usually associated with the use of epinephrine. Moreover, ephedrine caused shrinkage of the mucous membrane and turbinals over a much longer period of time than was the case with epinephrine, the duration of its action being from four to six hours. In this way drainage was maintained for a considerable time. Dr McGinnis stressed the value of exercise and fresh air as a useful means of effecting the same result as the application of ephedrine.

Dr F. P. Emerson held the opinion that if the intranasal treatment failed, then an opening should be made into the antrum beneath the inferior turbinal, as this procedure was preferable to repeated puncture with the trocar and cannula. No irrigation should then be practised as this was liable to irritate the mucosa and maintain the discharge. Drainage and ventilation were sufficient.

In the treatment of the chronic case, opinion was divided as to whether interference should be limited to the window resection in the lateral wall of the inferior meatus or should be combined with investigation of the interior of the cavity through an opening in the canine fossa—in other words, the so-called radical operation. Dr Shurly stated that more than 70 per cent. of the chronic infections responded to treatment by the window-resection. Dr J. F. Barnhill, on the other hand, was in favour of inspection of the interior of the sinus in chronic suppuration, and he believed more and more in the efficacy of the radical operation where there was sufficient pathological change present to require an operation.

ABSTRACTS

EAR.

A Hæmangio-Endothelioma of the External Auditory Meatus. A. BRONZINI. (*Archivio Italiano di Otologia*, September 1929, p. 590.)

The case recorded is of a man of 40, who complained of deafness in one ear. The external auditory meatus was found to be filled by a skin-covered tumour springing from the depths of the meatus. The meatus was dry. Removal was declined on account of pressure of business; when seen again fourteen months later the condition had not altered. Three years after the first examination the tumour was found to have grown outwards, and was presenting in the concha. It was also found to have invaded the middle ear and the mastoid process. A radical mastoid operation was performed, and apparently all the growth cleared. It proved to be a perithelioma arising in blood vessels. Six months later the deep glands of the neck were found to be invaded

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and, in spite of treatment by radium and X-rays, this secondary deposit increased until it interfered with deglutition, and in two years—nearly five years from the first examination—the patient died.

From one with purely innocent characteristics this tumour changed into a highly malignant one, with both primary and secondary invasion of the interior of the skull and the deep tissues of the neck.

F. C. ORMEROD.

A Research on Blood Groups and Otosclerosis. SILVIO JANNUZZI. (*Archivio Italiano di Otologia*, August 1929, p. 499.)

The author has investigated a number of families in which there were several cases of deafness, of an apparently transmitted type, with the signs of clinical otosclerosis. The deaf members of the families, together with many others, were tested for their blood groupings. It was found in these families that all the deaf members of one family, who could be tested, were of the same blood group, and in five families tested there was no exception to this. Some members of normal hearing were in this group, but, of course, other groups were represented in each family.

Of the five families recorded the deaf members belonged to No. III. group in three, to No. II. group in one and No. IV. group in the last family. The author says that this research shows that otosclerosis tends to follow the laws of heredity; he does not suggest that it has any connection with any particular blood group.

F. C. ORMEROD.

On the Indications for Opening the Mastoid Process in Cases of Acute Middle-Ear Suppuration, with Special Reference to the Question of Early Operation. LUDWIG HAYMANN. (*Münch. Med. Wochenschrift*, Nr. 23, Jahr. 76, S. 947.)

The following conclusions are arrived at:—

(1) Operation in the first fourteen days is seldom necessary.

(2) Those symptoms which the advocates of early operation consider indicative of same do not usually call for an antrotomy at the start of an acute otitis media.

(3) Whilst early operation is not in itself dangerous, it is no guarantee in itself that late complications will not arise.

(4) By the practical application of his views the author has cured 98.2 per cent. of the cases operated on by him in the course of seventeen years (784 cases).

(5) Whilst admitting that this percentage was obtained in a given place and climate, the author does not consider that the

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course of acute otitis media in different times and places would render the generalisation of the procedure he advocates impossible.

(6) He therefore considers his procedure to be correct, and is only prepared to alter his views regarding the necessity and expediency of early operation, when, with the latter procedure and an equally large material, better results than his are obtained. J. B. HORGAN.

New Method of Curing Progressive Deafness resulting from Chronic Tubal Stenosis. K. KUNE. (*Münch. Med. Wochenschrift*, Nr. 21, Jahr. 76, S. 877.)

The indication for the treatment described is in cases of deafness of high degree in consequence of a persistent tubal obstruction which cannot be removed by the usual therapeutic means.

The method advocated consists in making an artificial perforation of the tympanic membrane, as near to the annulus as possible, in the posterior inferior quadrant. The site of perforation is first treated for some minutes with 20 per cent. carbolic acid solution, after which it is rendered anæsthetic with cocaine-adrenalin paste. The perforation is made with a round hollow surgical needle, the point of which is filed to an angle of 45°. The outer end of this needle is connected by a thin rubber tube to a rubber ball by which means the membrane is ballooned out after perforation. In this way adhesions are broken down, and the normal mobility of the membrane and of the contents of the tympanic cavity is said to be re-established. The edges of the perforation are immediately cauterised with chromic acid.

A lengthy control of the perforation is necessary to prevent closure.

Injury to the jugular bulb is cited as a possible complication, but the author asserts that an abnormally placed bulb can be foretold by the bluish tint of the membrane.

It is claimed that by a restoration of middle-ear function an appreciable improvement in hearing can be obtained in suitable cases.

The article is illustrated. J. B. HORGAN.

Experiences with Brojosan in Cases of Otosclerosis. CARL L. NOACK. (*Münch. Med. Wochenschrift*, Nr. 14, Jahr. 76, S. 580.)

For two years the writer has used brojosan tablets (Troponwerke, Dinklage & Co., Köln-Mulheim) in diseases of the inner ear and otosclerosis with tinnitus. It is an organic combination of bromine and iodine, which he considers suitable for the control of tinnitus in cases of otosclerosis, dispensed in such a form as to be readily utilised

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by patients. From practical experience Noack considers that if success is to be attained the preparation should be taken for from five to six weeks (two tablets three times daily), sodium chloride being at the same time, as far as possible, excluded from the dietary.

J. B. HORGAN.

An X-ray Study of the Development of the Mastoid Process Cells after Otitis Media in the First Year of Life. KNICK and WITTE. (*Zent. f. Hals-, Nasen-, und Ohrenheilkunde*, 1928, xiii, 246.)

The paper opens with a discussion of the three principal types of mastoid process and their corresponding air spaces, considered from the point of view of possible functional value, such as improvement of hearing capacity, protection against sudden alteration of atmospheric pressures, diminution of weight of the skull bone, and lastly, their possible relations to an established suppuration. The authors then discuss the development of the cell-system, with special reference to the teachings of Wittmaack. As is well known, he describes three developmental periods:—

1. The development of the recessus epitympanicus and antrum, and the spread of the tubal epithelium into the middle-ear space filled with gelatinous embryonic tissue.
2. Development of pneumatic cells of the tympanum, recess, and antrum, by absorption of bone and the formation of lacunæ.
3. The spread of the pneumatic cells in later life by a process of growth in the cell nests and at the periphery.

The regular process of pneumatisation depends on the undisturbed relation of bone and mucous membrane; any damage to mucous membrane will result in a disturbance of pneumatisation.

Such mucous membrane disturbances are produced by the otitis of infancy, the so-called "suckling-otitis." Such an otitis may be either slow and symptomless, or acute. As a result of the hyperplastic mucous membrane changes there may be disturbance in the progress of normal pneumatisation. The degree of interference with pneumatisation corresponds with the intensity and time-occurrence of the inflammation. Early sclerosis is not the result of a chronic otitis media; on the contrary, a chronic otitis media is the result of the sclerosed mastoid produced by the early hyperplastic change in the mucous membrane. The acute form of "suckling-otitis" is always due to bacterial infection, and is accompanied by changes, fibrotic in nature, of the subepithelial layers. The arrest of pneumatisation in the earliest stage of life is associated with a very small antrum and a complete deficiency of pneumatic cells; arrest at a later period is associated with a much

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larger antrum. Where the mucous membrane changes are principally hyperplastic the diploetic type is found; where hyperplastic and fibrotic changes co-exist there is a mixed type.

The authors point out that, in the majority of specimens that have been submitted for examination, clinical evidence of preceding otitis media in the first year of life has not been established. They have examined 25 cases in which it was clinically established that the patients had suffered from "suckling-otitis" in the years 1905-1907, 1909-1910, 1913-1914. According to Wittmaack in the majority of these cases there should have been an atrophic change, in the others a hyperplastic change; thus, there should have been abnormalities in pneumatisation detectable by the Röntgenological examination. In only a small number of these cases could any arrest of the process of pneumatisation be detected. On this evidence it cannot be accepted that the damage to mucous membrane produced by a "suckling-otitis" necessarily causes an arrest of pneumatisation. It is quite possible that these differences are individual characters; as a rule, as Wagner has pointed out, in light and softer-boned skulls the mastoid cells are abundant and well developed, and that the thicker and harder the skull, the scantier and smaller are the mastoid cells.

F. W. Watkyn-Thomas.

Some Remarks on Deafness of Focal Infective Origin. G. W. Mackenzie. (*Zent. f. Hals-, Nasen-, und Ohrenheilkunde*, 1929, Vol. xiv., p. 262.)

The author believes that focal infection is eight times more frequent than syphilis as a cause of nerve deafness, and that it is a more frequent cause of progressive deafness than all the others together. A characteristic of focal infection in many cases is the unilateral injury of the sound perception apparatus, frequently associated with a diminished excitability of the vestibular apparatus of the same side and corresponding vertigo. In children the actual entry of bacteria into the blood stream must be contrasted with the toxin absorption, largely by lymphatic channels, in the adult.

Mackenzie advises a most comprehensive examination of the nose, throat, and mouth, reinforced by skiagrams of the accessory sinuses and the teeth. If any septic teeth are discovered a bacteriological examination of the root cavity should be made. An examination of the blood should include a differential cell count, a Wassermann reaction, and estimation of the blood sugar. There should also be a complete examination of the urine, especially with regard to the presence of indican or bacteria. The proof of the influence of focal infection is the improvement of hearing and the cessation of vertigo that follow the removal of the septic focus.

F. W. Watkyn-Thomas.

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Abstracts

Clinical Observations on the Bárány Pointing Tests and the Deviation Reaction. M. LURIE. (*Zent. f. Hals-, Nasen-, und Ohrenheilkunde*, 1929, Vol. xiv., pp. 263-264.)

One hundred normal individuals were examined for past-pointing and deviation reaction. In only one case was there any spontaneous past-pointing in the vertical plane. No case of past-pointing in the horizontal plane was observed. In 41 per cent. there was a wavering of between 8 and 12 cm. in the horizontal plane, and in 37 per cent. between 3 and 7 cm. The author regards it as a point of considerable importance that it is rare to encounter any greater range than this.

In the vertical plane 67 per cent. wavered between 2 and 7 cm. and 16 per cent. between 8 to 12. On this account he regards the test in the horizontal plane as being the more important. The deviation reaction failed only in one case in the series of a 100. It was observed at its maximum in the group who wavered from 2 to 4 cm. in the same plane. In these cases it varied between 30 cm. for the right hand after turning to the right, and 60 to 70 cm. for the left hand after left turning. In one case the deviation was 80 cm.

F. W. WATKYN-THOMAS.

The Bárány Symptom-Complex. V. RATNER. (*Zent. f. Hals-, Nasen-, und Ohrenheilkunde*, 1929, Vol. xiv., p. 263.)

Ratner's patient was a girl, aged 21, with bilateral auditory nerve disturbances (tinnitus and acoustic hyperæsthesia), post-aural pain, tenderness over both mastoid apices, abnormalities of the caloric responses on both sides, spontaneous past-pointing, and persistent pyrexia. The author regards this as a lesion of the cerebello-pontine angle with affection of the 5th and 8th cranial nerves. He gives as characters of the Bárány syndrome the bilateral distribution, failure of caloric response, pyrexia, and alterations of past-pointing in the shoulder joint, but not at the wrist.

F. W. WATKYN-THOMAS.

The Surgical Treatment of Acute Suppurative Otitic Leptomeningitis. N. CHRISTIANOV, Russia. (*Zent. f. Hals-, Nasen-, und Ohrenheilkunde*, 1929, Vol. xiv., p. 155.)

The author believes that in spite of all surgical procedures, diffuse acute suppurative otitic meningitis is still nearly always a fatal disease. In his own series of thirty-nine cases in only one was there a cure. This case is described; the treatment consisted of radical operation with free exposure and incision of the dura, and thorough drainage. In this, the successful case, exactly the same treatment was carried out as in the others.

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The author believes that death in these cases is due to an inhibition of the biochemical processes of the brain, which is caused by œdema of the brain substance produced by absorption of the exudate, not by the pressure of the effusion. Thus operations for the relief of pressure, such as puncture of the lateral ventricles, etc., cannot have any success. The radical operation with free drainage of the dura still offers the best chance when meningitis is established, but the author advocates prophylactic measures such as earlier and more extensive radical operation. F. W. WATKYN-THOMAS.

Mobilisation of the Auditory Ossicles as a Method for the Improvement of Hearing. M. ZIRMUNSKI, Russia. (*Zent. f. Hals-, Nasen-, und Ohrenheilkunde*, 1929, Vol. xiv., p. 222.)

For extreme deafness and severe tinnitus produced by adhesive processes in the tympanic cavity following catarrh or suppuration, the author advises artificial perforation of the membrana tympani and mobilisation of the ossicles. His technique for the operation and his indications are essentially the same as those described by Politzer. In the author's opinion, successful results can only be expected in cases where the adhesive process has reached its maximum, and has not progressed for some time. In these cases the cicatricial tissue is poorly supplied with blood vessels and the inflammatory reaction after operation will be correspondingly slight, so that the risk of secondary adhesions is greatly diminished. The author has performed this operation in twenty-one cases with good results; the improvement of hearing and the relief of tinnitus persist after eight months.

F. W. WATKYN-THOMAS.

Further Experience with the Dichloramin Treatment of Mastoid Wounds. RALPH A. FENTON, Portland, Ore. (*Annals of Otology, Rhinology, and Laryngology*, September 1929.)

One of the best of the oily solutions which release chlorine slowly in contact with wound surfaces is dichloramin-T, 2 per cent. dissolved in eucalyptol or chlorcosane. The wound, which by preference is kept widely open, is filled with the oil which is retained in the wound by a lightly inserted fold of narrow oil-soaked gauze packing. The dressing is painless. The dichloramin is used daily for the first week or ten days. Bacteriological examination, the details of which are given, bears out the clinical experience of the author's last eleven years, demonstrating the value of dichloramin. It has a remarkable inhibitory power on bacterial growth. The duration of after treatment is materially shortened by its use. NICOL RANKIN.

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Abstracts

NOSE.

The Pathogeny of Cystic Choanal Polypus. Prof. S. CITELLI. (*Revue de Laryngologie*, 15th August 1929.)

The author regards these formations as due to an inversion of the mucous membrane of the maxillary antrum. The sequence of events is, a localised inflammatory lesion of the antral wall causing localised detachment of the mucous membrane, with subsequent effusion of serous fluid under the mucous membrane causing it to be inverted in the form of a sac. Eventually this is protruded through the ostia into the nasal fossa. It is more usual for the protrusion to occur at the accessory ostium, when the sac is subsequently drawn through the choana into the naso-pharynx. Occasionally it occurs at the natural ostium, and then the sac occupies a position in the anterior part of the fossa. He regards the fact that the mucous membrane at the distal end of the sac is usually thickened as a confirmation of this view, which is also borne out by the histology of the cyst. This explanation of the genesis of cystic nasal polypi was first put forward by him in 1921.

G. WILKINSON.

Lipiodol in the Diagnosis of Stenoses of the Choanæ and Nasopharynx. G. MARTINAUD and P. KAGI. (*Revue de Laryngologie*, February 1928.)

It is often difficult to estimate the thickness of strictures and occlusions in these regions, and their permeability or otherwise. Information on these points is of great value in determining the practicability of operative treatment, and the best method of attack. A useful aid to diagnosis is a skiagram taken after the nasal fossæ have been filled with iodised oil, the head being inclined backwards to allow the liquid to gravitate into the nasopharynx, thus outlining the stricture.

G. WILKINSON.

Some Experiments on the Trophic Rôle of the Spheno-Palatine Ganglion. MOULINGUET and COLLIN. (*Annales des Maladies de l'Oreille, etc.*, March 1929.)

Experimenting upon dogs the writers confirm the results of Chavanne, Jung, and Tagand, in demonstrating the absence of any trophic disturbance of the nasal mucosa or lowering of its resistance to the organisms of ozæna after ablation of the spheno-palatine ganglion.

They formally conclude that this ganglion plays no part in the pathology of ozæna, but that the more reasonable hypothesis attributes the condition to a chronic inflammation of the nasal mucosa by a microbe, specific or non-specific, which determines a neuritis of the sensory fibres of the trigeminal and a reflex irritation of the vaso-motor sympathetic.

L. GRAHAM BROWN.

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LARYNX.

Papilloma of the Larynx. HEINZ DAHMANN. (*Zeitschr. f. Laryngologie, Rhinologie, etc.*, Band 18, October 1929, pp. 383-462, with 33 illustrations and coloured plate.)

The subject of papilloma of the larynx appears to be very much studied in German clinics. Dahmann's lengthy article forms almost the whole contents of the present number of the *Zeitschrift.* It is a very complete survey of the subject with a special emphasis on pathology.

A series of microphotographs shows the similarity which exists between the structure of normal skin and all papilliform growths, viz. warts, papillomata of the tongue, bladder, genitalia, and those forming in the larynx. The author shows that in all these tumours the structure of normal skin is clearly recognisable, if one allows for the exaggerated development and folding of the papillæ. The different layers of the skin, stratum cylindricum, germinativum and granulosum, can be identified in the structure of every larynx papilloma; sometimes there is even an indication of the stratum corneum.

The papillæ of laryngeal growths not only spread outwards, but occasionally also towards the underlying connective tissue or into the mouths of the mucous glands, *e.g.* papillomata have been described where the wall of the trachea was to a great extent eroded, and this occurs quite apart from any malignant changes.

It is very important that sections of these tumours should be cut at right angles to the surface, *i.e.*, through the stalk of the papilloma and through the long axis of the papillæ. If the section is cut horizontally, this may give a false appearance of penetration of epithelial columns and a wrong diagnosis of carcinoma may be made. This effect is demonstrated in successive illustrations. One section shows true papilloma structure; another section, which was taken at right angles by turning the paraffin block in the microtome, shows epithelial processes apparently penetrating into the connective tissue. But, when these processes are examined under the high power, all the layers of normal stratified epithelium are well differentiated. Therefore the pathological report should have been "non-malignant papilloma" and not "epithelioma," which it was in this particular patient.

Then follows a chapter on malignant degeneration of papilloma. This admittedly does occur, and there are some extremely difficult borderline cases. It is again emphasised that the benign character of the epithelial strands is given by their sharp differentiation from the surrounding connective tissue and by the clear definition of the various epithelial layers. Even mitosis can sometimes be seen in the section of a papilloma; this occurs when the growing papilloma invaginates

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neighbouring mucous membrane—the mitotic figure belongs to the normal epithelium. In a malignant tumour the epithelial nests are very irregularly distributed, much smaller islands occur, there is no differentiation into the various layers seen in normal stratified epithelium, and there are numerous mitoses.

The question of transmission of these tumours is discussed in a special chapter. Dahmann describes a series of inoculation experiments in which he used an extract of a laryngeal papilloma. This extract was carefully prepared by grinding and passing through a Berkefeld filter, so as to exclude cell elements and bacteria. All the inoculation experiments with sterile filtrate were negative.

Implantation of actual papilloma substance into a skin area of the same patient was successful on two occasions, and small warts appeared where the papilloma elements had been implanted.

Involution or spontaneous disappearance of the papillomata does occur, but is very rare and should never be counted upon. Many children who are not treated die of attacks of suffocation. Further, it is not justifiable to leave a child with hoarseness which lasts for years, as permanent damage to the voice remains. Also the continued difficulty with speech leads to certain psychic disturbances and to great interference with the education of the child. One instance is quoted where spontaneous involution of the laryngeal growths followed the disappearance of skin warts. On the other hand, Dahmann has observed the opposite; in one of his patients disappearance of warts was followed by increased hoarseness, and repeated operations for removal of laryngeal papillomata became necessary.

The second half of the article is devoted to statistics collected from many sources and to a discussion of all the numerous methods of treatment. Cauterising methods, diathermy and X-ray applications have been described in previous articles (see Abstracts in May 1929). Dahmann is very much opposed to X-ray treatment in view of the many reports of severe damage to the larynx. Other authors, of course, state that they overcome this difficulty by appropriate small dosage.

Radium is also considered unsuitable in the treatment of larynx papilloma. The application of radium to the interior of the larynx must always be preceded by a tracheotomy, and this fact in itself is quite a serious consideration. Several cases are described where too large dosage of radium led to cartilage necrosis and severe stenosis. A post-mortem specimen which shows complete obliteration of the glottis after radium application is illustrated in the article.

The method of choice in the treatment of papilloma of the larynx is always removal of the growths by direct laryngoscopy, even if the operation has to be repeated several times. J. A. KEEN.

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Larynx

"*Precancer*" *of the Larynx*. Prof. C. E. BENJAMINS (Gröningen). (*Revue de Laryngologie*, 31st October 1929.)

There is much difference of opinion as to the actuality of the transformation of papillomatous tumours of the larynx into epitheliomata. Prof. Benjamins is of the opinion that the recent research on the experimental production of cancer in animals by repeated application of tar throws much light on the nature of the precancerous state.

The histological changes observed in the skin of experimented animals are:—

(1) Epithelial hyperplasia, especially of the Malpighian layer.
(2) Alteration of the cells, especially in the Malpighian layer. Amongst the cells are found some much enlarged, with large dark coloured nuclei, the cytoplasm being clear, and strongly acidophile. The cells are surrounded by an empty space, due to retraction of the cytoplasm during hardening.
(3) The basal layer of epithelium remains for the most part regular, but here and there it is replaced by conglomerations of polymorphic cells which are simply projections of the deformed Malpighian layer, but the underlying basement membrane remains unbroken.
(4) The corneous layer is thickened, and keratinisation is irregular, so that in places prolongations are found to pass right to the depth of the Malpighian layer.
(5) The number of cells undergoing mitosis is increased.

The author reports a case, illustrated by an excellent drawing, of tumour of the mid-third of the right vocal cord from a man of 72 who had suffered from hoarseness for a number of years. The hoarseness had lately increased. The tumour was sessile, and covered with epithelium as white as snow. The tumour was removed under local anæsthesia, by means of cutting forceps, guided by direct vision. No recurrence after one year.

Histologically, the tumour exhibited the various signs already enumerated.

The conclusions drawn are as follows:—

(1) All papillomata of the vocal cords in adults should be regarded with suspicion.
(2) Hyperkeratosis, characterised by snow-white surface, is an indication for complete removal of the tumour, usually by laryngofissure, though in some cases removal "per vias naturales" may be employed.
(3) Cases should be kept under observation for several years after removal of the tumour.

G. WILKINSON.

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Abstracts

PHARYNX.

Septic General Conditions originating in the Throat, with Macroscopical and Microscopical Demonstrations. (Chiefly from the point of view of pathogenesis.) W. UFFENORDE, Marburg-Lahn. (*Acta Oto-Laryngologica*, Supplement VII. *The International Congress of Oto-Rhino-Laryngology*, Copenhagen, 30th July to 1st August 1928.)

It is generally believed, but not proved, that the toxins of many general infections enter by way of the lymph-epithelial formations in the throat. Scarlet fever, arthritis, and many of the so-called "rheumatoids" begin almost regularly with an acute inflammation of the throat. Research becomes difficult because the nature of the toxic agents are still unknown to us.

In addition to the acute exanthemata, other affections are traced back to the throat or mouth. There is an inclination to treat these parts as the entrance for general affections, because in them organisms are always present, and the most varying favourable conditions, thermic, chemical, etc., are to be found. It is also reasonable to suppose that under such favourable local conditions inflammations of the mouth and throat can develop along with infections that have entered the body elsewhere. Further, in the presence of general ailments weakening the bodily strength, there is still great difficulty in distinguishing cause and effect.

It is the writer's intention to deal with a definite selection of ailments—generalised septic infections in connection with primary acute and chronic inflammations in the throat.

Angina is the commonest cause of such generalised conditions, though more rarely they develop secondarily to trauma, suppurative processes, tuberculosis, syphilis, and necrosing tumours eroding the blood vessels. Such general conditions have been considered to be more or less hopeless, but the writer believes, after carefully studying their pathogenesis and diagnosis, that some good has resulted, and a number of cures are reported of sepsis secondary to angina.

The study of the tonsil question and its causative importance in general infections has led to this. The view that tonsillitis is an origin of sepsis is now largely recognised.

Pathological and Anatomical.—In inflammations of the throat leading to resultant septic conditions are all possible stages from the serous to the necrotic, and one cannot recognise the controlling influence or decide clinically at the outset whether the condition is the serious or the mild. The liability to inflammation of the tonsils, which is so frequently seen decreases from the ages of 20 to 30, but at this period severe complications are most often met with.

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It is an age when lymphatic elements are diminishing, and connective tissue is increasing at the expense of the parenchyma. In the origin of septic complications past anginas play an important part, as do chronic defects in the tonsils which have followed past inflammations.

Reference is made to the work of Waldapfel and Grossman; on the examination of the freshly removed inflamed tonsil it is found that acute tonsillitis, no matter how it may be classified clinically, affects the whole tonsil tissue. O. Mayer looks upon the crypts of the tonsil as groups of neighbouring appendices (as in the vermiform appendix) in which the retention factor plays an important part.

In the writer's experience acute angina has been caused by manipulation of the tonsil. Relapsing angina cannot be avoided by cutting, suction, cauterising, tonsillectomy or other such part measures. In the causation of general sepsis we must remember inflammation in the rest of the throat and in the tongue, chiefly at the side and centre of its base.

Ludwig's angina is often followed by general sepsis, as are some operations in the mouth, and tooth troubles. Peritonsillitis may be the beginning of severe sepsis and be accompanied by inflammation in the spatium pharyngeum. Also inflammation in the retro-pharyngeal space should be remembered; a possible cause for this may be peritonsillitis with a descent to the mediastinum and general sepsis.

Post-nasal phlegmon has been spoken of as arising about the respiratory tonsil, but an actual peritonsillitis in this area could hardly occur because of the anatomical conditions. Cases of peritonsillitis lingualis have been described.

General Remarks on Sepsis.—Schott Müller's definition is the best: "sepsis is a particular kind of general infection in which pus stimulants find an entrance at some place into the body; they are swept continuously at intervals into the blood stream, spread through the body, and set up subjective and objective morbid phenomena in the organism." There should be a careful distinction between sepsis and bacteræmia. In the latter we have a temporary infiltration with bacteria. These are immediately destroyed. There is no such thing as blood sepsis. Germs do not multiply in the blood till after death. Lexer wishes to get rid of the term sepsis, and instead of the term sepsis, with or without metastasis, he distinguishes between a bacterial and a toxic general infection, and the first of these he divides further into a metastasising and a lasting form.

The writer considers it most important to distinguish between an "entrance gate" and a "sepsis focus."

Pathogenesis of Sepsis after Angina.—It is generally agreed that the palatine tonsil is an important entrance for sepsis, but some deny its

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being a sepsis focus or sepsis development focus (first metastasis). But it must be so when to a tonsillitis there is added a peritonsillar phlegmon. Schott Müller attaches great importance to the part played by staphylococci, and their dangerous nature as sepsis stimulants.

Acute angina is a severe general illness with debility, high fever, pains in the head, limbs and joints, and after it there may follow arthritis, nephritis and endocarditis. Even following tonsillectomy kidney and joint complications are seen, though in a slight form. The condition of the blood and urine in a series of cases of acute angina is discussed. If the usually dependable protection is broken through by an inflammation around the peritonsillar focus, the inflammation spreads and the way is clear for acute general sepsis.

Assuming that the septic process as a rule begins endophlebitically, thrombosis may also occur, but the thrombophlebitis does not necessarily become the sepsis focus in the Schott Müller sense. To strengthen this argument the writer describes a case of sepsis spreading along the cephalic vein in a man's arm, when after resection of a part of the vein no thrombosis was found. The infection had spread periphlebitically. The more acute cases are predominantly lymphangitic. A number of cases are described, and also a number of autopsies. The mode of extension and spread in the neck is discussed. An extension towards the skull is more common than into the mediastinum. The tying of the internal jugular vein below the phlegmon to prevent spreading of sepsis may cause harm.

In inflammation of the tonsils it must be remembered that the throat mucous membrane elsewhere is attacked and may become the starting place of septic infection.

Chronic Sepsis.—The writer asks, Can chronic tonsillitis be termed a sepsis focus or not? He believes that here we have the conditions present requisite to fulfil Schott Müller's definition of a sepsis focus, so that these cases can be considered a mild and rudimentary form of sepsis.

Diagnosis in a Case of Acute Spreading Sepsis presents little difficulty and a general description of the state of affairs in a typical case follows. An X-ray of the neck may be helpful in showing the spread of the infective process, but a skilled investigation of the blood is of extreme importance because of the possible occurrence of acute leucæmic forms, also of angina agranulocytotica and angina monocytotica. These forms are described.

In chronic general sepsis to pass judgment is not easy, it being so difficult to decide upon the condition of the tonsil. One must decide clinically. Not only disease of the kidneys, joints, and heart may be maintained by tonsillitis, but also many general diseases, or rather

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the affected tonsil is assumed to be the cause without accurate proof. It is noteworthy that in many cases after enucleation of the tonsil for chronic tonsillitis without any further acute complications albumen was found in the urine, but only rarely after other nose and throat operations.

Therapy.—In all cases of spreading sepsis after acute angina the sepsis focus must be laid bare and drained. One must consider removing the palatine tonsils, and the sepsis focus must be attacked from without. The deep cleft spaces of the throat are to be opened, and the writer proceeds to describe in detail how the neck is dealt with, when veins are to be tied, and how it is of more importance to drain the spatium pharyngeum than to proceed downwards to the mediastinum (a spread upwards towards the cranium is more common than down to the mediastinum). When to remove the palatine tonsils in these acute or subacute cases, and when to refrain from doing so is discussed.

Treatment of Chronic Sepsis.—Complete enucleation of the tonsil under local anæsthesia is advocated. H. V. FORSTER.

Search for a Latent Primary Tuberculous Focus in the Adenoid Tissue of the Pharynx of Two Hundred Children Operated upon for Adenoid Vegetations or Hypertrophy of the Tonsils. HUBERT, ARNOULD, and BUSSER. (*Annales des Maladies de l'Oreille, etc.*, March 1929.)

This work is based upon the examination of 200 children under the age of 15 years, and free from all clinical manifestations of tuberculous disease, who presented adenoid vegetations or tonsillar hypertrophy. In every case a cuti-reaction was practised a fortnight before operation, and then histological examinations were made of the tonsils and adenoids removed, finally inoculations were made into the guinea-pig.

After describing the technique employed and the results obtained, the writers, whilst expressing no firm opinion, make the following statements:—

Contrary to the results published by other observers, their researches have failed to discover the bacillus of Koch either in the fragments of tonsils or adenoids, or in the specimens removed from the inoculated guinea-pig. Hence it appears that primary tuberculous foci in adenoid vegetations and tonsils must be very rare if every cause of error is truly eliminated. An extensive bibliography is added.

L. GRAHAM BROWN.

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Abstracts

MISCELLANEOUS.

Perkain as a Surface Anæsthetic. C. Hirsch. (*Münch. Med. Wochenschrift*, Nr. 41, Jahr 76, S. 1715.)

Hirsch has dispensed with the use of cocaine since 1924, both in his private practice and also in the conduction of the Throat, Nose, and Ear Department of the Marienhospitals at Stuttgart, which is under his charge. Whilst satisfied with tutokain he has for some time used perkain, with which he is thoroughly satisfied. He finds after extended trial that perkain fulfils all the essential qualities of a local anæsthetic.

For surface anæsthesia he employs a 2 per cent. solution in water or saline solution to which suprarenin is added. A 1 per cent. solution to which ½ per cent. solution of carbolic acid has been added is equally effective.

These 1 per cent. and 2 per cent. perkain-suprarenin solutions have the same surface anæsthetic effect as a 10 to 20 per cent. cocaine-suprarenin solution. The anæsthesia produced by perkain lasts much longer than that produced by cocaine. Not a single case of poisoning was observed when using the 2 per cent. solution in the performance of all the major and minor operations that are usually carried out in a Throat, Nose and Ear Hospital. Psychical disturbances were not observed. There is an absence of the bitter taste experienced with cocaine.

For infiltration anæsthesia Hirsch employs a 1/2000 solution.

J. B. Horgan.

The Practitioner. Special Asthma Number. July 1929.

In this Special Number of the *Practitioner* there are twelve articles on various aspects of asthma written by authorities whose names have come to be associated with these various aspects.

In an Introduction, Sir Humphrey Rolleston gives a general review of the articles. Dr Arthur Hurst writes on "The Pathogenesis and Treatment of Asthma," and sets out the biochemical factors and the influence of the endocrine glands underlying the asthmatic diathesis. The condition of hypersensitiveness is also discussed. In treatment the diathesis must be attacked, and this can be done in two ways: the first is by means of diet, as in Adam's method, and the second, by residence at a height of over 4000 feet, *e.g.* Davos. All reflex exciting causes must be dealt with or avoided. The treatment of status asthmaticus by the continuous adrenalin injection method is described. Sir William Willcox in an article on "Asthma: Its Causation by Occult Sepsis," lays stress on sepsis in the naso-pharynx, tonsils, teeth, alimentary canal and genito-urinary tract as

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much the commonest exciting cause of asthma. Vaccine therapy should not be used until these foci have been eradicated. After this vaccines are often of value. "The Nasal Factor in the Treatment of Asthma" is dealt with by Sir James Dundas-Grant, who urges that particular attention should be paid to the upper and posterior regions of the nose—particularly the septum—in children as well as adults. Some statistics of results in hospital and private cases are given. Professor W. Storm van Leeuwen writing on "Climate Asthma" describes in detail his method of providing an allergen-proof sleeping-room whereby the products of bacteria, moulds, insects, etc., are excluded from the air of the room. About 80 per cent. of his cases became free, or practically free, from asthmatic symptoms after residence in the chamber for about three or four days.

Discussing "The Origin of Spasmodic Asthma," Professor W. E. Dixon maintains that the evidence all points to asthma being a bronchiolar muscular constriction. He controverts the alternative view that swelling of the bronchial mucosa from vascular engorgement causes the obstruction, and he regards the evidence in support of the "allergen" view as not convincing. He maintains that skin reaction tests afford no evidence of anaphylaxis, and that there is nothing specific in them; the skin reaction being due to a local axon reflex. Believing that practically all cases of asthma are due to reflex stimulation of the medulla oblongata, he explains the beneficial effects of cauterising the nasal septum by the destruction of the hypersensitive areas, so that the liability to reflex stimulation of the medulla is obviated. In his article on "Tissue Damage as a Factor in the Asthma Syndrome," Dr John Freeman explains that the site of the reaction in a given case is determined by previous damage and refers the frequency of skin manifestations to cutaneous trauma, and the asthmatic symptoms to diminished resistance of the bronchial tree left by infections, such as whooping-cough and bronchitis, and, in the case of ex-soldiers, by gassing. "How should the Practitioner diagnose and treat Bronchial Asthma?" is the title of a paper by Professor Karl Hansen of Heidelberg. He insists on the usefulness of cutaneous tests for allergens but points out that their value must not be over-estimated. He uses the intradermal method of injection of allergen extracts and describes it in detail. He considers that desensitisation has the best chance of result if a strictly monovalent hypersusceptibility exists. Dr James Adam writes on "Asthma: A Toxic Condition" and restates his well-known views on the subject. While attracted by the "seed" and allergens, he gives a warning about losing sight of the importance of the "soil."

Dr Alexander Francis in an article on "Asthma: a Vasomotor Neurosis," argues that the primary cause of asthma is vasomotor

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instability, and that the hypersensitiveness is only a secondary exciting factor. The vasomotor system can be affected profoundly through the mucous membranes of the body; the author chooses the nasal mucosa because of the ease of access. Dr Frank Coke deals with the "Types of Asthma" and enumerates ten varieties and their treatment. He insists on the close association of nasal polypi and sensitiveness to aspirin. "The Treatment of Asthma in the Adult" is dealt with by Dr André, who outlines the treatment adopted at Mont Dore, France. Finally, Mr J. E. R. McDonagh writes on "The Nature and Treatment of Asthma." He explains the nature of pulmonary shock, and holds that the constriction of the bronchioles is never as great as that which occurs in bronchopneumonia, and that the phenomenon does not play the rôle in asthma generally assigned to it.

The views expressed differ considerably, but the reading of the original articles is stimulating and well repaid. R. R. SIMPSON.

REVIEW OF BOOK

Clinical and Experimental Examinations in Patients suffering from Morbus Menièri, including a Study of the Problem of Bone Conduction. DIDA DEDERDING. (*Acta Oto-Laryngologica*, 1929, Supplementa x., xi., pp. 369.)

The first volume of this work, which was presented as a thesis for the Doctorate of the University of Copenhagen, consists of two sections: A study of the acoustic phenomena presented by 135 patients with Ménière's disease, and some experiments and deductions on bone conduction; the second volume gives full case records of all the patients. The vestibular manifestations are not examined in detail; this will be done by S. H. Mygind in a forthcoming publication.

For the purposes of this work Ménière's disease is defined as "a condition which, so far as the ear is concerned, shows itself by a varying function both of the acoustic and the static part, and with regard to which it has been possible to exclude any specific etiology."

Although the belief that "Ménière's disease" is the expression of an alteration of intralabyrinthine pressure has been put forward by several workers in this field, their suggestions as to the cause of variation have differed widely: "Increased pressure of the perilymph by a rise of pressure in the lateral recess and cerebellopontine angle" (Bárány); "Blockage of the ductus endolymphaticus" (Portmann);

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