under local anæsthesia, and except in very special circumstances he always preferred a general anæsthetic. The part of the operation which was liable to be shirked was the all-important removal of the posterior part of the maxillary crest. However carefully the patient was anæsthetised, it was difficult to abolish all sensation in this region, and the operator was liable to stop, just short of completion.

Mr THACKER NEVILLE, in reply, said he accepted Mr Layton's correction, though he did himself use the term "narco-anæsthesia."

In answer to Dr Brown Kelly: It was true that the respirations might fall in rate, but lobeline was a wonderful counteracting drug in such an event.

In reply to Mr Gardner: He had used the cocaine solution in Vienna, and a number of his patients had fainted from poisoning. Since he had used the paste this had not occurred.

He looked upon general anæsthesia as most dangerous for nasal operations; he did not think one could operate near the cribriform plate under general anæsthesia. He had used general anæsthesia in Malta, but usually the operation was done in a sea of blood, and he had to operate by touch; operating by sight under local anæsthesia was, he contended, the only way to perform a Sluder. Submucous resection could be done better under local anæsthesia, as it then became a bloodless operation. The reason why general anæsthesia was more prevalent in London was that there were so many expert anæsthetists there.

ABSTRACTS

THE EAR.

An Experimental Investigation of the Galvanic Vestibular Reactions. GÖSTA DOHLMAN (Universitäts-Ohrenklinik, Upsala). (*Acta Oto-Laryngologica*, 1929, Supplementum vii., pp. 1-48.)

After a preliminary review of earlier work on the subject, starting with the original papers of Purkinje and Hitzig in 1871, two hypotheses are examined in detail. These are that of Brünings, who suggested that the phenomena were produced by cataphoresis in the semicircular canals, and that of Bárány, who regards electrotonus of the nerve as the causal agent. Neither of these explanations can be regarded as entirely adequate in view of the results obtained in the author's investigations. These are described in the second part of the paper. In the first place it is shown that an intact vestibular ganglion is an essential factor to the normal functioning of the galvanic reaction; the reaction can be obtained after destruction of the labyrinth, but is abolished by destruction of the ganglion (*v.* Abstract, *Journ. of Laryngology*, 1929).

The reaction is abolished too, if the nerve is divided central to the ganglion. Further experiments suggest that the ganglion is of great importance in the maintenance of vestibular tonus. It is possible that the galvanic vestibular reaction is produced by changes of tonus within the ganglion caused by the passage of the galvanic current in one direction or the other.

In another series of experiments the vestibular nuclei were injured in the floor of the fourth ventricle, following the technique of Lorente de Nó, and the changes in the galvanic reaction were compared with those of the tonic reflexes of the eye muscles and the reflexes from the semicircular canals. After loss of tonic reflexes, although reflexes from the canals could still be obtained, the galvanic reaction was weakened or even abolished. It is suggested, therefore, that the galvanic reaction depends on the integrity of the nerve elements that subserve the tonic reflexes. It is possible that some cases of spontaneous vertigo may be due to changes in the vestibular ganglion similar to those that have been experimentally produced.

AUTHOR'S ABSTRACT.

Unusual Origin of Meningitis following Trauma and "Fibrinous" Mastoiditis. Prof. MAX MEYER. (*Zeitschrift für Laryngologie, Rhinologie, etc.*, Band xviii., June 1929.)

The case described is specially interesting, because on macroscopic evidence a certain conclusion was reached; but after microscopic investigation an opposite clinical explanation was arrived at.

A boy, aged $3\frac{1}{2}$, was admitted with middle ear suppuration (R) and obvious signs of meningitis. In the previous history there had been an otitis following scarlet fever at the age of $1\frac{1}{2}$, *i.e.*, two years previously, also on the right side; this was said to have healed rapidly. The present acute otitis began three days before admission. It was also mentioned, quite casually, that the boy fell on his head four weeks before the present illness. Some bruising in the face had resulted, but there had been no loss of consciousness.

At the operation the antrum and mastoid cells were found to contain "granulations," but no free pus; purulent fluid was obtained from both middle and posterior fossæ. Death occurred on the following day, and the post-mortem examination showed extensive purulent meningitis; there was no sign of a fractured base, and no macroscopic evidence to show how the infection had reached the meninges. Remembering the "granulations" found at operation Professor Meyer thought that the otitis was most likely old-standing in spite of the history to the contrary; also, that the trauma was not connected with the causation of the meningitis.

Ear

Microscopic and histological investigations established two points:—

(*a*) The "granulations" were found to be masses of firm fibrinous exudate containing leucocytes; the microscopic picture was identical with that seen in pneumonia in the grey hepatisation stage (approximately fourth day of the disease).

(*b*) Serial sections of the decalcified petrous bone showed suppurative labyrinthitis, the inner ear containing the same fibrinous exudate. Further, these sections showed the presence of a *bony fissure*, extending from the tympanic cavity near the processus cochleariformis to the vestibule.

In the microphotograph which accompanies the article it can be seen that this fissure is not a recent one. It contains firm fibrous tissue and there is some new bone formation. This fissure is several weeks old and is almost certainly due to the head injury. A very important point is the fact that the fissure is not yet completely healed and that it still forms a possible pathway for infection to travel from the middle to the inner ear.

The true explanation of the clinical course was, therefore, the following: A severe otitis media of quite recent origin, the infection being of the pneumococcus type, followed by a rapid spread to the labyrinth and the meninges by way of a partially healed bony fissure which was of traumatic origin. J. A. KEEN.

Spontaneous Hæmorrhage from the Lateral Sinus through the Tympanic Cavity and External Auditory Meatus in a Case of Chronic Suppurative Otitis Media. Dr FONVIELLE. (*Arch. Inter. de Lar.*, March 1929.)

No similar case appears to have been reported in medical literature. The mastoid operation showed the bone to be eburnated with extensive necrosis of the mastoid antrum and cells. The cavity was filled with blood clot, and on clearing this away there was a profuse hæmorrhage from the lateral sinus, the wall of which had become eroded.

The character of the mastoid cavity and granulations suggested tuberculous disease, but bacteriologically and by inoculation into a guinea-pig it was proved that this was not the case. M. VLASTO.

Oto-Microscopy on the Living Person. Dr LUSCHER. (*Arch. Inter. de Lar.*, March 1929.)

Dr Luscher has designed an optical instrument which gives a magnified image of the drum to X50. The vision is binocular, and the image can be viewed by an independent observer. The instrument is made by Haag Streit, Seilerstr, Berne, Switzerland.

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The author describes a few of the lessons to be learnt from high magnifications of the eardrum. For instance: it is easy to differentiate between perforations of recent date, and those of long standing. Small effusions of fluid in the tympanic cavity can be seen. The vascularisation of the drum can be noted in great detail; hence the instrument is of scientific as well as of clinical interest.

Stress is laid on the fact that the view obtained by a second person makes the instrument very useful for teaching purposes.

M. VLASTO.

Meningitis of Labyrinthine Origin. Professor RIMINI. (*Arch. Inter. de Lar.*, March 1929.)

The subject is introduced by a detailed description of a case of streptococcal meningitis following a diffuse purulent infection of the labyrinth. Labyrinthotomy was eventually followed by recovery. Accessory treatment in the form of intrathecal administration of antistreptococcal serum and intravenous injection of urotropin possibly assisted in the recovery.

The author favours lumbar puncture as a routine therapeutic measure, provided that the pressure of the C.S.F. does not fall below 15 c.cm.

Urotropin possesses the property of being absorbed by the choroid plexus, and in the case quoted it was administered a number of times in 4 gram doses with apparently good effect. (10 c.c. of a 40 per cent. sol. intravenously.)

The author next discusses the indications for opening the labyrinth in cases of meningitis of labyrinthine origin. In his opinion labyrinthotomy is always indicated when the cochlear and static functions are totally abolished. Every case, however, should be treated on its own merits, and not on a particular rule. Such factors as the general condition of the patient, the virulence of the infection, and the personal experience of the operator, must be taken into serious account.

M. VLASTO.

A New Form of Treatment for Suppurative Otorrhœa. Dr MAURICE YOEL. (*Arch. Inter. de Lar.*, March 1929.)

Culture from the pus obtained in suppurative conditions of the middle ear nearly always shows a mixed infection. It would, therefore, appear rational in vaccinotherapy to employ either a polyvalent stock vaccine or an auto-vaccine. The author, quoting from the results obtained in 30 cases, strongly recommends a vaccine purely staphylococcal. The vaccine used by him was that of the "Institut Pasteur" of Paris. In children he starts by giving a 1/10 c.cm., and the dosage is gradually increased by a 1/10 c.cm. up to 2 c.cm.

M. VLASTO.

Ear

Retropharyngeal Abscesses complicating Middle-Ear Suppuration. L. HAYMANN. (*Zeitschrift für Laryngologie, Rhinologie, etc.*, Band xviii., June 1929, pp. 204-209.)

A comparatively rare complication of otitis media is an extension of the inflammation towards the pharynx. This complication arises more often in connection with *acute* otitis than with the chronic variety. The author describes three of his own cases; in each instance he had done an early paracentesis and later a Schwarze operation. Subsequently abscesses pointed in the pharynx, in two of the cases laterally behind the posterior pillar, in the third above the right tonsil. Pus had to be evacuated by incision in the pharynx before the patients recovered.

It is interesting to recall the various routes by which the inflammation can reach the pharynx:—

(1) Direct spread from a focus near the tip of the petrous.
(2) Extension of a perisinus or peribulbar abscess towards the retropharyngeal space.
(3) Extension through the floor of the middle ear, occasionally with involvement of the mandibular joint.
(4) Extension of the inflammation from the middle or the posterior fossa through the various foramina (ovale, rotundum, lacerum posterius, jugular).
(5) Through the anterior wall of the tympanic cavity, particularly along the canal of the tensor tympani muscle when there is closure of the Eustachian tube.

In the three cases described here "5" seemed the obvious route by which the pus had spread. A closed Eustachian tube is probably less important than the presence of well-developed pneumatic cells in this part of the petrous bone (peritubal group). One of these cells gives way and an abscess forms in the soft tissues at the base of the skull; the pus may then track downwards towards the pharynx, but the inflammation may also spread upwards to the meninges through the various foramina. Haymann believes that route "4," described by other authors, is really the same as route "5," viz., suppuration in a peritubal pneumatic cell which has broken through and has then spread in both directions.

In the course of very severe acute otitis one can sometimes observe fleeting swellings in the pharynx. These swellings do not always lead to abscess formation, but they indicate that there is a suspicion of a pharyngeal extension. In such a case it would probably be the safest procedure to do a *radical* mastoid at once, although the otitis may only be a recent infection. The radical operation allows fairly free

drainage of the peritubal region, and may prevent the extremely serious upward spread to the meninges when an ordinary antrotomy would not have sufficed. J. A. KEEN.

Isolated Paralysis of the Vestibule. R. CAUSSÉ. (*Annales des Maladies de l'Oreille, etc.*, January 1929.)

The writer states that the sudden appearance of a vestibular paralysis with cochlear integrity (a condition less rare than is generally supposed) must awaken the idea of a neuropathic affection identical with those which attack the 7th, the 5th, or any other cranial pair. Hence, one must first of all think of a syphilitic neuritis. Although, theoretically, a peripheral or nuclear alteration can produce the same syndrome it seems hardly likely that such an altogether exceptional condition can occur. The possibility of a disseminate sclerosis, perhaps even of a tumour of the cerebellopontine angle, must not be forgotten. However, by complete and repeated vestibular examinations these possibilities may be eliminated.

A complete bibliography is added. L. GRAHAM BROWN.

Diplacusis and other Unusual Phenomena in a Case of Otitis Media. Prof. SEIFFERT (Berlin). (*Zeitschrift für Hals-, Nasen-, und Ohrenheilkunde*, Band xxiii., Heft 2, p. 150.)

The patient noticed that a female voice sounded of higher pitch in the left (the affected) ear than in the right. The higher tone was not an overtone of the normal one, and the higher in the scale the notes lay the greater was the difference of pitch, in the upper regions an octave or more, and in the lower ones almost nil. The writer touches on various theories of diplacusis and concludes that there is really a concomitant affection of the inner ear, a view supported in this case by the presence of "otolith" vertigo and lowering of the upper range of audition. Seiffert suggests a relaxation of the basilar fibres (possibly a weighting, J. D.-G.) so that for a given "frequency" a higher fibre is set in vibration, and the central nerve-cell associated with this fibre is stimulated and arouses the sensation of its own higher tones.

JAMES DUNDAS-GRANT.

The Centre for the Production of Nystagmus by Electrical Stimulation of the Brain-Stem in the Rabbit. Dr ARTUR BLOHMKE (Königsberg). (*Zeitschrift für Hals-, Nasen-, und Ohrenheilkunde*, Band xxiii., Heft 3, p. 213.)

Tracings of the contractions of the oculo-motor muscles were taken on the kymographion as occurring spontaneously after sections through the corpora quadrigeminal region, as absent in spite of electrical

stimulation, and as induced by electrical stimulation before sections were made. Histological examinations were made post-mortem to check the position of the nystagmus-producing centre. This was found to be, not in the superficial centres in the roof of the corpora quadrigemina, but in the small-celled portion of the formatio reticularis of the mid-brain, in an area situated lateral to and in front of the nucleus ruber, medial to the corpora geniculata, and dorsal to the pes of the crus cerebri. JAMES DUNDAS-GRANT.

NOSE AND ACCESSORY SINUSES.

Bacteriological Consideration in Ozæna. P. GUNS. (*Annales des Maladies de l'Oreille, etc.*, February 1929.)

The writer explores further the theory of microbe infection in the ozænic form of atrophic rhinitis. Examining cultures taken from the normal nose, from cases of traumatic atrophic rhinitis, and from syphilitic atrophic rhinitis, he concludes that of the organisms so far isolated and described none can be considered as the definite causal agent in ozæna.

Further, he himself has succeeded in isolating in true cases of ozæna a particular organism, characterised by the fact that it forms in cultures on sloped gelatine thick white viscous colonies, producing a quantity of glairy gummy substance at the bottom of the tube, which after a time gives the characteristic odour of ozæna.

This organism is rarely met with in the ono-ozænic form of atrophic rhinitis, but is nearly always present in cases of true ozæna. The various strains of this microbe, though differing in their biological characters and in the tests of fermentation are, however, identical microscopically and culturally.

He concludes by saying that this glutinous organism isolated from cases of true ozæna is not pathological, and does not produce fœtid atrophic rhinitis when it is instilled into the nasal fossa of the normal individual, or into the syphilitic atrophic nose.

Hence there must be another etiological factor present in ozæna of which we are so far ignorant. L. GRAHAM BROWN.

A Case of Rhinoscleroma in the Tatar Republic. N. BOBROVSKIJ. (*Zent. f. Hals-, Nasen- und Ohrenheilkunde*, 1929, Vol. xiii., p. 239.).

The principal areas for rhinoscleroma are in South Russia, the Ukraine, and particularly in White Russia. Outside Russia the disease is not common. In the eastern part of European Russia up to now, no cases of rhinoscleroma have been reported. Between 1910 and

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1917 four cases of rhinoscleroma were diagnosed in the Dermatological Department of the University of Kazan, but these were not published. In this paper the Author describes an undoubted case of rhinoscleroma in the Tatar Republic where the disease, up to now, has been unknown.

The patient was a boy of 15, who had first had difficulty in breathing at the age of 10 after a cold. The outer nose was normal; there was a slight spur on the septum, the right middle turbinal was swollen and crusted, and there was bilateral atrophic rhinitis. Both lips were free of disease, and the tonsils were large and markedly lobulated. In the postnasal space there was extensive scar-like constriction of the posterior choanæ with dryness of the mucosa. In the larynx there was hyperæmia of the introitus, with reddening of the vocal cords; the arytenoids were movable, but the false vocal cords were infiltrated, and in the subglottic region there was bilateral swelling, which was found to be very hard on bronchoscopic examination. There was no ulceration of the mucosa. The posterior wall of the trachea showed scar contraction.

Cultures of the nasopharyngeal and laryngeal secretion yielded Frisch's organism. Injections of the organism so obtained into the comb of a cock produced in 35 days, first of all a great thickening, and then shrivelling and induration of the comb, without in any way affecting the bird's general condition. Medical and surgical treatment had not much effect, but considerable relief was afforded by two bronchoscopies. The author hopes for better results in the future from X-rays and radium. He suggests that the best form of vaccine therapy would be auto-inoculations, by which means the organisms would have better access to the blood than is allowed them by the local condition, and so resisting power might be raised.

F. W. WATKYN-THOMAS.

The Correction of Crooked and Broadened Noses. HEERMANN (Essen). (*Zeitschrift für Hals-, Nasen-, und Ohrenheilkunde*, Band xxiii., Heft 2, p. 133.)

It has hitherto been usual to divide the ascending process of the maxilla by means of a fine saw introduced inside the nose through an incision in the line of the pyriform aperture. Heermann describes a chisel which he has devised for use in its place. The chisel has a narrow flat back-plate, which projects slightly beyond the end of the blade and lies on the surface of the bone, while the point of the chisel ploughs its way through the bone. It is recommended as being more easily controlled than the saw and, therefore, less dangerous, while it is less damaging to the periosteum. The illustrations make the description very clear. JAMES DUNDAS-GRANT.

Larynx

Experiences with the Muck "Adrenalin-Probe Reaction." JOÉL (Rostock). (*Zeitschrift für Hals-, Nasen-, und Ohrenheilkunde*, Band xxiii., Heft 3, p. 277.)

Muck's adrenalin-probe reaction is said to be "positive," or pathological, when stroking the turbinal mucous membrane, rendered anæmic by a spray of adrenalin, produces a white line. In the normal person such stroking after adrenalin spraying should produce a red one, and the reaction (ASV or Adrenalin Sonde Versuch) is said to be "negative." Joél tested it in 12 cases of organic damage to the brain, 6 of labyrinthopathia vasogenica, 8 of pregnancy and 8 of syphilis. The white line occurred in all of the cases of syphilis and of vasogenic labyrinthopathia, in 11 of the 12 cases of organic brain disease, and in 9 out of 15 cases of pregnancy.

The practical interest of the reaction is that when "positive" it indicates an "anomaly" of some sort and affords an additional help in the diagnosis of the conditions above mentioned, suggesting also the existence of some organic derangement.

JAMES DUNDAS-GRANT.

LARYNX.

Galvano-Cautery in the Treatment of Laryngeal Tuberculosis. A. TENJAEV. (*Zent. f. Hals-, Nasen- und Ohrenheilkunde*, 1929, xiii.)

The author reports on the results of treatment by galvano-cautery in 18 cases of laryngeal tuberculosis seen in eighteen months. For energetic treatment by deep puncture only proliferative cases with good lung condition were taken. These show the best reaction and no general ill effects. Of six patients of this group, with stationary fibroid lung processes and limited infiltration of the cords and bands, in two complete cicatrisation was obtained, two were much improved, one improved, and one was unaffected. Exudative cases with superficial disintegration of the infiltrate react more strongly to cauterisation, but here too the cautery can be employed to produce local cicatrisation. In five patients of this group with pulmonary tubercle, partly proliferative and partly exudative, in whom the laryngeal condition was advancing, the infiltrate larger, and partly ulcerated, with œdematous pericontritis, one could, on account of the greater general reaction, produce only a partial cicatrisation of the infiltrate. Three of these patients died in eight to ten months of a generalisation of the pulmonary condition. Two are still under treatment.

In the presence of widespread destructive changes with severe lung disease, galvano-cautery is contra-indicated. In seven patients with acute pulmonary tubercle, deep ulceration, necrosis of cartilage

and stenosis, no improvement was obtained on account of the severe general reaction and high fever. Of these patients five died, and in the two survivors prognosis is very bad. Local treatment by ultra-violet light and careful use of radium and X-rays as well as the general treatment should be used in association with the galvano-cautery.

F. W. WATKYN-THOMAS.

PHARYNX.

The Treatment of Cancer of the Pharynx, Larynx and Œsophagus, by Surgical Diathermy. DAN MCKENZIE. Read before the First International Oto-Rhino-Laryngological Congress, Copenhagen, 29th July to 1st August 1928. (*Annals of Otology, Rhinology and Laryngology*, March 1929.)

The author commences by giving reasons for using diathermy in operating on pharyngeal cancer. 1. It prevents the operator squeezing live cancer cells into the lymphatic vessels that drain the affected area. 2. It prevents the sowing of the operation field with living cancer cells. 3. It destroys the bacteria of sepsis in the adjoining tissues. 4. It is useful in diagnosis for sealing off the wound after removal of a piece of tissue for examination.

The location of cancer in the pharynx is discussed; in the author's experience the commonest site is in or about the tonsil. The base of the tongue and the surface of the soft palate furnish sites of origin with about equal frequency. The hyoid fossa is not an uncommon site, but it is rare to find cancer originating on the uvulal or posterior wall of the oropharynx. We encounter postcricoid cancer with apparently increasing frequency.

Dr McKenzie classifies cases from the point of view of the operator into two groups, eradicable and ineradicable. In this classification the situation of the growth must be taken into consideration. Early cancer of the tonsil, for example, or of the faucial pillar, or soft palate or uvula, or intrinsic cancer of the larynx, is more often eradicable than cancer of the base of the tongue, the hyoid fossa, the postcricoid region, or extrinsic laryngeal cancer.

As a guiding principle in treatment the old rule of removal of the growth in mass where possible, by an excision that passes entirely through healthy tissue, should be followed. Where this is not possible the case is regarded as ineradicable, and all that can be done is to destroy as much of the growth as possible by diathermy coagulation.

Cervical Glands.—The views of Wyeth and Sampson Handley are stated. The author, in summing up the question of removal or not of the glands, says that if we aim at total eradication we must remove or destroy not only the primary growth in the pharynx but the whole

lymphatic area draining the affected locus. A special note is made of retrograde extension of the disease necessitating a removal of glands upwards along the jugular vein towards the base of the skull. Infection from the pharynx selects a definite route—carotid glands and (or) the submaxillary, and those of the posterior triangle. Removal of the glands is described; the author makes a scalpel dissection, followed by application of the diathermy electrode to the bed of the removed glands and to the raw edges of the fascia. Glands are punctured with diathermy needle before excision. They shrivel up and are more easily removed; the diathermy also prevents dissemination of live cancer cells should the gland be accidentally punctured.

The various operations are described under the headings of localities of the cancer—tonsils, soft palate and uvula, epiglottis, pillars of the fauces, tongue, posterior wall of oropharynx, introitus laryngis, and postcricoid.

The author prefers to do the neck operation first, and always ties the external carotid. With regard to hæmorrhage, diathermy seals off veins, capillaries and small arteries, but arteries of moderate size will require ligature (if the carotid has not been tied), and this is often difficult in coagulated tissues. Secondary hæmorrhage, it is thought, possibly occurs more frequently than we might suppose from the literature. The neck being cleared, the active diathermy needle may be plunged several times into the tissues under the angle of the jaw between the neck wound and the tonsil, the idea being to seal the lymphatic vessels in this region.

On proceeding to the removal of the growth, which may be done at the same séance as the neck operation or later, the best method of removal of the tonsil and its growth is found to be with the head in the inverted position, using the Davis gag. Ether as an anæsthetic must be avoided. There are two steps in the operation; first the coagulation of the whole surface of the growth with diathermy, and second what is called "circumvallation." This is described: the growth being isolated by an impassable barrier of coagulated tissues, the active knife is plunged deep to the tonsil from the anterior incision into the peritonsillar tissues in several directions. The growth is now removed *en masse*. This dissection is not as easy as it sounds. There are two methods of using the diathermy current in the act of dissection; these are termed the slow and the rapid methods. They are discussed and the advice given, that one should become a slave to neither but should use both. The final step is the submission of the whole operation area to the action of the coagulation terminal. This has to be done with care, and the method is gone into. Post-operative shock is often absent and pain is slight. An œsophageal feeding-tube may be an advantage. The temperature

usually rises in the first twenty-four hours. Although sloughs frequently become fœtid, the living tissues beneath them are not infected. Epithelialisation is usually complete in eight to ten weeks.

In cancer beginning at the uvula or near the mid-line of the soft palate, the whole soft palate and both tonsils should be removed; the glands also should be cleared from both sides of the neck. If deliberate excision of epiglottis is preferred it should be done through a subhyoid pharyngotomy. Preliminary tracheotomy should be done in all cases near the larynx. Introitus laryngis — In most cases surgical operations have been out of the question. Trotter's lower lateral pharyngotomy gives access and diathermy may be employed. The operation is of some magnitude, and with a high mortality in the author's experience. Uses of diathermy in the larynx are mentioned but not favoured. Patients should all return periodically for inspection, as recurrences can be coagulated as they appear.

Ineradicable cancer is commoner, the proportion to eradicable cases being four to one in the author's experience. Most of the ineradicable cases come to hospital. On the other hand ten out of twelve eradicable cases were seen in private. McKenzie considers the cancer ineradicable (1) when it has penetrated deep into the tongue; (2) when adherent to bone; (3) when in glosso-epiglottic fossa; (4) when very extensive in hyoid fossa, introitus laryngis or laryngo-pharynx; (5) when glands are large and matted with adhesions; (6) when in the œsophagus.

Glands should be removed, or where this is impossible they should be diathermy-punctured *in situ*. In connection with the treatment of the growth, stress is laid on the close relationship between malignancy and sepsis. Part of the problem is, assuming that the cancerous area cannot be extirpated, how to make and keep it aseptic in order to prolong the patient's life in comfort. By diathermy we can not only coagulate and destroy cancer *in situ*, but, even where we fail to destroy it utterly, we can reduce and even abolish the septic element in it, at least for a time. Diathermy then (1) kills cancer cells and (2) sterilises living tissues of septic bacteria. It is important to be sure that the diathermy can be applied to the entire area. To diathermise one part and leave another, probably does more harm than good. The diathermy treatment of ineradicable cancer of different regions is then described in detail. A note is made on the unsatisfactory results got in cases of sarcoma, particularly in highly malignant lymphosarcomas. In an interesting section there is given a comparison of diathermy with radium and deep X-rays. Notes on 12 cases follow with remarks on those. In all 5 tonsil cases recurrence took place. It is unwise to regard a three-year period of freedom from recurrence as equivalent to permanent cure. In all recurrences the end was quiet, gradual, and free from the severe pain and the septic

element. The author has had many cases in which diathermy has been followed by relief of pain and restraint of extension, and he regards diathermy as one of the best palliatives in our possession at present. NICOL RANKIN.

X-ray Examination of Deformities of the Nasopharynx. Professor ARTHUR SCHÜLLER, Vienna, Austria. (*Annals of Otology, Rhinology and Laryngology*, March 1929.)

By means of X-rays it is possible to form an opinion as to the dimensions of the nasopharynx. The lateral view is the best for this purpose. An excellent collection of X-ray pictures is given with explanatory drawings. Bony points to be noted are, free edge of pterygoid processes, base of the corpus sphenoidale, basilar part of occipital bone, outline of the condyloid process of the occipital, and the anterior arch of the atlas. The lower limit of the nasopharynx is the line joining the posterior edge of hard palate and the anterior tuberculum of the atlas. The length of this line is a measure of the transverse dimension of the nasopharynx. A vertical dropped to this line from the highest point of the roof gives the vertical dimension. The width of the shadow line of the soft tissues on the posterior wall is about 1 cm. In adenoid hypertrophy there is a marked tumour-like projection into the lighter area of the pharyngeal cavity.

The plane traversing the lower edge of the orbit and the highest point of the external auditory canal, called "the eye-ear plane," is used for measuring the "level" relations of the fossæ of the base of the skull. The anteroposterior diameter of the nasopharynx varies with the curving of the base of the skull, or of what is termed the basal angle. Three types of pharyngeal arch are noted, the angular arch, the rounded arch, and the low arch characteristic of childhood.

Congenital and acquired deformities of the base of the skull or upper cervical vertebræ give rise to variations in size and shape of the nasopharynx. Few data are to be found in the literature about the practical importance of such abnormalities. In regard to cases where difficulties have been encountered in the removal of adenoids the author mentions notes on the subject by Wetzel, M'Carthy, Bernfeld and others. References are given.

Deformities of the bony surroundings of the nasopharynx are classified in three groups. 1. Narrowing due to shortening of the base of the skull. 2. Congenital or acquired deformities of the upper cervical vertebræ, congenital luxation of the atlas on one side, rachitic deformities, etc. 3. Deformities found in narrowing of the cranium due to premature synostosis of the sutures. Cases are reported in which obstruction to nasal respiration, where operations or attempted operations for adenoids had failed to give relief was found, on X-ray examination, to be due to deformities in the bony parts about the nasopharynx.

In conclusion, the author advocates X-ray examinations in cases of difficult nasal respiration; such examinations occasionally reveal deformities of the base of the skull or upper cervical vertebræ as the cause of the trouble. Orthopædic treatment may sometimes correct the deformities and relieve the nasal obstruction. NICOL RANKIN.

Further Results of Experimental Researches on Cancer Deposits in the Gums and Teeth. HEYNINX. (*Zent. f. Hals-, Nasen- und Ohrenheilkunde*, 1928, Vol. xiii., 142.)

The foul green-grey tartar on the teeth becomes aseptic when rubbed up in warm salt solution. Two drops of this unsterilised deposit were injected under the skin of the neck of white mice. In order to avoid the possibility of tissue proliferation by continual irritation no antiseptic was added and the injection was not repeated. The incubation period was taken as lasting eight months. Within this time nine mice died as a direct consequence of infection with sloughing at the site of the inoculation. Six others died of intercurrent disease or old age. Of the five that survived the 8-month period two developed undoubted carcinoma.

Of these two cancerous mice, both inoculated on the 6th September 1926, one showed in March 1927 a suspicious crusting on the nape of the neck. A cancer developed in September with deposits in the abdominal wall and the left thigh, and metastases in the lymphatic glands. Histologically the growth in the neck and in the abdominal wall showed adenocarcinoma of mammary gland tissue type.

The second cancer mouse developed an abdominal tumour in April 1927 and died on the 29th of May. Histologically this was a small celled adenocarcinoma, again of mammary gland tissue type.

In a third mouse, again eight months after inoculation, a suspicious circular ulcer appeared on the back. The mouse died four weeks later. Histologically only inflammatory tissue was found. There was no evidence of new growth.

The author's view is that the cancer germ is found on the surface of raw food and tobacco. It infects the gum and from there, should the ground be favourable, passes into the body by swallowed saliva or by the blood and lymph passages. F. W. WATKYN-THOMAS.

Prophylaxis and Radium Treatment of Carcinoma of the Tongue. PAUL LAZARUS. (*Zent. für Hals-, Nasen- und Ohrenheilkunde*, 1928, Vol. xiii., 146.)

According to Lazarus one-third of the cases of carcinoma of the tongue have as a predisposing condition some form of leukoplakia (psoriasis, ichthyosis linguæ "smoker's patch"); the commonest causes of these predisposing conditions are syphilis and tobacco. Thus

leukoplakia must never be regarded lightly. In fact the slightest changes in the tongue substance must always be regarded with suspicion; all sources of irritation such as carious teeth, excessive smoking, or unsuitable dietary should be dealt with at once. In syphilitic cases the danger of stomatitis produced by mercury or bismuth must not be forgotten. In doubtful cases of dental or syphilitic ulcer microscopical examination is always advisable as the presence of a positive Wassermann does not exclude malignant change.

In the treatment of leukoplakia in its early stages alkaline remedies, boroglycerine, painting with perhydrol or resorcin, a course of arsenic, or a Karlsbad Cure are often adequate. If induration is present excision or radio-therapeutic measures are advisable.

In the treatment of definite tongue cancer, apart from clearance of the cervical glands which should be carried out as early and as completely as possible, the choice lies between operation, X-rays and radium. The end results of operation are so unsatisfactory that, after a considerable experience of surgery, Lazarus regards radium-therapy as the method of choice. He advises that the radium treatment should be practised before the removal of the glands. In his opinion many of the glands are only inflamed and not infected. Six to eight weeks after treatment with radium and X-rays the operation can be undertaken in a radio-sterilised area without danger of dissemination of cancer cells; the glands will have shrunk, adhesions will have diminished, and a mass, previously inoperable, may become removable. At this stage diathermy may be used. Six weeks after the operation deep X-ray treatment may be undertaken over a large area. The author objects to primary operations followed by ray treatment as it is impossible to localise the action of the rays.

F. W. Watkyn-Thomas.

A Case of Cervical Phlegmon after Tonsillectomy. Ko. Shöryn (*Fukuoka*). (*Zent. f. Hals-, Nasen- und Ohrenheilkunde*, 1928, Vol. xiii., 228.)

On the fourth day after tonsillectomy the patient had pain in the right tonsil wound with swelling of the right side of the face, right parotid, and right side of the neck. The temperature rose to 39° C. with pulse of 130. The condition lasted for five days with constipation, high temperature, and rapid pulse. The most prominent symptoms were the swelling of the tonsillar region, trismus, and the right-sided cervical swelling. The tonsillar fossa was covered with a thick white coat from which were obtained streptococci and short bacilli. Culture yielded pure streptococcus. The throat was treated with hydrogen peroxide and fomentations. The constipation was treated and the whole condition cleared up without further trouble.

F. W. Watkyn-Thomas.

Abstracts

The Anatomical Situation of Antero-Superior Peritonsillar Abscesses. J. TERRACOL. (*Annales des Maladies de l'Oreille, etc.*, January 1929.)

In such cases agreement has not yet been established on the question of the exact site of the purulent collection.

Three theories are current, viz. :—

(1) That it forms under the tonsil in the loose cellular tissue interposed between the fibrous capsule and the pharyngeal wall itself.

(2) In the supra-tonsillar fossa (the intra-velic abscess).

(3) In the pre-styloid space (*i.e.*, the space lying outside the pharynx in the cervical region and bounded by the following muscles and their aponeuroses, namely, the superior constrictor, the stylo-glossus, the stylo-pharyngeus and the internal pterygoid).

From a study of injection experiments, the actual appearance of a post-mortem specimen, and his clinical observations in opening such abscesses, the writer concludes that the first theory is altogether impossible, whereas the other two may be equally correct according as to whether the pus lies superficial in the supra-tonsillar fossa or has invaded the deeper pre-styloid space. L. GRAHAM BROWN.

Post-anginal Pyæmia. RICHARD WALDAPFEL (Vienna). (*Zeitschrift für Hals-, Nasen- und Ohrenheilkunde*, Band xxiii., Heft 2, p 178.)

Inspired by E. Fraenkel's study of post-anginal pyæmia, Waldapfel worked up the literature of this dangerous and fortunately uncommon affection and analysed the reports of the cases which had occurred in the Vienna Clinic, 43 in number. Death took place in 25 of these, of which 17 had been operated on and 8 had not. Recovery resulted in 18, 15 with operation, 3 without. The condition required for recovery was the getting the better of the abscess process, rather than of the thrombosis of the veins, which was, however, a very prominent and fairly constant element in the cases. This thrombosis was generally free from bacteria and appeared to be caused by toxins in the neighbouring abscess. Thrombosis in the internal jugular does not occur primarily, but it may arise secondarily owing to suppuration in the lympathic spaces or glands. "From the operative results it may be stated that if the abscess can be dealt with recovery takes place, if not, the case ends fatally; in the former even if no veins are tied or resected, in the latter even after ligature and resection." "Opening the para-pharyngeal space and shutting off the mediastinum after a prophylactic 'collar' mediastinotomy is the method of choice."

Thrombosed veins, if easily detected and reached, may be resected. It is noteworthy that no cases occurred in children. This article is liberally illustrated. JAMES DUNDAS-GRANT.

The Diagnosis of Chronic Tonsillitis, especially the Dangerous Form. Dr W. BLUMENTHAL (Coblentz). (*Zeitschrift für Hals-, Nasen- und Ohrenheilkunde*, Band xxiii., Heft 3, p. 288.)

The diagnosis is greatly dependent on the condition of the glands, these being almost invariably enlarged or tender in chronic disease of the tonsil, which passes through the capsule, with threatening danger to the whole organism. These are the lymphatic glands which lie under the horizontal ramus of the mandible further forward than the "tonsillar" ones. JAMES DUNDAS-GRANT.

MISCELLANEOUS.

Intranasal Immunisation against Scarlet Fever. B. A. PETERS and S. F. ALLISON. (*Lancet*, 1929, Vol. i., 1035.)

The authors, by reason of the objection shown by many to hypodermic inoculations, have used nasal sprays of scarlet fever antitoxin, "B" strength, every other day, the nose having first been sprayed with 1 per cent. sodium taurocholate to promote absorption. The results as regards the Dick tests was that out of 61 cases, 22 were negative, 24 much reduced, and in 15 there was no change. In two small outbreaks of scarlet fever none of those rendered negative contracted the disease, but those who were still positive did so.

MACLEOD YEARSLEY.

Vasomotor and Secretory Disturbances following Suppurative Parotitis. G. JARIN. (*Zent. f. Hals-, Nasen- und Ohrenheilkunde*, Vol. xiii.)

In this patient, following a suppurative parotitis, the skin of the face on the affected side flushed and sweated intensely during eating. Jarin's explanation of these phenomena is that as a consequence of the inflammation adhesions formed between the gland and surrounding structures. The vasomotor and sweat-gland fibres were involved in the scar tissue and were compressed whenever the gland swelled. Thus the increase of volume during mastication produced sweating and flushing. Jarin treated the case by excision of the auriculo-temporal nerve central to the gland. By this means the activity of the gland was paralysed and the abnormal stimulation no longer occurred.

F. W. WATKYN-THOMAS.