# ABSTRACTS

## EAR

*The Third Otosclerosis-Hypothesis of Otto Mayer.* K. WITTMAACK. (*Arch. Ohr-, u.s.w., Heilk.*, May 1932, Band cxxxi., pp. 180-207.)

Professor Wittmaack's article is a critical study of Dr. Mayer's latest theory on otosclerosis. His first theory is said to date back to 1911 and may be called the "Gefässtheorie" because the localisation of the otosclerosis foci was supposed to be related to the distribution of the terminal branches of an end-artery. This theory was abandoned in favour of the Hamartom-theory in which the otosclerosis foci are looked upon as a special form of neoplasm. The Hamartom-theory was also given up and the latest or third theory is called the "*Callus-hypothesis.*" The otosclerotic foci show a superficial resemblance to certain pathological bone changes (osteitis fibrosa, Paget's disease), also to certain stages in the repair of fractures. The otosclerotic focus is supposed to be a kind of callus resulting from spontaneous fractures in the labyrinth capsule which is said to be a very brittle structure. Dr. Mayer has seen these fractures already in 60 series of sections of temporal bones and assumes that they are fairly common.

Wittmaack apparently proves that the fissures described by Mayer are not fractures at all. The "fractures" are said to be mainly artefacts which arise after decalcification during the passage through the alcohol series and afterwards the hardening process in celloidin.

In order to avoid an accusation of simple "Polemik," Professor Wittmaack also gives some constructive criticism. Using sections of the labyrinth which he prepared in the course of a recent experimental study, he clearly demonstrates the histology of fresh and of healing labyrinth fractures. In no instance is there the remotest resemblance between these sections and the so-called "spontaneous fractures" of Mayer.

After reading this long and carefully argued criticism, one cannot help feeling convinced that Mayer's third hypothesis has little to recommend it as a serious contribution to the problem of otosclerosis.

J. A. KEEN.

*The Treatment of Various Forms of Chronic Deafness by High-frequency Sound Waves.* E. A. KOPILOWITSCH and M. A. ZUCKERMANN. (*Arch. Ohr-, u.s.w., Heilk.*, May 1932, Band cxxxi., pp. 208-221.)

Mülwert and Voss have previously described clinical trials with high-frequency sound waves and given their results. The authors of the present article have further developed this method of treatment. They describe the electromagnetic principles which underlie the



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production of such sound waves which are beyond the hearing range (19000-50000 d.v. per second). The treatment ("Bestrahlung") is given through an aural speculum and each sitting lasts from three to ten minutes.

The resulting improvement in the hearing, especially as regards the whispered voice, is very extraordinary in some cases. The best and most lasting results are obtained in chronic suppurative otitis with large perforations in which the suppuration is either arrested or only slightly active. Patients with chronic adhesive catarrh occasionally show a good response, but practically no improvement in hearing is obtainable in otosclerosis cases or after the radical mastoid operation.

J. A. KEEN.

*Some Clinical Observations on Deaf-mutism.* F. CARNEVALE-RICCI. (*Archivio Italiano di Otologia*, June 1932.)

Some 56 cases of deaf-mutism have been carefully investigated. They are divided primarily into pre-natal cases of which there were 29 per cent., and post-natal cases of which there were 55 per cent., in the remaining 16 per cent. of cases it was not certain whether the condition was present at birth or arose later.

In the series of pre-natal cases the family histories show that deaf-mutism has a marked tendency to occur where the parents are consanguineous. An investigation among the Jews of Vienna showed that of marriages with one deaf-mute child 14·7 per cent. of the parents were consanguineous, with two deaf-mute children 22·2 per cent., and with three deaf-mute children 55·5 per cent. were consanguineous. The author found that in 25 per cent. of the pre-natal cases the parents were first cousins, compared with only 4 per cent. in the post-natal cases.

There are many cases in which a definite morbidity in the parents may be held responsible, and the author found in his series that syphilis was present in 12 per cent., tuberculosis in 7 per cent., alcoholism in 4 per cent., and myxœdema in 4 per cent.

Graham Bell found that when both parents were deaf 9·2 per cent. of the children were deaf, but when the parents were both deaf and consanguineous the percentage rose to 45. The author found that in about 20 per cent. of his cases there was deafness in the parents or grandparents.

It has been suggested by Alexander and Fischer that in degenerative processes in intra-uterine life the internal ear is particularly susceptible.

In the post-natal cases it is much easier to identify the causative processes, and in the author's series of cases 65 per cent. were due to meningitis, 15 per cent. to scarlatina, 4 per cent. to inflammatory processes in the auricle, and 2 per cent. each to malaria, measles, and whooping cough.



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There was chronic purulent otitis in 3 per cent., signs of previous acute or chronic suppuration in 9 per cent., and catarrhal otitis media in 31 per cent.

The author has divided his cases according to the number and extent of the residual islands of hearing following Bezold's classification.

He also found that of his pre-natal cases 72 per cent. had residual hearing, but of the post-natal cases only 58 per cent. had such islands.

Examination of the posterior part of the labyrinth showed that in a very large proportion of the pre-natal cases there was response to the rotation test, but in the post-natal cases only in about half the cases. In cases with no residual islands of hearing only about one-third of the cases showed any response to rotation. Romberg's test showed falling in about one-third of the cases and inability to walk along a straight line in about one-quarter.

F. C. ORMEROD.

*The X-ray Diagnosis of Gradenigo's Syndrome.* H. BURGER. (*Acta Oto-Laryngologica*, Vol. xvii., fasc. 4.)

The author has collected from the literature fifteen cases of Gradenigo's syndrome, including two of his own, in all but two of which X-ray examination showed clearly, inflammatory rarefaction of bone in the tip of the petrous bone. The skiagrams of his own two cases, taken after development of the syndrome, show perfectly the loss of shadow at the apex of the bone, and a skiagram of one of the cases, taken some months after healing was complete, shows a normal bony shadow and entire absence of the previous area of absorption.

Sixth nerve paralysis may result, not from inflammation of the petrous apex, but from a diffuse, serous meningitis, and this probably explains the rare cases of contra-lateral paralysis. The sixth is the most vulnerable of the cranial nerves and an otogenous paralysis is possible without Gradenigo's syndrome, and in the absence of disease of the petrous apex.

The X-rays have, however, supplied ample proof that a true Gradenigo's syndrome is at least usually due to bone disease of the tip of the petrous bone, and their value in the diagnosis of the disease can no longer be denied.

THOMAS GUTHRIE.

*Suppuration of the Petrous Pyramid.* HAROLD I. LILLIE and HENRY L. WILLIAMS. (*Archives of Oto-Laryngology*, May 1932, Vol. xv., No. 5.)

Suppuration in the petrous pyramid is responsible for many failures in mastoid operations. Thanks to the work of Eagleton, we are now fully conversant with the symptoms, but opinions vary in regard to the treatment.



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Eagleton advises "unlocking" of the petrous pyramid by removal of the "anterior and posterior buttresses," after radical mastoidectomy. Kopetzky and Almour also perform the radical operation and remove part of the anterior wall of the canal and the root of the zygoma, and approach the petrous apex above the carotid artery and anterior to the cochlea.

The present writers have found that when well-developed air cells are present in the petrous bone, the usual distance relationships are disturbed, and it is possible to drain the petrous cells posteriorly, between the posterior wall of the pyramid and the labyrinth, and anteriorly, between the knee of the carotid artery, the facial nerve and the cochlea, as these structures are well separated by the development of the cells.

Two cases are described in detail, in which it was possible to drain the infected petrous cells while conserving the important structures of the middle ear. DOUGLAS GUTHRIE.

## NOSE AND ACCESSORY SINUSES

### *Nasal Sinusitis and the Eye.* E. WATSON-WILLIAMS. (*Lancet*, 1932, Vol. ii., p. 73.)

The author emphasises the great importance of investigating the nasal sinuses in cases of failing sight, giving six cases: (1) keratitis with latent maxillary sinusitis; (2) retinal degeneration with polysinusitis; (3) recurrent keratitis with latent polysinusitis; (4) recurrent keratitis with chronic tonsillitis and polysinusitis; (5) keratitis with chronic tonsillitis; (6) recurrent keratitis in a child of two with latent antral disease. Three points are emphasised: that there is often no manifest local evidence; that it is difficult to exclude sinusitis on X-ray evidence; and that the eye conditions appear to yield rapidly after treatment of the sinus disease. MACLEOD YEARSLEY.

### *Atrophic Rhinitis.* JOHN A. PRATT. (*Annals of O.R.L.*, March 1932, Vol. xli., No. 1.)

The author presents the following hypothesis: "That atrophic rhinitis is not a disease entity but a syndrome of hypo-endocrinism, in which the adrenals play an active part, and is only one of the many indications of hypo-adrelia."

The underlying cause is a nutritive disturbance, due to endocrine and particularly adrenal hypo-function and leading to atrophy. Suppuration and ozæna when present, are due to a secondary infection. The condition is never found in patients who show an over-activity of



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the endocrine system, but in all cases the basal metabolism is reduced and generally the blood pressure is below 120.

The treatment consists in the use of desiccated adrenal gland (Armour) in doses of 2-grain tablets thrice daily combined, if necessary, with thyroid extract; hydrargyrum protoiodide tablets, grain one-tenth, is also given three times daily to stimulate the action of the endocrine glands. The use of oil and nasal packing is also advocated.

Under this treatment, the author regards the prognosis as good, but, although he states that he has carried it out for fifteen years he unfortunately does not state the number of cases treated.

E. J. GILROY GLASS.

## LARYNX AND TRACHEA

*Cancer of the Larynx.* A. J. TAPIA. (*Zent. f. Hals.*, 1932, Vol. xviii., p. 75.)

The author discusses here some problems connected with this subject, basing his remarks on his very considerable experience. He attributes the greater frequency of the disease in men as compared with women to tobacco smoking, and particularly cigarette smoking with inhalation of the smoke. Of the six women who appear in his statistics, four were smokers. A series of experiments on animals is being conducted under the author's supervision to decide whether the causative factor is nicotine itself or the distillation products of the tobacco leaf.

The author attaches great importance to preoperative microscopic examination of the growth. He always does this in cases requiring the more severe operations, not only to satisfy himself that it is cancer, but also to verify the histological characteristics of the growth, as often the exact operative method adopted will be determined by this. In very early cases also, he never undertakes an operation without biopsy. But he does not guarantee that biopsy will be free from all dangerous results unless the patient is willing to submit to immediate operation. When biopsy is impossible or when the pathological report on the condition is negative, but operation is still clearly indicated on clinical grounds, Tapia recommends biopsy during the operation (exploratory laryngofissure). Then a histological examination of the whole widely excised area of disease is possible. The categorical report of the histologist is invaluable. To avoid error Tapia advises that we should always seek the advice of a pathologist who is expert in the study of these tumours.

From the pathological standpoint Tapia attaches great importance to anaplasia; he regards it as absolutely necessary, for the establishment



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of his diagnosis and for the choice of the right operative method, to estimate the infiltrating or destructive character of the tumour cells.

At present, surgical treatment of cancer of the larynx is the method of choice.

In order to avoid the major mutilating operations Tapia stresses the importance of early diagnosis. For a growth limited to the vocal cord without invasion of the anterior commissure or on the mucous surface of the false cord, he performs laryngofissure. If the cord is fixed and the growth has invaded its entire length, he proceeds according to the age of the patient and the histological structure of the tumour. With young patients, under thirty years old, he performs a hemilaryngectomy; with older patients, laryngofissure. In basal-celled carcinoma, which is much more rare than the squamous-celled, he performs either hemilaryngectomy or laryngofissure combined with endolaryngeal radium treatment. With limited invasion of the glands, he performs hemilaryngectomy. Sub-hyoid pharyngotomy he performs only for strictly limited growths of the epiglottis.

Tapia advises lateral hemilaryngectomy in all cases in which the tumour, after invading a vocal cord, has spread either up or down without reaching the mid-line before or behind.

He describes his operation of anterior hemilaryngectomy. This he performed for the first time in 1929 on a patient, 58 years old, in whom a squamous-celled carcinoma had invaded the anterior commissure and the anterior third of both vocal cords. After a median incision, he made two horizontal transverse incisions, one immediately below the hyoid bone, and the other just under the lower edge of the cricoid, thus forming two rectangular skin flaps. The thyroid and cricoid cartilages and the upper portion of the trachea were cleared by reflection of the prelaryngeal muscles. Next the thyroid cartilage was divided, without damage to the underlying mucosa, by a vertical incision, one on each side, about 2 cm. from the mid-line. The cartilage and underlying laryngeal tissues between these incisions were freed by horizontal incisions above and below and were then removed. The inner edges of the skin flaps were then stitched into the larynx. The wound was kept packed for two to three weeks and then closed by a plastic operation. The author has operated on four cases by this method with good results. He performs laryngectomy if the growth has invaded one-half of the larynx and has spread across the middle line either before or behind; in cases of basal-celled carcinoma in patients under 35 with glandular metastases, however limited it may be; when it extends beyond the vocal cords under the epiglottis; when it starts in the epiglottis and extends widely (whether the vocal cords are invaded or not); and, finally, when it passes the laryngeal wall in spite of the freedom from involvement of the tongue and pharynx.



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Advanced age with a good general condition is no counter-indication for the operation. If the operation is technically possible the author advises it in spite of glandular or perilaryngeal invasion. Clinical experience convinces him that the operation is justifiable if there is any hope, but he does not operate when the growth has invaded neighbouring structures, or when the removal of large hard glands would require division of the great vessels.

Tapia follows the technique of Gluck. Up to October 1929, the author had performed 190 laryngectomies with a 6 per cent. operative mortality and 35 per cent. of recurrences. He uses irradiation when the patient refuses operation, in inoperable cases and inoperable relapses, and as an adjunct to surgical treatment.

F. W. WATKYN-THOMAS.

## PHARYNX AND TONSIL

*Spontaneous Hæmorrhages from the Tonsil Region.* TORSTEN SKOOG. (*Arch. Ohr., u.s.w., Heilk.*, January 1932, Band cxxx., pp. 206-231.)

The most important and serious cases are those in which the hæmorrhage is associated with peritonsillar infections. The author describes several personal cases and gives very full references to the literature on the subject. When the external carotid artery or one of its larger branches, or the internal carotid become eroded by the septic process, a "*spurious aneurysm*" often forms as a first step. Attention is called to the danger of incising large, bluish swellings which have arisen very suddenly in the course of the illness.

When the internal carotid artery is affected, the spurious aneurysm may open into the deeper part of the external auditory meatus or into the Eustachian tube by *pressure erosion.* In these cases a sudden large hæmorrhage or repeated smaller ones may come from the ear canal.

The erosion of the larger arteries of the neck may occur by a direct *extension of the phlegmonous process;* this applies particularly to bleeding from the ascending pharyngeal artery. But the more usual explanation is an extension of the inflammation viâ the *lymphatic system.* A lymph gland in direct contact with a large artery suppurates and erodes the vessel wall. The larger veins do not react in the same way under these conditions; the pressure is low so that they are easily compressed by an inflammatory swelling and the result is a thrombosis rather than a hæmorrhage.

The majority of the rapidly fatal cases, in which a careful post-mortem examination had been done, showed an erosion of the internal carotid artery (26 cases among 29). Lymphatic glands lie in close contact with the stem of the internal carotid artery. This applies to



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a lesser extent to the external carotid and its branches, around which the glands are more scattered and loosely grouped. In spite of this it is probable that the lymphatic type of erosion is also the more usual pathological process, the important branches in this respect being the superior thyroid and lingual arteries.

An analysis is made of 33 cases which recovered: in 10 the external carotid had been tied, in 13 the common carotid artery. In the other 10 only local measures had been used, such as swab pressure or tying a small vessel after tonsillectomy.

It may be difficult to decide whether to tie the external or the common carotid artery. This question is fully discussed. In the author's opinion every patient with a peritonsillar infection showing a spontaneous hæmorrhage from the throat, however slight, should be treated as a case of erosion of one of the larger arteries, as delay may be fatal; he must be admitted to hospital and an external operation must be performed. As a general rule, the author ties the external carotid artery alone. At the same time he places a loose ligature round the common carotid. This ligature is left in position for four to five days, and can be tied at any moment if the necessity arises. The author does not advise a routine ligature of the common carotid, as this is a dangerous operation in itself which frequently leads to cerebral disturbances. The danger is much increased when the patient already suffers from a severe septic infection.

Early operative interference distinctly improves the prognosis, as is clearly shown by the analysis of all the cases collected in the article.

Apart from cases with peritonsillar inflammation, small spontaneous hæmorrhages may occur in connection with superficial ulceration of the tonsils, especially Vincent's angina.

Lastly, a third group of cases which may be called spontaneous tonsillar or pharyngeal hæmorrhages in the true sense. That is to say, there are no local lesions, and a wrong diagnosis of hæmoptysis, epistaxis or hæmatemesis is often made. A case is described of spontaneous bleeding from one tonsil which is explained by the very unsatisfactory diagnosis of *vicarious menstruation*. Purpura and the various anæmias must be excluded. True spontaneous hæmorrhage from the pharynx may occur when *dilated venules* are present, also in *chronic pharyngitis*, especially of the gouty type. J. A. KEEN.

*Basal Metabolism in the Adenoid Child.* DOTT. V. MESOLELLA. (*L'Oto-rino-laringologia Italiano*, March 1932, Anno II., No. 2.)

The author has studied the basal metabolism in 18 cases of adenoid hypertrophy, and in 16 of these it was increased by about one-third. In one case it was normal, and in the final case it was diminished.



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Basal metabolism is least at birth and for about eight days afterwards; it then increases until it reaches its maximum at eighteen months, when growth is most active. There is no noteworthy increase at puberty. The metabolism becomes stationary at the age of twenty, and remains so until senile changes take place.

The author considers that the alteration in the adenoid child's metabolism is linked with endocrine disturbances, most probably hyperfunction of the thyroid and pituitary glands, for such high increases are only met with otherwise in cases of increased activity of these glands.

The author also believes that there is an endocrine change in the pharyngeal tonsil, because of its association with the pituitary system. In the adenoid child he states that there is hyperfunction of the thyroid and pituitary glands and a dysfunction of the tonsil.

F. C. ORMEROD.

## MISCELLANEOUS.

*Five Cases of Ludwig's Angina.* JEAN PIQUET (Lille). (*Les Annales d'Oto-Laryngologie*, February 1932.)

The precise pathological nature of this condition is still unknown. According to some, it belongs to the group of diffuse phlegmons of the cellular tissue; according to others, it is a definite gas gangrene, akin to the condition so frequently met with in the Great War. In the author's experience, it belongs sometimes to one group and sometimes to the other. In three of the reported cases there was a diffuse suprahyoid infection of streptococcal origin; the pus was non-fœtid and there was no dental caries. In these cases he was apparently dealing with a diffuse cellular infection of the type which is sometimes seen in the cellular tissue of the limbs. When the tissues were incised, during the first day or two, the cellular tissue was found to be œdematous and only a little serous fluid was extruded. Later on there were a few drops of non-localised pus associated with some necrosed cellular tissue. At a still later date, rank suppuration had occurred and this had become localised. In the other two cases, there was a condition of gas gangrene of definite dental origin. The author feels that the administration of anti-gangrenous serum has done much to improve the prognosis in these cases. The advisability or otherwise of dental extraction during an acute infection of the tooth socket is discussed. In mild cases of dental infection, the case should be treated conservatively. When, however, there are marked constitutional reactions, if there is much trismus and the cellulitis is advanced and has spread to the floor of the mouth or, in still more severe cases in which there is an osteomyelitis of the jaw, extraction of the tooth becomes imperative.



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In the intermediate cases, between these two extremes, the extent of the dental treatment deserves serious consideration. The surgeon should be guided largely by the degree of fixation of the tooth in its socket: the looser its attachment, the less the risk and the greater the indication for its removal.

All these cases are described with full clinical details.

M. VLASTO.

*Focal Sepsis as a cause of Nephritis.* DR. A. C. ALPORT. (*Lancet*, 1932, Vol. i., p. 1247.)

The author insists upon the importance of tonsillitis as a cause of acute nephritis, even to a percentage of 85. The causative organism is usually streptococcus. Acute nephritis may also follow scarlet fever and diphtheria with throat infection as a prominent symptom. He shows that in the majority of cases of nephritis, well-marked infection of tonsils, antra, teeth, etc., can be demonstrated, particularly in subacute nephritis with much œdema; it is in these patients that early removal of focal sepsis gives the best result. MACLEOD YEARSLEY.

*Allergic and Infectious Conditions of Upper Respiratory Tract in Children. Differential Diagnosis.* MILTON B. COHEN and JACK A. RUDOLPH (Cleveland). (*Journ. Amer. Med. Assoc.*, 3rd October 1931, Vol. xcvii., No. 14.)

Conditions in the upper respiratory tract in children are divided into three classes: allergic, infectious and combined allergic, and infectious. In allergy the attacks are non-contagious, recurrent, with itching, slight constitutional symptoms, a tendency to wheezy respiration and are often related to food and inhaled substances. Infectious attacks are contagious, single, clear up completely and have marked constitutional symptoms. On examination allergic patients have pale glistening œdematous mucous membranes, hyperplastic sinusitis, thin watery mucoid nasal discharge showing eosinophils 10 per cent. or more and, frequently, positive skin tests.

Infectious cases have red mucous membranes and purulent discharge showing polymorphonuclear neutrophils as predominant cells. Allergic cases are benefited by epinephrine and avoidance of allergy. Too much reliance must not be placed on the röntgenograms and skin tests. In sinus disease the cloudiness may vary from time to time. A positive skin test is only a clue and therapeutic tests assist in the final diagnosis.

The article occupies five columns, is illustrated and has a bibliography. ANGUS A. CAMPBELL.



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