for reference. They are " paraphrases " of the blackboard diagrams which have illustrated the author's lectures on regional anatomy in the University of Edinburgh.

A great number of the drawings are made from specimens and dissections which have been specially prepared, and some of the drawings are composite ones and have been built up from several specimens of the same type. This makes them particularly valuable.

Unfortunately, there are not a great variety of drawings connected with our speciality, but it will be found that the dissections relating to the middle ear are particularly clear and useful. The musculature of the pharynx is also well presented from a slightly unusual angle and the coronal section through the orbit, nose and mouth enables one to appreciate the intimate relations of many important structures.

The value of the illustrations is increased by the fact that they are loose leaves, clipped together in book form and these can be taken out when required for reference or for demonstration purposes. We think they will be most valuable for the instruction of post-graduate students and for refreshing the anatomical memory of the surgeon.

WALTER HOWARTH.