

Abstracts

The effect of this kind of ray extends beyond our present range of vision.

Sir JAMES DUNDAS-GRANT said that he wondered whether the time taken by the auditory stimulus to reach the brain could be measured; this was slower in some than in others, and it might be a further aid in deciding in which cases there was nerve-deafness.

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The Diagnostic Significance of Hydrogen-ion Concentration in the Cerebro-Spinal Fluid. K. LÖWY. (*Arch. Ohr-, u.s.w., Heilk.*, 1933, cxxxiv., 180-7.)

It is now accepted that inflamed tissue has a higher hydrogen-ion concentration (greater acidity) than healthy tissue. The author undertook the present research in the hope of discovering an increased acidity in the cerebro-spinal fluid as an early sign of meningitis.

The pH value of normal cerebro-spinal fluid is the same as that of blood (7.35–7.40). The apparatus which is used for determining the pH of cerebro-spinal fluid is described, and the results in twenty-eight patients suffering from various intracranial complications of middle-ear suppuration, are tabulated. The tables also include the cell counts and the Pandey reactions, and the three tests can be compared.

In two patients the cerebro-spinal fluid was tested three days before the clinical onset of suppurative meningitis; these cases showed normal pH values, together with normal cell counts. Dr. Löwy's hopes, therefore, were not realised. Increased pH values occur only when the meningitis is advanced, as shown by a greatly increased cell count.

The cerebro-spinal fluid, like blood, has a great capacity for maintaining the normal pH value ("Pufferung") by neutralising any acid substances which penetrate it or which arise as a result of inflammation.

J. A. KEEN.

Clinical and Experimental Research on the Function of the Salivary Glands after the Radical Mastoid Operation. F. ALTMANN and K. LÖWY. (*Arch. Ohr-, u.s.w., Heilk.*, 1933, cxxxiv., 188-200.)

The secretory fibres of the submaxillary and sublingual glands are found in the chorda tympani, and those of the parotid gland in the

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nervus tympanicus. Previous research has shown that both these nerves may be damaged as a result of chronic middle-ear suppuration or after the radical mastoid operation, and the literature on the subject is reviewed. The nervus tympanicus lies in a comparatively sheltered position on the medial wall of the tympanic cavity. The author decided to limit his investigation to the submaxillary and sublingual glands, and to study only cases in which it could definitely be assumed that one chorda tympani was divided, i.e. cases of radical mastoid operation on one side.

A special test was used which depends on the secretion of iodine ions in the saliva. The reagent was a solution of two parts of a 1 per cent solution of starch, two parts of a 10 per cent solution of sodium nitrite and one part of dilute acetic acid. This acid solution of sodium nitrite converts the ionic iodine into the atomic form. If iodine is present, even in such extreme dilutions as 1 in 20,000, a drop of saliva in contact with the reagent will give a more or less intense blue stain. The intensity of the blue stain also gives a quantitative indication.

2 c.cm. of a 10 per cent solution of sodium iodide are injected intravenously and the test is done at once, as the elimination of iodine begins within a few minutes. The floor of the mouth is mopped dry and is kept dry as far as possible. The openings of the right and left maxillary ducts are then touched alternately with plugs of cotton wool which have been dipped in the reagent, and the time is noted when one or other side first shows a blue stain. In normal subjects the excretion of iodine in the saliva begins after 2-4 minutes and lasts for 30-40 minutes.

Injections of pilocarpine or atropine respectively accelerate or delay the elimination of iodine. This observation is advanced as a proof that the iodine test may be used for a study of the parasympathetic nerve supply of the salivary glands.

The results, as regards interference with the chorda tympani function after the radical mastoid operation (eleven cases), were completely negative. The explanation is that an injury to the chorda tympani only eliminates the preganglionic fibres, while the postganglionic fibres from the submaxillary and sublingual ganglia remain intact. For practical purposes the glands continue to function normally. The function of the divided chorda tympani is taken over by other nerve fibres.

J. A. KEEN.

Considerations on the Problem of Otosclerosis. K. WITTMAACK.
(*Acta Oto-laryngologica*, xviii., fasc. 3.)

This paper, which extends to forty-seven pages and includes a number of illustrations, sets forth in considerable detail the arguments, both theoretical and experimental, in favour of the author's

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well-known hypothesis, namely, that the essence of the pathological process in otosclerosis is to be sought in a local engorgement of the veins within the affected area of bone. That the absorption of bone, which is characteristic of otosclerosis, is due to venous engorgement with greatly increased pressure in the veins, the author believes to be proved beyond doubt by his experiments on fowls as well as by a series of pathological and anatomical findings. He discusses a number of rival hypotheses and the objections which have been raised to his own views, and concludes that his own explanation of the disease is the only one in harmony with the facts.

THOMAS GUTHRIE.

Middle-ear Disease and Differences in the Pupils caused by the Sympathetic Nerves. RUTH WEYL. (*Arch. Ohr-, u.s.w., Heilk.*, 1933, cxxxiv., 217-43.)

In certain animals (cats, rabbits) the pupillo-dilator fibres from the superior cervical ganglion reach the eye by way of the middle-ear cavity, and numerous references to this subject are given. The author also describes the various eye tests which are used for detecting paralysis or irritation of the sympathetic fibres to the pupils, including the reactions with cocaine and adrenalin drops.

With the help of two excellent anatomical diagrams the paths taken by these sympathetic fibres are given, and Dr. Weyl suggests that in man, also, some of the sympathetic fibres go through the tympanic cavity.

The second part of the article is a clinical investigation of this problem. In a series of thirty-five patients, mostly cases of radical mastoid operation, the pupils on the operation side were tested for evidence of sympathetic paralysis (smaller pupil) or of sympathetic stimulation. Six cases were eliminated because there were other possible explanations for differences in the size of the pupils, also two cases with double mastoid operations, leaving twenty-seven cases to be considered. Of these, nine showed marked differences in the pupils of the two sides, another nine showed minimal differences (less than 0.5 mm.) and the rest no difference.

In experimental studies on paralysis of the cervical sympathetic nerve it has generally been found that ptosis of the eye-lid accompanied myosis. But in these cases ptosis with narrowing of the eye-lid fissure had to be left out of account, because slight facial weakness can never be altogether excluded after the radical mastoid operation.

In the author's opinion, the present investigation proves that pupillo-dilator fibres of the cervical sympathetic reach the eye *via* the middle ear.

The fibres in question take a course through the mucous membrane covering the promontory. This particular area of the tympanic cavity may or may not be damaged as a result of the chronic

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suppuration or of the operative procedures. Individual differences in the pupil reactions are, therefore, easily explained.

The dry radical mastoid cavities showed, as a rule, pupil changes indicating sympathetic paralysis, while the moist ones showed changes which suggested an irritation of the dilator fibres.

J. A. KEEN.

Severe Injury to the Spinal Cord following the Intra-spinal Injection of Trypflavin in the treatment of Rhinogenic and Orogenic Meningitis. G. EIGLER and W. GEISLER. (*Arch. Ohr-, u.s.w., Heilk.*, 1933, cxxxiv., 201-16.)

Beck and Behringer in 1932 recommended injections of a 2 per cent solution of Trypflavin into the spinal canal as a useful therapeutic measure in meningitis. The authors describe five cases of meningitis in which they used these injections, also two animal experiments with monkeys. They show conclusively that these intraspinal injections are not harmless, as has been claimed, and they condemn their use. All the cases died and at *post mortem*, certain lesions of the transverse myelitis type were found in the immediate neighbourhood of the injection. These lesions could not be explained as an extension of the meningitis, but must be attributed to the toxic action of the Trypflavin solution.

J. A. KEEN.

Vertigo—with special reference to its Neurology. RUDOLF LEIDER. (*Wiener Klin. Wochenschrift.* Nr. 44. Jahr. 45.)

By vertigo the writer understands a state of emotional movement of a specific character which is always associated with the perception of movement of the body as a whole, of the head alone, or of the surroundings. By an emotional movement he understands a special condition of consciousness which consists of a nuclear phenomenon and about which various other complex components are grouped. The nuclear phenomenon is indefinable and can be appreciated only by one who has experienced it.

The subjective and objective symptoms of the vertiginous complex are described in detail. The veracity of the patient's complaint is, if necessary, proved by the artificial induction of vertigo and asking him to compare the result with the discomfort complained of.

A detailed account is given of the central ramifications and associations of the vestibular nerve and its nucleus. The various intra-cranial lesions which may induce the symptom of vertigo are reviewed. Consideration is given to the various forms of toxic neuritis and other inflammatory and non-suppurative forms of inflammation of the vestibular nerve and its terminal expansions.

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The purely functional derangements of the central nervous system in which vertigo may occur are also mentioned.

In making a differential diagnosis between vertigo due to a central lesion and that of a peripheral or an aural origin, in the absence of obvious aural disease, it is useful to remember that in the former case the perceptions of turning, as apart from other perceptions of movement, are less prominent.

The term "Ménière's disease" should be abandoned and the term vestibular vertigo substituted.

For treatment, Leider relies upon bromides and rest of body and mind. In cases of an angio-spastic nature, intravenous injections of glucose and, in cases of real hypertony, Aderlass and Theobromin may usefully be employed. In cases resulting from hypertension of the spinal fluid, lumbar puncture is indicated. The prophylactic instruction of the patient is important.

J. B. HORGAN.

Constitution and Pneumatisation. W. ALBRECHT and M. SCHWARZ. (*Arch. Ohr-, u.s.w., Heilk.*, Jan., 1933, cxxxiv., 50-60.)

The authors have made an extensive study of the histological structure of the middle-ear mucous membrane in new-born infants and in the foetus (145 specimens). There are great individual differences in the structure of the epithelial cells (activity) and of the underlying layer of fibrous tissue. The authors' view is that these differences can only be explained as inborn variations which would be characteristic for each individual (constitution).

Wittmaack has questioned Albrecht's researches, on the ground that the so-called individual differences in the microscopic structure, particularly of the fibrous tissue cells, are simply *post mortem* changes comparable to those which set in so rapidly in the organ of Corti after death.

The authors reply that the *sensulae* of the inner ear are known to undergo rapid *post mortem* changes, but this does not apply to the cellular elements of fibrous tissue. They also discuss the various methods of preserving and of fixing *post mortem* material.

These fundamental differences of opinion naturally extend into the domain of pneumatisation. Albrecht finds no difficulty in explaining all the different types of mastoid processes on a basis of constitutional variations in the mucous membrane, while Wittmaack's pneumatisation theories have a basis of inflammatory changes in early infancy (hyperplastic otitis). J. A. KEEN.

New Lines of Treatment for Otosclerosis. W. ROSENFELD. (*Arch. Ohr-, u.s.w., Heilk.*, 1933, cxxxiv., 33-49.)

The author has treated a series of cases of otosclerosis by subcutaneous injections of minute doses of adrenalin and by the oral

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administration of calcium, cod-liver oil and small doses of vigantol. Selected cases are reported in detail, with the results of hearing tests, and the results of the treatment are said to be very gratifying. Improvement in hearing and relief of tinnitus took place in approximately 50 per cent.

In the discussion on the pathology of otosclerosis the author brings this disease into line with rickets and osteomalacia. It has been found possible to produce an osteodystrophia of the labyrinth capsule in dogs who have been fed on a diet poor in calcium and without Vitamin D (Weber). These animal experiments are quoted as a support for the adrenalin and cod-liver oil treatment. One of the functions of adrenalin is to help softened bone to fix calcium (Bossi). The relation between the parathyroids and the adrenals and their respective functions in calcium metabolism are also discussed (two pages of references). As regards dosage of adrenalin, Dr. Rosenfeld insists on very small amounts, weekly injections of 1/10 mg. (1-2 minims of 1 in 1,000 solution) over a period of six weeks at the beginning of the treatment.

J. A. KEEN.

Otosclerosis in Diseases with Hyperfunction of the Lymphatic System.

W. DÖDERLEIN. (*Arch. Ohr-, u.s.w., Heilk.*, 1933, cxxxiv., 24-32.)

Otosclerosis cannot be diagnosed with certainty during life. This explains why research has led to so many contradictory observations. To take one instance, some observers have found distinct alterations in the blood calcium level, others have stated that the blood calcium is quite normal in patients with otosclerosis.

The author undertook a research on rather unusual lines. He examined some 200 temporal bones from a collection belonging to a Berlin otological clinic. The specimens which showed undoubted otosclerotic foci, or old foci as well as areas of active otosclerosis, were then selected for a special clinical study. Manassé first described the early stages of otosclerosis, viz., bony areas in the labyrinth capsule which stain dark blue when hæmatoxylin is used, and this author's definition is accepted.

In the series of 200 temporal bones there were five which showed the changes characteristic of active otosclerosis. It may be assumed that in these patients the primary cause of otosclerosis was active up to the time of death, and the clinical histories might be expected to throw some light on the ætiology of this disease.

Of the five cases, three had died of lymphatic leukæmia, one woman had died of chronic tuberculosis, and in the last case death was due to otogenic meningitis and pneumonia, but the *post mortem* examination also showed extensive tuberculosis of the pleura.

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The common pathological factor in leukæmia and tuberculosis is an excessive activity of the lymphatic system.

The author then points out that recent research work (Nietschke) has proved that there is a relation between rickets and an over-active lymphatic system. Further, the bony changes in rickets and osteomalacia, first described by von Recklinghausen, are in many respects similar to the otosclerotic changes in the labyrinth capsule. In this way a link is established between the lymphatic system, bony changes, and otosclerosis.

Wittmaack's theory of the origin of otosclerosis assumes a local factor as a primary cause, viz., a stasis of the venous outflow, but Wittmaack states that a general predisposition must also be present.

The author's findings suggest that this general constitutional factor may perhaps be found in the overactive lymphatic system. This would lead to :

(a) a general predisposition towards changes in the bones, including the labyrinth capsule ;

(b) a venous stasis through pressure of swollen lymphatic glands, and the development of otosclerotic foci in the manner described by Wittmaack.

J. A. KEEN.

Injuries to the Organs of Hearing and Balance caused by Electric Shocks. R. PERWITZSCHKY. (*Arch. Ohr-, u.s.w., Heilk.*, 1933, cxxxiv., 345-54.)

The author analyses twenty-three cases collected from a scattered literature and to these he adds one personally observed instance. Electric currents which can cause an injury to the ear are generally above 200 volts (Starkstrom). Deafness, tinnitus, and vestibular disturbances shown by spontaneous nystagmus may occur immediately after the electric shock or after varying time intervals, up to two years. The question of entrance and exit of the current are considered. This is very often from one hand to the feet, yet one or other cranial nerve nucleus or the ear functions may show an injury ("Fernwirkung"). The problem is a complicated one and not yet properly understood ; it involves the relative resistance of the various body tissues to the passage of an electric current, the state of the skin at the entrance and exit points when the shock occurs, and other considerations.

The deafness in the majority of cases was of an inner ear type and was permanent, as a rule. It is assumed that the lesions occur in the nuclei of the medulla. This has not been proved, as no histological examinations have yet been made in these cases.

J. A. KEEN.

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Traumatic Meningocele of the External Auditory Meatus.

H. ROLLIN. (*Arch. Ohr-, u.s.w., Heilk.*, 1933, cxxxiv., 362-71.)

The description of a rare case of meningocele of the external ear is preceded by a general discussion on the congenital forms of encephaloceles and meningoceles. These malformations are extremely rare in the ear region. According to the author only one case has been described (by Schreyer and Sprenger) in which a congenital encephalocele had protruded into the bony meatus at the junction between the squamous and the petrous portions of the temporal bone.

Post-operative encephaloceles (hernia cerebri) are, of course, comparatively common. Such a prolapse of brain substance will form only :

(a) if a defect has been made in the skull and the dura has been opened.

(b) if there is increased intracranial pressure.

Meningoceles sometimes follow fractures of the skull and have been described as occurring in various parts of the head (see references), but not in connection with the ear. The author's single case which forms the basis of this article is an instance of a meningocele of the ear which was found four years after fracture of the base of the skull ; the patient was a child, a girl aged 6. The cystic tumour filled the whole external ear canal and was just visible at the entrance of the meatus (see illustration in text). A year before, the " polypus " had been removed by snaring, with subsequent watery discharge and severe febrile reaction. The meningocele, however, formed again, and when the patient was first seen by the author it presented at the meatus and there was a distinct risk of trauma and meningeal infection. Dr. Rollin therefore decided to puncture the cyst and to withdraw fluid. This operation was followed after an interval of five days by symptoms indicating suppurative meningitis. A modified radical mastoid operation was performed, with free exposure of the dura and of the fissure which persisted in the temporal bone and through which the meningocele protruded.

During the convalescence a cerebral hernia formed, but this ultimately receded and the end-result was good. In order to explain the recurrence of the meningocele after the first operation by snaring and the formation later of a cerebral hernia, the author assumes that an encephalitis of a mild type had persisted from the time of the original accident which caused the fractured base. At that time the tympanic membrane ruptured and the brain contents in the immediate neighbourhood of the fissure became infected.

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The Healing of Fractures of the Skull: an X-ray Study. ERNA LINDEMANN. (*Arch. Ohr-, u.s.w., Heilk.*, 1933, cxxxv., 25-40.)

It is well known that fractures of the skull do not heal very readily and that bony union in adults is exceptional. The author discusses the various explanations which have been given and reviews the literature on the subject. Thirty cases treated at Prof. Voss's Clinic in Frankfurt are briefly described and in the text will be found some excellent X-ray photographs showing fracture lines and bony gaps in various parts of the skull. In practically all the cases the fracture-lines can easily be recognised after years, the head injury in one case dating back twenty-five years.

Clinically the fractures are healed and no mobility can be detected, but the union is of a firm fibrous nature. The reason for this comparative deficiency in callus formation has not yet been explained satisfactorily. It is still more difficult to understand why the skull bone regenerates quite readily in some parts, e.g. after extensive resection of bone in mastoid operations. It is, however, noticeable that the newly-formed bone never exceeds the limits of the periosteum.

J. A. KEEN.

NOSE AND ACCESSORY SINUSES

The Mineral-content of the Secretions in Rhinitis and Nasal Sinusitis. R. MITTERMAIER. (*Arch. Ohr-, u.s.w., Heilk.*, 1933, cxxxiv., 147-59.)

In this biochemical study, the following ions have been considered; Na', K', Mg'', Ca'', Cl', SO₄'', PO₄''''. The material was obtained by washing out the nose or sinuses with distilled water. The total dry substance after evaporation was then analysed, the mineral content being determined in relation to the organic matter (albumin, globulin, etc.). To give an instance, human serum contains on an average 9·24 per cent of dry substance, the mineral content of which is always somewhere near 0·9 per cent. The proportion of mineral substance to the total solid matter is therefore 1 : 9·8. In other words, the solid matter of blood serum and of other body secretions contains approximately 10 per cent of mineral matter.

The figures which the author obtained for pathological nasal secretions proved to be very variable and were generally in the direction of an increased mineral content. There were differences according to the type of secretion (whether purulent or mucoid, etc.) and the results are given in a series of tables and curves.

The greatest increase in mineral content was found in the secretions of acute rhinitis. When pus had remained in a sinus for

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some time an increase in the mineral matter took place. When purulent secretion becomes transformed into mucoid secretion this is also accompanied by an increase in the mineral content. Oedematous mucous membrane (polypoid) has a greater mineral content than flat mucous membrane, even if it is acutely inflamed.

J. A. KEEN.

The Functions of the Nasal Accessory Sinuses in Man and Mammals : a Study of Comparative Anatomy. A. ECKERT-MÖBIUS. (*Arch. Ohr-, u.s.w., Heilk.*, 1933, cxxxiv., 287-307.)

There are three main theories on the functions of the accessory sinuses :

I. The accessory air sinuses have developed in order to lessen the weight of the skull ; also in response to certain adjustments needed in the facial skeleton, such as spacing of teeth, insertion of the muscles of mastication, etc.

II. The nasal accessory sinuses improve the sense of smell, especially in sniffing.

III. They help in the warming and moistening of the inspired air.

The first theory finds very little support. It has been calculated that a replacement of the air in the accessory sinuses by cancellous bone would only mean an increase in the weight of the head by 0.93 per cent, a negligible amount for practical purposes. In infants the head is relatively heavier when compared with the body weight. Moreover, up to the age of one year the air sinuses hardly exist, and this is the time when a diminished weight of the head would be so much more needed.

The second theory has also been given up, as the arguments in its favour have been shown to be wrong. Many mammals with a keen sense of smell have no air-sinuses communicating with the olfactory region (see illustrations of dried skulls in text). One cannot make experiments in man to test the keenness of the sense of smell with the sinuses functioning, or after their exclusion. It is a question of small quantitative differences which are quite impossible to establish. Further, the openings of the accessory sinuses generally lie outside the olfactory region.

The author supports the third theory, as he believes that the accessory nasal sinuses help in warming and moistening the inspired air. They develop as outgrowths of the mucous membrane lining the upper respiratory passages and like the nasal cavity they are lined by columnar ciliated epithelium containing goblet cells.

The large and quickly moving mammals with an active respiration (elephant, giraffe, buffalo) have well-developed air sinuses, while the slow moving mammals, especially if they live in a watery medium

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where the inspired air does not require moistening (hippopotamus, walrus), have only rudimentary accessory sinuses or none at all. The best instance is the contrast between the highly pneumatized skull of the brown bear and the skull of the polar bear with practically no air sinuses. These observations can be easily followed with the help of numerous illustrations in the text.

J. A. KEEN.

The Development of the Nasal Septum and its Alterations in Shape during Foetal Life. K. HILLENBRAND. (*Arch. Ohr-, u.s.w., Heilk.*, 1933, cxxxv., 1-24.)

This important research is based on the study of ninety-three specimens of the human foetus of all ages, from two months up to the time of birth. In order to demonstrate malformations and deviations of the nasal septum, the author made serial sections strictly in the frontal plane. Models of the vomer and of the cartilaginous septum at various ages were also made and are illustrated.

In thirty-six specimens among the ninety-three, the septum was absolutely straight and symmetrical, in fifty-seven (61 per cent) there were changes of various types, such as deviations, thickenings on one side, spurs and cystic dilatation of Jacobson's organ (two cases). These asymmetrical changes are due to malformations of the cartilaginous septum in thirty-three cases, and due to maldevelopment of the vomer in the remaining twenty-four cases.

All the deformities which the author describes arose during intra-uterine life and are therefore of true congenital origin. They can hardly be looked upon as malformations, but are more or less physiological. In uniovular twins the pattern of these deformities is astonishingly alike (Leicher), an important argument in favour of a true hereditary origin (*idiotypische Entstehung*), independent of external influences.

J. A. KEEN.

A Case of Rhinolith. LA ROSA and BERTRAN CARRASCAL. (*Revista Espanola y Americana de Laringologia*, May, 1932, 213.)

The rhinolith produced the usual symptoms and also neuralgia in a woman aged 42. It was removed with some difficulty from the left side of the nose with forceps and a hook. A transverse section showed that the nucleus was a cherry stone covered with mucus and concretions of calcium phosphate. The patient denied that she had ever in her life introduced anything into her nostrils, but she had at the age of seven had an attack of diphtheria with nasal regurgitation which explained how the cherry stone had become located in the nose. The case history is followed by a review of the literature of this rare condition.

L. COLLEDGE.

Larynx

LARYNX

The Nerve-Apparatus of the Vocal Muscle. PAUL SUNDER-PLASSMANN (Münster). (*Zeitschrift für Hals-, Nasen- und Ohrenheilkunde*, vol. xxxii., part 4, p. 493.)

In sections of the vocal muscle there were found nerve-endings of the motor type, others of receptor type, and some sympathetic. Microscopical illustrations of these are given. The nerve fibres connected with them were apparently all conveyed in the recurrent laryngeal nerve. This combination suggests the mechanism for very complex and delicate autonomic reflexes, such as would be adapted for the variations necessary for the production of speech and voice.

JAMES DUNDAS-GRANT.

Two Cases of Laryngocele. RAFAEL G. TAPIA. (*Revista Espanola y Americana de Laringologia*, December, 1932, 687.)

The author classifies laryngoceles into *true* laryngoceles which originate in the ventricle of Morgagni from an anomaly, either congenital or acquired, *symptomatic* laryngoceles due to a tumour of the vocal cord or ventricular band causing air to be forced into the ventricle during cough or expiration, and *false* laryngoceles which are median and originate in a defect of calcification in the thyroid cartilage through which coughing forces the laryngeal mucosa and produces an air sac.

True laryngocele is an air sac which reaches from the superior extension of the ventricle of Morgagni up to the hyoid bone and produces a swelling in the base of the glosso-epiglottic fold, or may perforate the thyrohyoid membrane and produce an external swelling in the side of the neck. Larrey described this in 1829 in Egyptians who produced it by the force with which they intoned verses from the Koran during their prayers. The ventricle of Morgagni according to von Hippel shows great variety in its shape and capacity, but these variations are physiological and produce no symptoms, and true laryngocele is probably formed from an infected area of adenoid tissue in the superior extension of the ventricle of Morgagni, where a fistula forms.

True laryngoceles may be divided into three groups: Internal, External and Mixed. In the first the laryngocele, starting from the ventricle, merely raises the ventricular band and sometimes obstructs the entrance to the larynx. The second group rises up into the vallecula and in some cases perforates the thyrohyoid membrane to produce a swelling in the neck. The third group is formed by a combination of the first two and produces a variety of shapes according to the size of the different parts. In the first group the symptoms are chiefly vocal and respiratory, in the second there is a

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swelling in the neck, rising on swallowing and enlarging to the size of an orange or more when the patient blows with the mouth closed. In the mixed group the symptoms of both are combined.

The history of two cases is related. In the first case there was a recurrence after operation because the mixed character was not recognised and the part in the ventricular band did not receive attention. A laryngofissure would be necessary to deal with this. In the second case, which was purely external, the patient was cured by removing the sac through the neck.

The paper is illustrated by anatomical drawings of the pathology and surgery of the condition and has a bibliography.

L. COLLEDGE.

TONSIL AND PHARYNX

Recurrent Peritonsillar Abscesses associated with Focal Infection of an apparently sound Third Molar. ANTONIO LLERENA BENITO. (*Revista Espanola y Americana de Laringologia*, May, 1932, 206.)

A lady of 42 had suffered from peritonsillar abscesses for thirteen years, always on the left side. Five years previously the tonsils had been removed but she continued to have the abscesses every two months. The wisdom tooth on the same side had a gold crown and was apparently healthy. The history showed that thirteen years ago the wisdom tooth had given much trouble and had to be treated by cauterisation and filling and eventually was crowned with gold. Examination showed a fistula behind the wisdom tooth, but a radiogram showed nothing abnormal. After extraction the peritonsillar abscesses ceased to form. The author draws attention to several unusual features of the case.

L. COLLEDGE.

MISCELLANEOUS

Tumours of the Pituitary. J. ERDHEIM, pp. 1-7. B. FLEISCHER, pp. 7-27 and O. KLEINSCHMIDT. (*Zeitschrift für Laryng.*, 1933, xxiv., 28-38.)

These three separate articles may be abstracted together. *Prof. Erdheim* discusses the pathology of pituitary tumours. For practical purposes they all arise in the anterior lobe, which contains five different cell types, and in consequence five different types of tumour are recognised. The anatomical relations between certain cystic tumours and the neighbouring parts of the brain are also described with the help of several illustrations.

Miscellaneous

Dr. Fleischer deals with the clinical aspect, mainly from the standpoint of the ophthalmologist. A series of diagrams showing the changes in the fields of vision are of particular interest. They illustrate the extremely varied and complex effects of compression or stretching of the chiasma and optic tracts. From a practical point of view it should be noted that central scotomata are not infrequent as a result of chiasma compression. These cases may be wrongly diagnosed as retrobulbar neuritis from suppuration in the posterior sinuses.

The anatomical variations in the size and shape of the sella turcica and the thickness of the diaphragma sellae are very great, as shown by a series of illustrations reproduced from the works of Schaeffer and de Schweinitz. There are also great individual differences in the position of the chiasma and in its relation to the circle of Willis. Therefore observations of the fields of vision by themselves do not allow one to draw very definite conclusions as regards differential diagnosis and as regards the direction in which the tumours grow.

The author also deals with the X-ray diagnosis and gives four illustrations of typical alterations in the shape and size of the sella turcica. A large part of the article is an analysis of Cushing's researches.

Dr. Kleinschmidt discusses the surgical treatment of pituitary tumours and he also touches on X-ray treatment which may be tried for the adenomas, but is useless for the gliomas and cystic tumours. X-ray treatment is tedious and uncertain and it must be stopped if there are any signs of an increased intracranial pressure. Some surgeons recommend a decompression operation followed by deep X-ray therapy.

For the cystic tumours and gliomas, operation remains the only method of treatment, and there are now many cases on record of permanent relief of symptoms. The indications for operation must be very carefully studied. Speaking generally, disturbances of internal secretion without pressure symptoms are not a sufficient reason for operation. The two main methods of operation are the trans-sphenoid (through nose) and the intracranial methods, and the author discusses the pros and cons of each.

J. A. KEEN.

Observations on the Value of Cocaine Substitutes. J. KOCH. (*Arch. Ohr-, u.s.w., Heilk.*, 1933, cxxxiv., 75-82.)

Alypin, Psicain and Tutocain apparently are no longer used. Percain will probably also lose ground on account of its comparatively high toxicity, although the extremely good surface anæsthetic action of the 2 per cent solution is recognised. Larocain (5-10 per cent

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solution) and Pantocain (1-2 per cent solution) are novocain derivatives and are strongly recommended as cocaine substitutes. Both require the addition of adrenalin, as they have no vaso-constrictor effect by themselves.

The tests for the efficiency of the various local anæsthetic agents in different concentrations are made on the cornea of rabbits, the duration of the anæsthesia being determined by the reappearance of the corneal reflex.

J. A. KEEN.

Bismuth Stomatitis. DR. HANS SACHER (Königsberg). (*Folia Otolaryngologica*, March, 1933.)

This affection of the mouth has become more common since the introduction of bismuth preparations for the treatment of syphilis. Bismuth salts are given, mostly by intramuscular injection of either solutions or emulsions. The soluble salts are more quickly absorbed, and also more readily excreted. Their therapeutic action is slight, and their toxicity relatively great. On the other hand, the action of the insoluble preparations is more sustained but, if toxic symptoms appear, they may be expected to develop progressively, owing to the continued absorption of the salt from the reservoir deposited in the muscle, and the slowness of its elimination. This takes place through the urine, fæces, bile, saliva, sweat, and milk. The readily recognisable stomatitis is only a sign of a general intoxication, which may manifest itself by constipation, indigestion, vomiting, urticaria and other skin rashes, albuminuria, or even nephritis.

The stomatitis appears as a punctate deposit of fine grains of bismuth sulphide, of a grey or blue-grey colour, along the margin of the gums in the region of the lower incisors, which gradually becomes diffused over the whole of the gums, the buccal mucous membrane, tongue, and floor of the mouth, palate and tonsils. The mucous membrane becomes swollen and tender. Salivation is profuse, and the breath fœtid. Dirty white patches appear, from which the mucous membrane is shed, leaving sharply defined ulcers with a greyish base. On the tonsils and fauces these ulcers resemble those of Vincent's angina, except for the darker colouration. They bleed readily.

G. WILKINSON.

Focal Infection. REIDAR GORDING and HAAKON BJORN-HANSEN. (*Acta Otolaryngologica*, Supplement xvii.)

In the course of their work on the significance of focal infection in rheumatic affections of muscles and joints the authors have investigated the histories and made clinical and hæmatological examinations of 137 patients. Of these, seventy-three were dealt

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with in a previous communication, and in the present paper detailed notes are given of the remaining sixty-four cases.

Investigation of the first series supplied presumptive evidence that focal infection may manifest itself, *inter alia*, by a positive leucocytic blood picture and, in corollary, that an infective blood picture may point to some focal infection as the cause of the existing clinical signs. In order to obtain, if possible, a somewhat surer basis upon which to estimate the significance to be placed upon the leucocytic blood picture in the rheumatic affections, the attempt was made to ascertain in the first place, what symptoms of a general and rheumatic nature may be ascribed to the focal infective lesions in question and, in the second place, how far an affection of focal infective nature may be made manifest by the leucocytic blood picture (hyperleucocytosis or "shift to the left", Arneth) so that this may be used as a diagnostic means of recognising the morbid changes of focal infective origin.

In order to obtain an answer to these questions, the sixty-four patients, with whom this paper is concerned, were treated, after preliminary blood examination, by removal of the tonsillar and dental foci, and were subsequently kept under clinical observation with repeated blood examinations over an average period of three years.

The cases, which were mainly of the subacute type with an average duration of six months, are divided into two groups. The first of these—the "focal infective" group—includes 52 patients (15 males and 37 females) of an average age of 31 years. Of these 52 cases 47 became free of their clinical signs in response to removal of their infective foci. One of them had a normal blood picture before the removal of the foci of infection, while the remaining 46 had shown an infective blood picture. At the conclusion of the treatment, the blood picture in 43 of these 46 cases became normal, while in 3 it continued positive, probably as a result of the pulmonary affections which were proved to be present in these patients.

In the second group—the "acute rheumatic"—which consisted of 12 patients (4 males and 8 females) with an average age of 39 years, are collected those cases in which acute articular rheumatism was regarded as playing a part in the ætiology and as thereby laying its mark on the development and the progress of the disease. In 7 of the 8 patients in this second group who showed regression of their symptoms in response to focal treatment, the blood picture became normal at the end of their treatment, while in the remaining case, with an established affection of the lungs, the blood continued to give the picture of an infection.

In both groups the result of treating the infective focus was as follows: Of 64 patients 55 became symptom-free. Of these 55 there were 6 (2 in the first and 4 in the second group) who relapsed, while

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49 (77 per cent) had no recurrence of their affection ; and at the same time the infective changes in the blood, as also the increased sedimentation reaction where previously present, changed back to normal.

The study of the blood picture in its relation to the clinical findings in these 64 patients has led the authors to believe that they have attained, subject to certain reservations described in detail in the paper, comparatively sure grounds on which to form an opinion upon a hæmatological picture peculiar to the focal infections in question.

As to the nature of the focal infective symptom-complex, it may be assumed to be the result of several co-operating factors. Of these the most important are clearly the infection itself on the one hand, and the host on the other. We have at present no sufficient knowledge as to which of these two factors is to be accorded the greater significance in any particular case, or as to their action on one another.

THOMAS GUTHRIE.

The Treatment of Actinomycosis. A. BREMSER. (*Arch. Ohr-, u.s.w., Heilk.*, 1933, cxxxiv., 94-118.)

The pathology and treatment of actinomycosis and the extensive literature on the subject are fully reviewed in this article. The author considers that deep X-ray therapy, with or without potassium iodide by the mouth, remains the best method of treatment. In support of this view, Dr. Bremser gives the clinical details of eleven personal cases, all of which responded satisfactorily to the X-ray irradiation. The patients were re-examined after periods varying from 1½ to 12 years and had not shown any recurrences.

In other clinics the end-results as regards local recurrences have not been so satisfactory. The author attributes this to insufficient dosage of the X-rays.

J. A. KEEN.

Case of Post-Operative Diphtheritic Meningitis. F. E. FUCHS. (*Monatsschrift für Ohrenheilk.*, March, 1933.)

As, according to the author, accounts of such conditions are restricted to extremely few cases, he has considered the following instance which came under his own treatment worth recording.

A woman of 38 sought relief on September 16th, 1931, for difficulty in nasal respiration, which was found to be due to a left-sided suppurative maxillary sinusitis, with polypoid obstruction of the corresponding nasal passage.

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An intranasal operation was performed the following day, at which the maxillary sinus was opened and the ethmoidal area exenterated in accordance with the usual proceeding adopted at Zagreb.

Except for an especially troublesome hæmorrhage during the operation, there was nothing unusual in its performance. The area treated was packed at the termination of the operation and a dressing laid in the nasal passage. The following day the patient complained of headache and vomited frequently. Temperature 37·2 to 37·6. Pulse 96. Opisthotonos. Kernig positive.

September 19th, 1931. Dressing removed from the nose only. Temperature 38 to 38·7.

September 21st, 1931. Temperature 37 to 38·9. Headache. Drowsiness. Removal of remainder of dressings from the nose. Lumbar puncture. Fluid under raised pressure. Slightly cloudy. Culture on blood agar revealed a growth of bacilli of the diphtheria group.

September 22nd to 29th, 1931. Temperature 36·2 to 39·1. Daily lumbar puncture during this period but only one of these (that taken on the 24th) showed the presence of Diphtheria Bacilli.

Microscopic examination of a swab taken from the nose on the same date revealed only the presence of Saprophytes and no growth on culture. On the other hand the Diphtheria Bacilli were found on a swab taken from the throat.

September 29th, 1931. Diphtheria antitoxin given and similar injection was repeated on October 6th.

The patient was discharged convalescent with a negative report on the swab taken from the throat on October 28th.

The author discusses the possible routes of infection—draws attention to the fact that, whereas a swab taken from the nose was negative, a swab taken from the throat was positive, and considers that the meningeal infection was definitely a post-operative development.

It was also worthy of note that the patient was stated to have suffered already from diphtheria during childhood.

ALEX. R. TWEEDIE.

Cervical Rheumatism as a cause of Vertigo. PROFESSOR C. JIMENEZ-DIAZ. (*Revista Espanola y Americana de Laringologia*, December, 1932, 697.)

The author draws attention to some obscure cases of vertigo associated with a rheumatic condition of the muscles of the neck. It has been proved that stimulation of the skin of the neck can produce the same effects as stimulation of the labyrinth. Cold water applied to the neck below the left ear can produce nystagmus.

Letter to the Editor

The experimental facts are related briefly, but the author wishes to draw attention to the clinical fact that there are cases of vertigo which can be explained only as manifestations of cervical rheumatism and either yield to appropriate treatment or else are a prolonged source of irremediable symptoms, until these cease spontaneously with the passage of time. The paper is long and provides striking evidence that it is well founded.

L. COLLEDGE.

LETTER TO THE EDITOR

TO THE EDITOR,

The Journal of Laryngology and Otology.

DEAR SIR,—I was interested to read Mr. Alexander Tweedie's report of a case of Melanotic Sarcoma of the Nose in the June issue of the *Journal of Laryngology and Otology* and I thought you might like to have the following report of a case which was under my care. The following is her after-history: Fifteen months after the first operation she developed a melanotic growth of the septum of the same side, and I stripped the mucous membrane of the septum away with the diathermy knife as far as the posterior border. She remained free from symptoms until May, 1932, when she developed a recurrence in the ethmoid. I inserted six radium needles round the growth (1,000 mg.h.) which then entirely disappeared. I have since heard from her doctor that she died in December of the same year after a short illness lasting one week, in which there was marked jaundice and, I presume, secondary deposits in the liver. She would appear to have lived for about four years and ten months from the onset of her symptoms and for two years and ten months after operation. This seems to be the general expectation of life in a number of these cases. Her doctor reported there was no evidence of local recurrence as far as he could say.

Yours very truly,

E. G. COLLINS.

17 Ness Bank,
Inverness.