# ABSTRACTS

## EAR

*Neoplasms involving the Middle Ear.* L. A. SCHALL. (*Archives of Oto-laryngology*, xxii., 5, November, 1935.)

Malignant growths of the middle ear are not medical curiosities. Keeler, in 1922, collected reports of sixty cases. At Massachusetts Eye and Ear Infirmary fifteen cases were seen in the past twelve years, an incidence of one in 6,000 cases of disease of the ear. The present writer records six cases personally observed. All patients were over 45 years of age and the sexes were equally divided.

The most constant finding is chronic otorrhœa and the most suggestive symptom is hæmorrhage, which may be severe or only slight, after removal of an aural polypus. The polypus may be the only evidence of neoplasm. Every bleeding aural growth should be examined microscopically. Pain may occur early, but is more often a late symptom. Facial paralysis appeared in two of the writer's cases. As regards treatment, surgery alone and radiation alone have proved disappointing. Radical mastoidectomy with removal of the entire cutaneous canal is indicated in every case and this should be followed by irradiation. Radiation must be applied at the site of the lesion, and this can be exposed only by radical operation. A total dosage of 600 to 1,000 milligram hours is employed. Five of the patients have had no recurrence for two to four years and this shows that the prognosis is no longer hopeless.

DOUGLAS GUTHRIE.

*Puncture of the Internal Jugular Vein in cases of Mastoiditis.* L. M. FREEDMAN. (*Archives of Oto-laryngology*, xxiii., 1, January, 1936.)

The writer employs puncture of the internal jugular vein in preference to lumbar puncture (Queckenstedt or Tobey-Ayer test) as a means of determining the degree of obliteration of the lateral sinus by thrombosis in cases of mastoiditis. He has used the method in twenty-five cases, under local anæsthesia. A needle of 18 gauge and 40 mm. long is thrust to its full extent into the tissues of the neck just in front of the mastoid tip, and gradually withdrawn until venous blood is drawn into the syringe. The syringe is then replaced by an Ayer manometer and pressure readings

are taken before and after compression of the vein at a lower level in the neck. Normally there is a sharp rise in the pressure on compression and a rapid fall when this is relaxed. In cases of thrombosis this rise and fall is slight or absent. By the use of this method each lateral sinus may be tested separately, and the error introduced by anatomic differences on the two sides does not arise as it does when lumbar puncture is used. The puncture is nearer the source of obstruction and is therefore more accurate than the lumbar puncture method. Finally, a sample of blood close to the infected area may be withdrawn for examination.

DOUGLAS GUTHRIE.

*The Test of Queckenstedt-Stookey in Otology.* M. AUBRY and J. SIGNALD. (*Les Annales d'Oto-Laryngologie*, August, 1935.)

Stookey's modifications of Queckenstedt's Test consist chiefly in taking manometric observations of the pressure of the cerebro-spinal fluid with the patient lying down, using a manometer of the Strauss pattern (its value depends upon its important resistance to inertia), and of making four tests, viz. (1) a brief pressure on each jugular vein in turn, (2) compression of each jugular in turn, (3) abdominal compression and (4) the index of pressure (this consists in the withdrawal of 7 c.cm. of cerebro-spinal fluid and noting the reduction in level produced in the manometer).

In the opinion of the writers such a precise technique is not only indispensable for the diagnosis of sinus thrombosis but also no less for that of a partial or complete blockage of the cerebro-spinal fluid system.

The usefulness of tracing a curve of pressure is also well demonstrated, the line of descent being often more useful to consider than the line of ascent.

L. GRAHAM BROWN.

*A Concentrated Solution for Anæsthesia of the Tympanic Membrane.* P. MANGABEIRA-ALBERNAY. (*Les Annales d'Oto-Laryngologie*, October, 1935.)

The formula of the solution consists of 2 c.cm. of neutral glycerine and 1 gram each of pantocaine, dry crystallized carbolic acid and menthol.

The writer claims that this mixture is much less toxic than that of Bonain, has an equal anæsthetic value, and is less costly. Its principal advantage, however, is that it eliminates the use of cocaine.

L. GRAHAM BROWN.

# Ear

*The Results of Otological Researches among* 1,366 *pupils of Schools at Tartu.* E. SARRESTE (Tartu). (*Acta Oto-Laryngologica*, xxii., 4.)

The ears of 1,366 pupils of Tartu, aged 7-20 years, were examined with the thoroughness of a specialist and the author's conclusions are finally set forth in a résumé.

Defective hearing was found in 151 children (11·0%), ninety-six of them hearing badly with one ear and fifty-five with both ears. The percentage of such cases was twice as great in the free primary as in the private schools and greater in the town than in the country children. Younger children (7-13 years) provided more cases than the older group (13-20 years), 9·7% in the former, 5·4% in the latter. The parents of fifty-seven afflicted children (37·7%) out of 151 admitted deafness.

The deaf children made slower progress in school work, and in those suffering from adenoids the deaf were found more often, as the adenoidism was more marked and mouth breathers provided a greater number of the deaf.

With regard to middle-ear suppuration, this was found more often in the free primary than in the private schools, and a considerable number of the deaf cases gave a history of ear discharge. In the whole series the cause of deafness would be distributed as follows :

| | |
|---|---|
| Middle-ear and Eustachian catarrh .. .. | 32·4% |
| Chronic middle-ear suppuration .. .. | 7·7% |
| Remains of middle-ear suppuration .. .. | 19·8% |
| Tympanic sclerosis .. .. .. .. | 14·5% |
| Plugs of cerumen and epithelial débris .. .. | 6·8% |
| Lesions of the perceptive apparatus .. .. | 4·8% |

The incidence of catarrhal otitis media diminishes with the age of the pupils. In the majority of children over 13 years of age there is less and less hope of improving bad hearing, whereas below 13 years the great number get well, either spontaneously or as the result of rational treatment.

H. V. FORSTER.

*Towards a Method for Quantitative Measurement of the Functional Capacity of the Vestibular Apparatus.* G. DOHLMAN (Lund.). (*Acta Oto-Laryngologica*, xxiii., 1.)

Of the tests we have at our disposal for the clinical estimation of the functions of the vestibular apparatus, the caloric has proved by far the most important. By its means it is possible to test each labyrinth separately and to differentiate between the function of the semi-circular canals separately. Most important of all, we may determine if a labyrinth is dead.

# Abstracts

Much was hoped of this test in neurological diagnosis and various workers have attempted to give us a quantitative method for determining the degree of function of the labyrinth or to find its threshold of stimulus, but we have to conclude that the caloric reaction cannot be expected to give us any precise quantitative answer regarding the excitability of the labyrinth.

Of other methods of examining the vestibular apparatus the galvanic reaction, though not needing the presence of an intact end organ is not very helpful, because the distribution of the current is effected by the varying distribution of bone and soft tissue.

Finally the rotation test for measuring the difference of the labyrinthine functions of either side by means of the length of the post-rotational nystagmus loses value because compensation gradually supervenes to diminish the difference in reaction when one labyrinth is diseased.

Later observers have regarded the rotation test as quite worthless as a clinical method and, until the researches of Steinhausen on the function of the cupula, it was not possible to explain the absence of post-rotational nystagmus after the normal short movements of the head, even though the acceleration and retardation are as great as in the ordinary rotation tests. The cupula has been found to fill the interval in the ampulla between the crista and the opposite wall.

When the head is moved in a certain direction a bending of the cupula takes place and there is a deviation of the eyes in the direction of the slow phase, or a few short nystagmus beats, and when the head movement ceases there is an endolymphatic dislocation of the cupula now in the opposite direction by which the cupula and, as a consequence, the eyes return to the normal position.

Now in the ordinary rotation test the endolymph can be accelerated only during the first or second turn and yet the nystagmus during rotation continues for twenty seconds after the beginning of rotation. This is due to the movement of the cupula which, by its elasticity, tends to return to its normal position. At the end of rotation the opposite effect occurs and the post-rotational nystagmus also occupies about twenty seconds.

Buys had already laid down that the nystagmus during rotation and the post-rotational nystagmus have the same duration. Such a test as the rotation test cannot give us an adequate indication of the normal excitability of the vestibular apparatus as it is an unphysiological stimulus and often accompanied by subjective discomfort and giddiness.

Grahe has suggested an examination of the nystagmus under conditions of short turns, $\frac{1}{4}$ to $\frac{1}{2}$ turns, and counts the nystagmus beat with the finger placed over the closed eyelids of the patient. One can then get a rough idea of the functional capacity of the labyrinth.

Dohlman believes that in order to get a more exact quantitative measure of the functional capacity of the vestibular apparatus, one should try to determine its threshold value of excitability. By measuring the threshold value we must expect to get a measure of the excitability of the vestibular apparatus *in toto*, i.e. the normal or altered condition of function of the semi-circular canals, the neuro-epithelium, vestibular nerve, and the central connections with the nuclei of the eye muscles.

An attempt has been made to obtain the threshold value by recording the strength required to produce an irritative effect and also to record the effect, but in order to exclude as far as possible undue influences on the part of the patient these stimuli are applied in a manner which is as imperceptible as possible to him. In order to do this he is put into an electrically driven rotation chair, to which are given small alterations of speed, i.e. acceleration and retardation during an otherwise constant speed. The eye movements are recorded in the form of a curve. A rubber cap is attached by suction to the cocainized cornea and the movements of the eye are transmitted by an arm attached to the cup which moves an aluminium screen over a sheaf of light. This illuminates a photo-electric cell, the current from which is amplified and measured by an oscillograph. The oscillograph operates a mirror and reflected light is directed on to sensitized paper, so that the current fluctuations are received in the shape of a curve.

In order, at the same time, to get a record of the speed at which the patient is being rotated, the electrically rotating chair drives a small dynamo and so a current is obtained which can be measured direct through another oscillograph which supplies a curve whose position on the paper gives directly the rotational speed.

H. V. FORSTER.

*Contributions to the Pathological Anatomy of the Ear.* H. RICHTER. (*Arch. Ohr-, u.s.w., Heilk.*, 1936, cxl., 360-86.)

An interesting series of studies of pathological conditions of the ear have appeared in successive numbers of the *Archives*. The present article describes the pathology of empyema of the petrous tip, based on a series of fourteen cases treated at the Erlangen Clinic during the years 1925-35. Of these fourteen patients, six were cured and eight died from suppurative meningitis. With one exception, the temporal bones of all the fatal cases were obtained and subsequently examined in serial sections. As regards symptomatology the main points emphasized by the author were the following: Every patient suffered from a persistent headache on one side of the head and complained of a special knocking type of tinnitus " Klopfgeräusch ". In all the cases there was a persistent discharge of pus from the tympanic cavity, while the retro-auricular

wound became dry. Abducens paresis and trigeminal pains are found in only about half the cases.

An extensive pneumatization of the mastoid and petrous bones is characteristic in these cases, and without such an anatomical predisposition the complication would probably not occur. The histological examination of the petrous bones showed that there were four different tracts of pneumatic cells in relation to the labyrinth, along which the infection could penetrate towards the tip of the petrous bone. The posterior tract is most frequently affected, the upper and lower tracts next in frequency, and the anterior more seldom. The complications of empyema of the petrous tip are extradural abscess and, more rarely, suppurative labyrinthitis, both leading to meningitis. The abscess may also spread in the direction of the carotid canal, jugular bulb, or towards the pharynx and neck. When the pus breaks through into the upper pharynx or into the muscles at the back of the neck, the patients usually recover, as shown by two instances in this series.

There are thirteen illustrations of microscopic sections in the text, showing the relations of the various types of petrous-empyema to the labyrinth, jugular bulb, carotid canal and posterior fossa of the skull.

J. A. KEEN.

## NOSE AND ACCESSORY SINUSES

*The Radiological Investigation of the Superior Maxillary Antrum.* E. H. SHANNON (Toronto, Ont.). (*Jour. A.M.A.*, February 22nd, 1936, cvi., 8.)

The writer, a radiologist, believes the time is opportune for a survey of the major diagnostic criteria afforded by plain X-ray films. The use of iodized oils is rarely necessary and may completely obscure the condensing osteitis seen in sinus suppuration and the rarefied type commonly associated with polypoid degeneration of the mucous membrane. Normal mucous membrane is not demonstrable in a Roentgenogram and radiological examination of the antrum is seldom necessary in the acute stage. The antrum may appear hazy when taken in the prone position but if re-taken in the erect position often shows a fluid surface, usually concave superiorly, and with air above.

In chronic suppuration a marked degree of condensing osteitis is typical of the condition. The walls of the antrum are thickened by new bone formation which often spreads to the malar bone and into the orbit.

Even slight thickening of the mucous membrane over all, or part of the antrum, is important in the search for focal infection when the antrum is seen in the quiescent period between attacks.

Localized thickening of the mucous membrane over the floor, or more widespread changes, are sometimes seen in infections of the molar teeth.

Polypoid or cystic change results in mottled or homogenous decrease in brilliancy, producing a dull slate-like image of the diseased area but with normal bone detail elsewhere. These conditions are differentiated from suppurative processes by lack of productive reaction in bone.

Malignancy is difficult to diagnose early on account of the suppurative process which is almost always present in this disease, although infero-superior or supero-inferior projections have been definitely helpful. Benign growths of an osteomatous character are occasionally encountered and easily recognized.

The intense reaction set up by radical operative procedures entirely masks the antrum cavity and contents. It closely resembles the condensing osteitis seen in chronic suppuration.

A survey of the tabulated results in 296 patients on whom the radical operation has been performed recently indicates that the radiological diagnosis made on plain films was essentially correct in almost every case.

ANGUS A. CAMPBELL.

*On the question of the Pathways of Infection in Meningitis of Nasal Origin.* J. JACOBSGAARD. (*Z. Laryng.*, 1936, xxvi., 387-426.)

Already thirty years ago Hajek made the statement that histological examination was the only way of deciding by which route a nasal infection had reached the meninges. The more important pathways which have become recognized are the following: the lymphatic channels around the fibres of the olfactory nerves; certain veins in the region of the ethmoidal cells and of the cavernous sinuses; a perforating osteomyelitis in the roof of the sphenoidal sinus—the one pathway which can be recognized macroscopically and which has therefore been described fairly frequently. Perforating osteomyelitis has also been found in connection with the frontal sinuses.

Many unreliable observations are due to the description of the *post mortem* findings in cases in which extensive operations on the sinuses and their surroundings had been performed shortly before death. Only cases in which no operations have been done should be used for such a study; the upper air passages should be sectioned and examined histologically by the technique described by von Gräff.

The author was able to collect six such cases over a period of years. The clinical histories, *post mortem* findings and the results of the histological examinations are given very fully, many illustrations of typical sections appearing in the text. In all the six

patients the meningitis had developed rapidly and without localizing symptoms, so that no operations had been performed.

Cases I and II were specially acute. After an indefinite illness of some two weeks' duration with symptoms of rhinitis, meningitis set in suddenly and caused death after one and a half and two days respectively. The histological examination gave a clear explanation. A suppurative rhinitis in the upper part of the nasal cavity had caused meningitis by spreading along the lymphatics of the olfactory nerve fibrils. Cases III and IV belonged clinically to the group of epidemic cerebrospinal meningitis. Here again the pathway was found to be the lymphatic one along the olfactory nerves, and no changes were found in the sinuses. In Case V the author found an empyema of an upper ethmoidal cell with a focus of osteomyelitis which had caused a perforation in its roof. Case VI was indefinite as nothing pathological was found in the region of cribriform plate, ethmoidal or sphenoidal cells. The meninges were adherent over a frontal lobe abscess and it was assumed that an osteomyelitis following frontal sinus suppuration was responsible for the meningitis; this region was not included in the block made for section.

In the last two cases the lymphatic route was excluded by a careful examination of the olfactory nerve region. It is quite easy to distinguish between an accumulation of leucocytes in the subdural space due to the meningitis with the fibrils below the cribriform plate intact, on the one hand, and an ascending infection from the nose, on the other hand, when the leucocytes form a continuous layer along the nerve fibrils, from the nasal mucosa to the meninges. The article is a lengthy one with two pages of references.

J. A. KEEN.

## BRAIN

*Contribution to the Study of Artificial Tumours of the Brain in Animals.* C. O. NYLÉN (Stockholm). (*Acta Oto-Laryngologica* xxiii., 1, 1936.)

For a number of years the author has been interested in the study of certain neurological symptoms and, among these, the mechanism of the production of ocular movements of vestibular origin in animals after the introduction of foreign bodies within the brain.

The present work is concerned with rather similar experiments, in which the object was to bring about diminution of the capacity of the cerebral cavities, as would happen in cases of cerebral tumour. The object was achieved principally by implanting small pieces of laminaria within the brain.

# Brain

The author's experiences with the implantation of the Jensen Sarcoma into the brain of rats were carried out in collaboration with M. B. Fromm and are published elsewhere in this journal (*Acta Oto-Laryngologica*, 1934 and 1935). It was found that artificial tumours, laminaria, lead, or muscular tissue could, in the rabbit and the rat, give rise to pathological neurological phenomena such as abnormal ocular movements, deviations and nystagmus, rolling of the body to the side, a tendency to forced movements, disturbed gait, abnormal attitude of the head and the body.

After section of the auditory nerves or after bilateral labyrinthectomy, these phenomena could equally appear following the introduction of the above mentioned foreign bodies into the brain.

The symptoms followed, no matter which position the tumour occupied in the cranial cavity, but were of greater frequency and intensity when the tumour occupied the posterior fossa.

H. V. Forster.

*Contribution to the Symptomatology of Transplanted Brain Tumours in Rats with and without Labyrinths.* B. Fromm and C. O. Nylén (Stockholm). (*Acta Oto-Laryngologica*, xxiii., 1, 1936.)

The authors have been especially interested in the vestibular symptoms associated with processes diminishing the volume of the cranial cavities, because symptoms of this kind, especially positional nystagmus, have been observed in clinical cases.

The subject was first approached experimentally by introducing pieces of laminaria into the cranial cavities of rabbits and rats. The rapid swelling of these "laminaria tumours" produced relatively violent trauma and the rapid onset of symptoms and so, in order to obtain a slower development of symptoms, it was decided to use implants of the Jensen sarcoma to serve as brain tumours.

The problem to be solved included such questions as :

1. Can nystagmus of a vestibular type be produced by implantation of a tumour in the brain of a rat ?

2. Has the position of the head in such a case any significance in the development and appearance of the nystagmus ?

3. Does nystagmus of a vestibular type occur in labyrinthless animals with brain tumours ?

There is also the question of the significance of the situation of the tumour on the origin of vestibular symptoms.

As a result of these experiments it was found that, after the tumour cells have been implanted in the brains of rats, a destructive and widely growing tumour develops which produces a series of symptoms of which those of vestibular and cerebellar type are prominent. These symptoms have occurred in animals with intact

labyrinths as well as in those after unilateral and bilateral labyrinthectomy. They occur with tumours of varying size and in different situations, but most frequently with tumours in the posterior cranial fossa.

These different symptoms were observed in connection with an extensive tumour in the area of the vestibular nuclei, but they were also noticed when a tumour had not directly affected the vestibular centres in the floor of the fourth ventricle. H. V. FORSTER.

*Some Personal Observations on Brain Abscess.* P. CALICETI. (*L'Oto-rino-laryngologia Italiana*, January, 1936.)

Professor Caliceti remarks on the lack of symptoms or the difficulty of their interpretation in many cases of brain abscess. He relates three cases which illustrate these points.

The first patient had had a cortical mastoid operation for an acute infection. Thirty days later, when almost healed, an estimation of the cronaxie of the vestibular nerves was made. That on the operated side was found to be ninety microseconds, whilst on the healthy side it was only seven microseconds. The patient appeared to be quite well but three weeks later developed vertigo and headache and, in spite of a further operation, died from a cerebellar abscess.

The second had had a radical mastoid operation for chronic disease. Some days later there was a transitory labyrinthine disturbance, headache, and a facial palsy. In three weeks the vertigo and the palsy had disappeared, but the headache remained. He improved so much that he was discharged. He was admitted again in a state of coma and died, a large abscess being found in the corresponding half of the cerebellum. Citelli has drawn attention to the transitory palsy of the VIIth nerve occurring in cases of cerebellar abscess.

The third case had had a bilateral cortical mastoid operation for acute mastoiditis. One side healed well, the other continued to discharge freely. A rise in temperature led to a further operation on this side and a thrombosed lateral sinus was found. Septicæmia followed and at autopsy numerous pyæmic abscesses, including a large one in the optic thalamus, were found. The patient had complained of severe pain in the chest and in the limbs on movement and it is possible that this is a symptom of lesions of the optic thalamus. F. C. ORMEROD.

*Brain Abscess.* Professor RAOUL DE SANSON. (*Bollettino delle Malattie dell'Orecchio della Gola e del Naso.* January, 1936.)

Professor de Sanson draws attention to the difficulty in making an accurate diagnosis of brain abscess and in effecting a cure. He

has collected thirteen cases of abscess in various parts of the brain. Two cases were of abscess of the frontal lobe following osteomyelitis of the frontal bone. They appeared to be in every way similar but on operation one was surrounded by a thick fibrous capsule and lay deep to the cortex. The other, which was nearer the surface was surrounded by a thin pyogenic membrane. The bacterial infection was the same in each case, and both patients were men in their early twenties. The treatment of the two was necessarily different.

A case of otogenic abscess in a man of sixty apparently followed a transitory otitis media which left a normal drumhead. There was some tenderness of the mastoid process, headache, and coma. Exploration revealed a large abscess two centimetres deep in the temporo-sphenoidal lobe with a thick resistant capsule.

Other cases were described in which abscesses were found only after the most thorough exploration and in which there were no localizing signs whatever.

Professor de Sanson has considered his cases and many others in the literature without being able to find any explanation as to why some abscesses have a thick fibrous capsule while others are limited merely by a thin pyogenic membrane. The age of the patient, the acuteness of the infection and the age of the abscess do not seem to have any bearing on this point.

F. C. ORMEROD.

## LARYNX

*On a New Method of Filming the Larynx.* A. HALL (Stockholm). (*Acta Oto-Laryngologica*, xxiii., 1, 1936.)

Kinematograph pictures of the larynx were obtained by photographing the image reflected from the mirror in ordinary indirect laryngoscopy. An ordinary Kodak projection Model D for 16 mm. film is used as the source of light. This model with a 400 watt lamp has indirect illumination and does not transmit too much heat along with the beam of light. Side by side with the source of light is placed a Ciné-Kodak special camera with a long focus three inch diaphragm F. 4·5, and this is operated by an assistant whilst the observer sits in front of, but to one side of, the patient and controls the image of the larynx which he views through an angle finder mounted on the lens of the camera.

Some of these records have been included in the Kodak medical library and the illustrations accompanying this article include specimen reproductions of the results.

H. V. FORSTER.

# Abstracts

*The Prognostic Significance of Paralysis of the Recurrent Laryngeal Nerve.* PAUL FRENCKNER (Stockholm). (*Acta Oto-Laryngologica*, xxiii., 1, 1936.)

The author refers to previous writings on the subject of recurrent paralysis and mentions a paper by Sindriak (1907) of special interest and dealing with 1,017 cases, of which 201 were his own. Dr. Frenckner concerns himself particularly in (1) determining the cause of the paralysis of the vocal cords. (2) Following the cause of the paralysis and the later health of the patient. (3) Finding out in all cases which died whether death was due to the same primary condition as the vocal-cord paralysis or to intercurrent disease. (4) Carrying out follow-up examinations on all the other cases.

In recording his conclusions, the author believes that the investigation shows that :

I. The most usual causes of paralysis of the recurrent nerve are goitre, lues, aneurism, pulmonary tuberculosis and cancer of the œsophagus.

II. Almost two-thirds of all cases with recurrent paralysis die of the disease causing the paresis, 17 per cent. remain symptom free, and that in 15 per cent. the paresis remains.

III. More than one-half of the deaths occur during the first year after the paresis has been diagnosed and two-thirds within two years.

IV. As far as the different age groups are concerned there is no obvious difference in the length of the interval between the first examination and death.

H. V. FORSTER.

*Diabetic Lesion of the Epiglottis.* Professor G. ZANNI. (*Archivio Italiano di Otologia*, February, 1936.)

Professor Zanni, after an exhaustive search of the literature, has not been able to find any record of a case of ulceration confined to the epiglottis and due to diabetes.

He describes such a case in a man of 63. The patient was known to be a diabetic and was examined on account of a feeling of tickling, but not of pain, in the throat. Laryngoscopic examination showed an ulcer on the right margin of the epiglottis, extending on to the lingual surface. The remainder of the larynx was healthy. There was an enlarged gland in the neck. The appearance suggested an epithelioma rather than a tuberculous or syphilitic ulcer. A histological examination suggested the possibility of a basal-celled carcinoma but the picture was not typical.

During the investigation the ulcer was found to have spread on to the aryepiglottic fold. Preparation was made for a further biopsy and a lateral pharyngotomy and, as a preliminary, an intensive course of insulin was administered. At the end of this

course it was found that the ulcer had healed, leaving a small scar on the epiglottis. The enlargement of the cervical gland was probably due to secondary infection of the ulcer.

F. C. ORMEROD.

*A case of Embolus of the Vertebral Artery with a description of the findings in the Muscles of the Larynx.* P. A. CAMPBELL and E. GRABSCHEID. (*Arch. Ohr-, u.s.w., Heilk.*, 1936, cxl., 309-26.)

Changes in the laryngeal muscles have often been studied in lesions of the recurrent nerves but not, so far, in lesions of the vagus nuclei, as in the present instance. An important difference lies in the fact that the crico-thyroid muscles escape in the former cases, but become affected in lesions of the vagus trunks or vagus nuclei. In previously described cases it had been a question of old-standing paralysis of the laryngeal muscles, while in the author's case the clinical symptoms had lasted only for a fortnight before death.

The central nervous system lesion was a large focus of softening and degeneration occupying the mid-brain, the medulla chiefly on the right side, with involvement and partial destruction of both vagus nuclei (see illustrations in text).

The muscles of the larynx were carefully dissected off the cartilages and then sectioned. The authors preferred this method to serial sections of the whole larynx, because very much thinner muscle preparations could be obtained. Further, the muscles could be sectioned in appropriate planes to show nerve endings, end-organs and muscle fibre degeneration. Most muscles showed degeneration in the nerve fibrils, also slight alterations in the muscle fibres. All the changes were most pronounced in the two posticus muscles.

The question of decussation of nerve fibres from the right and left vagus nuclei is discussed, but there appears to be no agreement on this point. The authors believe that there is a decussation as in the pyramidal tracts. In conclusion they state that a destruction of either right or left vagus nucleus would cause changes in the laryngeal muscles which would be equally marked on both sides. Such changes will always be more pronounced in the posterior crico-arytenoid than in the adductor muscles.

J. A. KEEN.

*Tuberculous Laryngitis and Tracheotomy.* Dott. ENRICO RUBALTELLI. (*Bollettino dell'Orecchio, della Gola e del Naso.* February, 1936.)

The author describes the infinite variety of treatment which is applied to cases of tuberculous laryngitis, but remarks that tracheotomy is usually reserved for the most desperate cases, when suffocation is threatening. He considers, however, that there is a wider field of usefulness for tracheotomy.

He has found that in cases of simple ulceration, simple infiltration, or of diffuse exudation, tracheotomy is not only useless but definitely dangerous. In cases in which there is localized œdema, perichondritis or chondritis, or in the vegetating hypertrophic type, tracheotomy has been followed by very favourable results.

He has performed tracheotomy in twelve cases as a definite therapeutic measure, but he stresses that this should not be done in any way as a routine measure; it should be carried out only when the indications are very precise.

In the œdematous type tracheotomy puts the larynx at rest and facilitates the absorption of the exuded fluid, especially where there is some degree of localized perichondritis.

In the vegetative type tracheotomy removes the fear of suffocation and provides a much better chance of eventual cure without stenosis.

In cases of chondritis and perichondritis the tracheotomized patient drains better, but may also need a laryngostomy. Pus and sequestra are more likely to be evacuated without the risk of causing extra infection in the lungs.

Tracheotomy should be performed only for therapeutic reasons in those cases in which the general and pulmonary condition is limited, comparatively inactive, or healing.

Of the twelve cases, one died on the fifth day from rapid increase of the pulmonary disease, three became completely cured, three were notably improved and remained so for two years. The remaining five improved for a time but have tended to relapse after several months.

F. C. Ormerod.

## TONSIL AND PHARYNX

*On the Question of the Physiological Significance of the Tonsils; an Animal Experimental Study.* Torsten Skoog (Lund.). (*Acta Oto-Laryngologica*, xxiii., 1, 1936.)

Both Hingston Fox in 1886 and Kahler in 1933 remarked on our lack of certain knowledge of the physiological function of the tonsils and yet between these two utterances lies over half a century of intensive research work laden with controversy.

The two lines of enquiry, first into the purely physiological function of the tonsils and secondly into the conception of chronic tonsillitis should be kept apart. On the physiological side there is now universal agreement that the lymphocytes are not formed in the so-called germ centres, but in the outside reticular matrix. The newer term "reaction centres" came to be applied after the experiments of Hellman's pupil Glimstedt who found that the

centres did not develop in animals bred in a sterile environment, but appeared only when bacteria and toxins invaded the organism.

The old Stohrian doctrine of defence based on the centrifugal flow of lymph from the tonsil tissue had to be modified after the work of Schlemmer, who demonstrated the absence of afferent lymph tracks in the tonsil tissue. Starting with the Hellman-Berggrian view of the secondary follicles as reaction centres, the author asks the following questions and endeavours to answer them by experimental investigation.

(1) The possibility, if any, of anti-body production in the tonsillar tissue.

(2) The quantitative ratio which the contingent production bears to that in other organic tissues.

He believes that we should not exclude the tonsil tissue from sharing the function of the rest of the lymphatic system and this along with the spleen, liver and bone marrow as part of the reticulo-endothelial system.

The author's experiments deal with :

I. Extract preparations from organs of rabbits immunized against paratyphoid during different phases of the immunizing process.

II. Tests to determine the antibody production *in vitro* of different organ-tissues from rabbits immunized against paratyphoid.

He concludes that the tonsils are not capable of any considerable degree of antibody production compared with certain other organs belonging to the reticulo-endothelial system, e.g. the spleen and bone marrow, but that their physiological function must be viewed against a background of a sensitizing effect on the reticulo-endothelial system.

H. V. FORSTER.

*Statistical Review of Malignant Growths of the Upper Air Passages observed over Five Years.* ETTORE GIUFFRIDA. (*Archivio Italiano di Otologia,* January, 1936.)

The malignant tumours of the upper respiratory tract as they have occurred at the clinic of the University of Catania have been analysed. There were 160 such cases during the five years 1929-34. Of these, 118 occurred in male patients and forty-two in female. Epithelial tumours accounted for 114 cases and connective tissue tumours for forty-six. The latter included ten cases of sarcoma, twenty-two of reticulo-endothelioma and twelve of lympho-sarcoma. The groups located in the tongue and floor of the mouth, in the tonsils and fauces, and in the palate and upper jaws each accounted for about 7% ; 20% of the tumours occurred in the larynx, less than 6% in the œsophagus, while no fewer than 30% appeared in



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the naso-pharynx. The nose and accessory sinuses accounted for 15%. There is no mention of tumours in the hypopharynx or in the sinus pyriformis.

The most striking feature of this review is the large number of tumours of the naso-pharynx, which is said to be an increase over the figure for the previous five-year period. Of the fifty-one cases, carcinoma occurred in thirty-seven, endothelioma in six, lympho-sarcoma in six and sarcoma in two. In each of these groups about half the cases were complicated by metastases and in four cases there was involvement of the base of the skull. Of fifteen female cases, fourteen were carcinomata, of thirty-six male cases twenty-three were carcinomata. Some 68% of the patients were under 50 years of age but the naso-pharyngeal tumours did not occur overwhelmingly in young subjects.

The author discusses the radio-sensitivity of the naso-pharyngeal tumours. He quotes Lenz who states that radio-sensitivity varies in inverse proportion to the differentiation of the tumour cells. He finds it difficult to confirm this statement in the light of his experiences with this series of cases. He did, however, find that the undifferentiated connective tissue tumours disappeared more rapidly and recurred less rapidly, but that when they did recur, they did so with such a degree of malignancy that they defied all further therapeutic efforts.

F. C. ORMEROD.

## ŒSOPHAGUS AND ENDOSCOPY

*Primary Œsophageal Carcinoma, with especial reference to a Non-Stenosing Variety.* ROBERT W. MATHEWS and TRUMAN G. SCHABEL (Philadelphia). (*Jour. A.M.A.*, November 16th, 1935, cv., 20.)

The observations are based on a series of 108 cases that came to autopsy during the past thirteen years. No decisive point has been made concerning heredity, previous illness, or habits of life as affecting the development of cancer of the œsophagus. Thirty-five patients had gastrostomies but there was very little extension of life beyond that of the patients on whom no operation was performed. Of the total number of patients studied 20·3 per cent. were of the non-stenosing type and all occurred in the lower two-thirds of the œsophagus. Patients without stenosis presented loss of weight, weakness, vomiting, cough, hoarseness and pains in the chest, as outstanding symptoms. There would seem to be no direct relationship between the position of the carcinoma and the site of pain. The sex, age and race incidence, the location of pain, metastases, and

the immediate cause of death, were much alike in both the stenosing and non-stenosing lesions. In both series the disease was rapidly malignant, but the clinical course in the non-stenosing group was only one-third as long as that of the stenosing. Pathologically these tumours were not particularly malignant and there was no correlation between the grade of the tumour, the clinical course, and the stenosing or non-stenosing tendencies. Whether X-ray evidence is positive or negative for this disease, the suspected patient should be subsequently examined by œsophagoscopy and biopsy undertaken. A single or even a subsequent report of failure to find the tumour should not be considered as finally precluding a diagnosis of carcinoma.

The article is rather lengthy, has five charts and five tables.

ANGUS A. CAMPBELL.

## MISCELLANEOUS

*A New Method of Removal of Foreign Bodies from the Stomach.* GABRIEL TUCKER (Philadelphia). (*Jour. A.M.A.*, November 16th, 1935, cv., 20.)

Great difficulty is often encountered with the open tube gastroscope because the foreign body drops back alongside the spine when the patient is in a recumbent position. The author has devised a sheathed, flexible forceps of the cannula and stylet type, which has a modified handle and a secure grasp. The flexible forceps is covered with a rubber sheath which has a perforated ball at the lower end through which the forceps pass. At the upper end of the sheath is a slotted metal sleeve attachment which permits the adjustment of the sheath so that the forceps blades will be covered for introduction. The whole procedure is done under biplane fluoroscopic guidance with the assistance of an expert Roentgenologist. After the forceps is introduced, and fluoroscopic guidance indicates that it is in contact with the foreign body, the rubber sheath is drawn up about 1 cm. and secured by the handle mechanism. The forceps now protrudes beyond the metal ball at the end of the sheath so that the foreign body may be grasped. The upper end of the rubber sheath is provided with an attachment that permits the introduction of air by means of a double bulb. The foreign body may be manipulated and turned until a proper grasp for withdrawal is obtained by inflation of the stomach with air or rotating the patient. Extreme gentleness should be used and plenty of time allowed for the musculature of the œsophagus to relax, so preventing trauma.

The article is illustrated and two case reports are presented.

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