ABSTRACTS

EAR

On the Factors Determining the course of Acute Otitis. TORSTEN SKOOG. (*Acta Oto-Laryngologica*, Vol. xvii., Fasc. 1-2.)

The course of an inflammatory process in the middle ear varies greatly. The bacteriology of the disease, the individual's predisposition and the important bearing of the anatomical structure in which the inflammatory process develops, all need careful attention.

In an attempt to discover the part played by the infected subject's own power of resistance to the pathogenic bacteria in the development of acute otitis, the author subjected the acute ear cases treated at the Ear, Nose and Throat Clinic of Lund to a series of resistance tests, following a method which coincides in its essentials with that described by Ruge-Philipp.

Before giving an account of this investigation, however, he touches upon the modern view of the prognostic value of the three factors in the acute types of otitis.

(1) *The Prognostic Importance of the Bacterial Species.*—Taken as a whole there are three groups of bacteria said to produce acute otitis :

Streptococcus pyogenes, about 60%.
Pneumococcus mucosus, about 15-20%.
Pneumococci of other types, about 5-10%.

The remaining 10-15% comprise diverse varieties.

The scarcity of reports upon the presence of various strains of staphylococci is noted, and the writer points out that perhaps in past reports the hæmolytic group of staphylococci have been grouped with the hæmolytic streptococci.

Pneumococcus mucosus infections are more frequent in later life, sixth to seventh decades, and in this variety the modern view presumes a doubtful prognosis on the bacteriological findings alone.

(2) *The Prognostic Significance of the Type of Pneumatisation and the Character of the Mucous Membrane.*—Considerable attention is paid to the work of Wittmaack on the process of pneumatisation in the middle-ear cleft and the developmental changes in the mucosa of the tympanic cavity. After a considerable discussion of the subject the author concludes that " in the different types of pneumatisation we have factors of decisive importance for the course of an inflammatory middle-ear process, but also in judging their influence on the outcome we must view them against the background of the pathogenic organisms."

(3) *On Disposition.*—Here are included the influence of environment (ecological factors of Ludovici) and also the genetic or inborn factors.

In the determination of resistance the author pays particular attention to the method of Ruge modified by Philipp. The Ruge-Philipp resistance determination, first used in gynæcology, takes into account both the bacterial virulence and the body's defensive powers.

" The procedure is as follows : A fixed quantity of the patient's defibrinated blood is mixed with a fixed amount of bacterial emulsion from the same source, the mixture being then kept in a thermostat at 37° C. At definite intervals (after three and six hours) cultures are made from this blood-bacteria mixture on agar plates and the number of colonies counted. In some cases a marked arrest of the growth, in others a vigorous increase in the bacterial content is observed, depending on varying inter-relations between the virulence of the bacteria and the inhibitory factors in the patient's blood.

" By this method, Ruge and Philipp found definite guiding points for the prognosis and therapy of septic complaints in the field of gynæcology, in which the experiments were made."

Author's Investigations.—He describes in detail his methods in carrying out the Ruge-Philipp resistance test. It is important that pus should be taken direct from the foci of infection and that pure cultures of bacteria should not be used. Controls against the blood of a normal healthy individual are required.

The writer's object was to correlate the resistance-determination of the Ruge-Philipp test with his clinical observations in acute middle-ear infections. To include a consideration of the anatomical factors, helping to determine the course of the disease, X-ray pictures were taken which gave information concerning pneumatisation of the mastoid process and pathological bone changes and, possibly, mucous membrane changes.

All the cases are briefly but clearly described in two groups of uncomplicated cases and cases with complications, and in addition details in tabular form are given. A summary is not given in the usual form but the writer sets out in bold type towards the end of his article certain conclusions having a broad and practical significance.

H. V. FORSTER.

Meningitis in Oto-rhinology. W. P. EAGLETON. (*Les Annales d'Oto-Laryngologie,* September, 1932.)

The statistical material on which this article is based is as follows : 367 cases of suppurative meningitis of which 212 were operated upon. Of these latter cases, 144 died and 68 recovered (32 per cent). There were 104 *post mortems.* All patients were

operated upon soon after their admission except when they were *in extremis* or when they presented that blue colouration which in the opinion of the author is due to multiple cortical hæmorrhages. Successful treatment must depend on treating the affected area before the infection has become generalised. Indications as to the type of surgical treatment are based on (1) History of the case. (2) Neurological examination. (3) Cytological and bacteriological examinations of the cerebrospinal fluid. (4) Radiology of the mastoids or of the accessory sinuses. A brief account is given of the more important diagnostic points in the localisation of the seat of infection as a guide to the surgical treatment. The surgical treatment of the meningitis differs according to whether it is due to direct invasion of the sub-arachnoid space or to invasion *viâ* the blood stream. In the former case, localised meningitis is accessible to surgery in the following regions: (*a*) In the region of the saccus endolymphaticus. (*b*) In the extension of the arachnoid space into the internal auditory meatus. (*c*) In the subdural space of the middle fossa. (*d*) Bulbar meningitis of the cisterna pontis. (*e*) In the subdural space of the anterior fossa. (*f*) In the cisterna basalis.

The operative treatment of these different forms of meningitis is discussed in detail. Stress is laid on the danger of massive puncture removal of cerebrospinal fluid owing to the risk of producing hæmorrhage from the cortical veins with consequent spread of infection.

The remainder of this important paper is devoted to meningitis resulting from the infection of the sphenoidal sinuses. The pathology and clinical evolution of the acute and sub-acute forms of meningitis arising from this source are discussed in detail. Of particular interest are those cases of pneumococcal infection of the sphenoid which produce septic infarcts in the temporal bone. Organisms are cultured from the blood, and owing to the presence of aural symptoms the case is erroneously diagnosed as one of primary otogenous infection. The usual history in such a case is that of a patient who, having contracted an ordinary cold, complains of more pain over the forehead than is usually the case. The interpretation reasonably put on these cases is "an infection of the sinuses". The pain is not, however, over the frontal sinus region, but above it. There have been one or two attacks of vomiting and there is considerable prostration. Influenza is the usual diagnosis. This is the first stage of a thrombophlebitis of the veins of the mucous membrane of the sphenoid. The next stage is a spontaneous discharge from the ear. There may or may not be any aural pain. But even if there is, it is never the violent pain associated with an acute otitis. This spontaneous rupture is the first sign of septic infarction of the veins of the temporal

bone. The reason why there is no pain is that the infection has travelled through the petro-squamosal suture, and has produced a septic thrombosis of the smaller vessels of the middle ear, causing the death of the tissues. In many cases, owing to the persistence of the pain, the temperature, and the discharge, a paracentesis is carried out and in some cases a mastoid operation is performed.

M. VLASTO.

The Cause of Otosclerosis. LOUIS K. GUGGENHEIM. (*Annals of O.R.L.*, Vol. XLI, Nos. 3 and 4, 1932.)

The capsule of the labyrinth is developed from a condensed mesenchyme which becomes differentiated on the one hand into fibre " nucleus " and fibre-bone ; on the other, into precartilage, and then into cartilage and bone. Cartilage elements persist in certain localities, after ossification is completed. Certain lower vertebrates of to-day possess otic capsules without windows and with only a utriculus and canals. Phylogenetically there was probably a period when the oval window, round window, cochlea and sacculus had not evolved. In certain individuals there exists a transmitted regressive trait which leads to a secondary embryonic mesenchymal activity with invasion of cartilage and then bone, and resulting in a wild proliferation of mesenchyme, a differentiation into fibroblastic tissue and finally fibre-bone. The oval window with the footplate derived from the capsule and non-existent in certain lower vertebrates is obliterated ; the footplate returns to the tissue whence it was derived. In the same way, but less frequently, the round window, internal auditory meatus and canal region may show the effect of the secondary mesenchymal activity.

The fact that otosclerosis is usually bilateral with identical involvement speaks for heredity and emphasises the importance of the morphology of the predilection site. In certain lower vertebrates the two ears are essentially one organ, the utriculus of one being connected with that of the other by means of canals above and below the brain (possibly evolved from the lateral-line organs which are joined by transverse canals).

The *fossula ante fenestram*, in which otosclerosis often begins, is a vestigial structure which may show cartilage throughout life and is therefore predisposed to mesenchymal invasion. The primary involvement being of a vestigial structure suggests its regressive character. The homologue of the fossula is the canalis fenestræ ovalis of the frog.

The question may arise as to why the secondary mesenchymal activity in otosclerosis results in the formation of fibre-bone and not cartilage, the capsular structure of the lowest vertebrates.

The answer is that otosclerosis begins after ossification is completed or nearly completed; at a time when differentiation into cartilage is no longer ontogenetically possible. The formation, in man, of cartilage "nucleus" occurs in the capsule before the eighth week and never by subsequent dystrophy.

AUTHOR'S SUMMARY.

LARYNX

Diagnosis and Treatment of Malignant Conditions of the Laryngo-Pharynx. HENRY BOYLAN ORTON. (*Jour. A.M.A.*, January 23rd, 1932.)

In all malignant conditions early diagnosis is of the utmost importance. In a patient over forty years of age any abnormal sensation persistently felt in the same part of the throat should arouse suspicion of malignancy. When a patient complains of pain, difficulty in swallowing and huskiness, a thorough examination should be made. This examination should include X-ray, direct laryngoscopy, œsophagoscopy and biopsy. The best methods of approach to cancer in the region of the pharynx are made either by the lateral transthyroid pharyngotomy (Trotter) or by anterior translingual pharyngotomy.

After reviewing the Trotter method the author describes the translingual route: Following a preliminary tracheotomy, a median incision is made from the lower lip to the tip of the thyroid cartilage. By means of a Gigli saw the mandible is divided in the median line. The tongue is then divided back to the epiglottis and the growth removed with as much healthy tissue as necessary.

The writer has used this method in fifteen cases with an immediate operative mortality of four. At the present time, out of five survivors, one has lived over two years and one other has a recurrence.

ANGUS A. CAMPBELL.

Diverticulum of the Epiglottic Valleculae. CARL GOLDMARK and THOMAS SCHOLZ. (*Jour. A.M.A.*, June 4th, 1932.)

Two cases are reported in some detail. Both patients were over 60 years of age, and it is suggested that the condition may have been the result of the loss of the elasticity of the epiglottis. Clinically they were characterised by feeling of a lump in the throat after eating, discomfort on swallowing, occasional regurgitation of foul material, swelling in the neck and local tenderness. Fluoroscopic examination revealed an enlargement of the pre-epiglottic space persisting for several hours and unusual spastic contractions of the epiglottic region. No therapeutic suggestions are offered although frequent gargling with plain water after meals is helpful.

ANGUS A. CAMBPELL.

Abstracts

Selection of Treatment for Carcinoma of the Larynx. GORDON B. NEW, and ELEANOR FLETCHER (Rochester, Minn.). (*Jour. A.M.A.*, November 19th, 1932.)

The microscopic grading of carcinoma is a valuable aid in determining, not only the best treatment, but also the prognosis in any given case. Various sections were made from a hundred different specimens taken at laryngectomy to determine the microscopic extension of different grades of carcinoma. In low grade carcinoma the extension was not found further than 5 mm. from the apparent margin of the growth, but in the highly malignant type there was an extension up to 15 mm. The average extension of all grades was 5·5.

No ill effects were seen from biopsy without trauma, but the writer feels that if a positive diagnosis is made the treatment should follow immediately.

Patients with operable carcinoma whose physical condition does not prohibit surgical intervention are placed in one of seven groups. (1) In low grade carcinoma of the epiglottis and aryepiglottic fold, suspension and removal with diathermy is sufficient. (2) Early carcinomas involving the anterior two-thirds of the vocal cord without fixation may be dealt with by thyrotomy, surgical removal and destroying the base with diathermy. (3) Cases in which the growth is fixed in the anterior portion of one cord or in the anterior commissure are dealt with by thyrotomy and removal of the growth together with the cartilage. (4) Laryngectomy should be done for highly malignant lesions when the incision cannot be made far enough around the growth to insure its complete removal. It should also be done for lesions of low grade malignancy that are too extensive for laryngofissure. (5) Pharyngotomy is advised for growths in the supra-glottic region that cannot be dealt with by suspension and diathermy. (6) Removal of the glands of the neck offers the patient a good chance if the lesion is of low grade malignancy and the glands are hard and shotty. (7) X-ray and radium are used in conjunction with surgical measures and have a definite palliative value in highly malignant and in inoperable cases.

Operation followed by Röntgen rays or radium offers the best method of combating the disease. In a select group of forty-one cases in which thyrotomy was done the percentage of recurrence was only thirteen in from three to six years. Of the one hundred laryngectomy patients fifty-two are alive and well after a period of from three to six years; 65 per cent of those graded "three" are alive; 71 per cent of "grade two" are alive but all of "grade four" are dead.

The article occupies eight columns, is freely illustrated and has a bibliography. AUGUS A. CAMPBELL.

Larynx

The Infant Larynx. GABRIEL TUCKER (Philadelphia). (*Jour. A.M.A.*, December 3rd, 1932.)

The infant larynx is of special interest because its abnormalities can be determined only by direct examination. In the normal infant the larynx is situated at the level of the fourth cervical vertebra. It gradually descends during development until in adult life it reaches the sixth cervical vertebra. The entrance is from behind forwards and downwards. With the descent of the larynx the epiglottis assumes a more nearly vertical position. The epiglottis is narrow and shows a tendency to fold longitudinally. The glottis is relatively small, the antero-posterior measurements being from 7 to 9 mm., with the sub-glottic larynx (cricoid) 5 to 7 mm. The tracheal diameter is several mm. greater than the sub-glottic larynx. To bronchoscopists the sub-glottic diameter is the most important measurement in the larynx. The Matthieu forceps with a scale on the handle have been found useful in measuring the length and breadth of the glottis, the antero-posterior diameter and the width of the arytenoids posteriorly. The symptoms requiring direct examination are aphonia, croupy cough, dyspnœa, wheezing and indrawing of the suprasternal notch. Conditions which have been found to be responsible for these symptoms are congenital stridor, exaggerated infantile type of larynx, papilloma, congenital webs, flaccid epiglottis, foreign body, diphtheria, enlarged thymus and perilaryngeal disease. When possible Röntgen study of the neck should precede the examination. In bronchoscopic examination a tracheotomy set and oxygen tank should be in readiness. In emergencies a tracheotomy may be done leisurely with a bronchoscope *in situ*. Tracheotomy conserves the laryngeal structure better than intubation.

The article occupies seven columns, is illustrated and has a bibliography.

ANGUS A. CAMPBELL.

Röntgenotherapy of Malignant Neoplasms of the Pharynx and Larynx. MAURICE LENZ (New York). (*Jour. A.M.A.*, November 26th, 1932.)

After reviewing the anatomy of the parts and the histology of malignant growths found in their area, the writer describes his method of Röntgenotherapy in inoperable malignant growths of the nose, mouth, pharynx and larynx. The method is a modification of that perfected by Coutard of the Curie Institute in Paris.

The sites of the primary disease and of the regional metastases are exposed to a series of daily Röntgen treatments, by irradiation through two or more areas on each side of the neck, for from two to four weeks. The dosage is increased to the maximum that can be tolerated by the normal tissues adjacent to the tumour. The

effects of the irradiation in most cases are rapid diminution of pain, shrinkage of the tumour mass, lessening of fœtor oris, diminution of bleeding and increased function of the affected part. Considerable systemic reaction is noted which lasts for from two to four weeks, and forcing up of the fluid intake is necessary to prevent dehydration. There is always a danger of aspiration pneumonia. If the first series of treatments is unsuccessful, repetition is hazardous and a second series nearly always fails.

Of thirty-three patients treated during the past three years twenty-six were either not benefited or were only temporarily improved, and the malignant process became active again in less than a year. Seven others have remained free from clinical evidences of the disease for from six to thirty months. The writer feels the results are encouraging and that the method merits further trial.

The article occupies eleven columns, is illustrated and has a bibliography.

ANGUS A. CAMPBELL.

The Influence of Benign Goitre on the Larynx. JOS. CISLER. (*O.L. Slavica*, Vol. iv., F. 2-3, 1932.)

During the past ten years, the author has examined the larynx in a series of 647 cases of benign goitre, and now reports his results. Recurrent palsy was seen in ten cases, of which two were bilateral. In two cases the paralysis was complete, and in the others partial. In all cases the gland was hard.

One case of œdema in the larynx, due to vascular obstruction, is reported, " In a woman suffering from a large parenchymato-colloidal goitre, the right wall of the larynx was found to be turgescent every morning and on the right ventricle there was a prominent prolapse of the sacculus laryngis, of œdematous appearance. During each forenoon this œdema ventriculi disappeared, and at noon the laryngoscopic picture was almost normal. It is evident that the cause of this disturbance was of circulatory character, although with the abundance of lymphatic commissures and with the negative experimental proof, it seems to be impossible. We explain this fact by the suggestion that an abnormal position of the body during sleep produced the disturbance. After strumectomy, this sign disappeared."

Mechanical deviation or compression of the larynx was found in sixty-seven cases. This may be either direct or due to a pull transmitted from the trachea. Where the larynx is rotated (about the vertical axis) in unilateral goitre the rotation is generally towards the enlarged lobe (13 out of 20 cases). Such rotation of the larynx may give the impression of paralysis of the vocal cord, and very careful examination will be necessary to exclude this.

Miscellaneous

Cases of compression include one in which the hyoid bone was pushed laterally to such an extent that the greater horn appeared as a hard prominence in the pharynx. In one case the lower part of the thyroid cartilage was forced inwards, while in a third, the right sinus pyriformis was obliterated, along with part of the right hypopharynx.

E. J. GILROY GLASS.

MISCELLANEOUS

Severe Stomatitis, Conjunctivitis, Rhinitis and Bronchitis accompanied by Allergic Diathesis. HANS GEORG SCHOLTZ. (*Münch. Med. Wochenschrift*, Nr. 23, Jahr 78.)

This is an account of a very severe case of stomatitis with involvement of the ocular, nasal and bronchial mucosa as well as of the skin, occurring in a child with allergic susceptibility. The disease was interpreted as an allergic reaction because the affection occurred for the third time within a few years, because a local eosinophilia was demonstrated as well as an eosinophilia of the blood, and also because the localisation of the disease and the character of the inflammation corresponded with that found in cases of allergic reaction.

The sensitising agent was apparently the hæmolytic streptococcus. Two photogravures accompany this article.

J. B. HORGAN.

Effect of Air Filtration in Hay Fever and Pollen Asthma. B. Z. RAPPORT, TELL NELSON and W. H. WELKER (Chicago). (*Jour. A.M.A.*, May 28th, 1932, Vol. 98, No. 22.)

After reviewing the work of van Leeuwen and Cohen, the writers describe their experiments on air filtration. Each filter unit contains six forms with approximately 6 square feet of filter surface. The edges of the form rest upon a felt-covered frame on top of the compartment in which is placed a fan to propel the air from the outside into the room. The filter material is of a cellulose type resembling ordinary filter paper but with a larger porosity. The filters used are 10-ply and double sheets. The filter material was changed daily and pollen counts were made both inside and outside the room. The filtration was approximately 98 per cent perfect. The experimental room contained 7,500 cubic feet and had eight beds. One hundred and five patients were studied in groups of eight, each group being observed for one week. The hay fever patients were admitted into the ward at 8 p.m. and permitted to leave at 10 a.m. Those with asthma were kept in the room for the

whole period of observation. The patients in this study were classified into three groups: 1, uncomplicated hay fever cases; 2, combined hay fever and asthma; and 3, pollen asthma. It was found that air filtration will relieve symptoms of hay fever and is useful in those cases not benefited by the usual methods of treatment. Cases of pollen asthma respond very slowly and only partial relief was obtained after seven days in the ward, although all asthmatic patients were decidedly more comfortable in filtered air. Recurrence of symptoms was prompt on re-exposure to pollen. Considerable discomfort from heat and humidity was experienced but, by improving the air filters and adding cooling devices, further relief is expected.

ANGUS A. CAMPBELL.

Xanthoma Multiplex. WILLIAM P. FINNEY, HAMILTON MONTGOMERY, GORDON B. NEW (Rochester, Minn.). (*Jour. A.M.A.*, September 24th, 1932.)

In neither of the two cases reported was there any chronic disease affecting lipoid metabolism, nor was there any chemical abnormality demonstrable in the blood. In case one, the yellowish elevated areas were present on the mucous membranes of the palate, epiglottis and posterior pharyngeal wall. There was a naso-pharyngeal stricture together with so much constriction of the glottis that a tracheotomy was necessary. At the tracheotomy operation xanthoma plaques were seen in the trachea. In case two, the mucous membrane of the mouth, tongue, palate, larynx and upper part of the trachea were involved. No kind of treatment was helpful.

ANGUS A. CAMPBELL.

Allergy and Infection. Practical Value of Cytological Examination of the Nasal Smear in Differential Diagnosis. I. S. KAHN and B. F. STOUT. (*Jour. A.M.A.*, October 29th, 1932.)

Out of a total of a hundred and fifty-four cases studied, a hundred and thirty-nine were nasal allergy, and of these a hundred and ten had active hay fever. The patients employed a small cellophane handkerchief, and used it only when a natural spontaneous desire to evacuate the nasal secretions arose. The handkerchief was placed in a sealed jar and examined within a few hours. Thin smears were made, dried, fixed by heat and stained with a Wright stain as for a differential blood count. From examinations made, the authors feel that a positive eosinophilic nasal smear of from 10 to 90 per cent is almost invariably diagnostic of allergic rhinitis, and that a positive smear of 4 per cent or over is highly suggestive. The presence of abundant non-eosinophilic polymorphonuclear leucocytes is practically diagnostic of infection. Allergic and

infectious rhinitis and sinusitis may exist at the same or alternate periods in the same individual. A single negative report does not exclude an allergic condition.

ANGUS A. CAMPBELL.

The Streptococcal Theory of Scarlet Fever aud the Treatment of those suffering from this disease as well as carriers of the infection by topical applications of Yatren. FRIEDRICH E. KOOCH. (*Münch. Med. Wochenschrift*, Nr. 23, Jahr 79.)

Most of the objections that have been advanced against the streptococcal theory of scarlet fever are not conclusive, and important relative questions remain unanswered. The inconsistencies which have resulted from the experimental production of the disease may be explained by the different dispositions of the subjects. According to his inherited or acquired immunity the infection will show itself as scarlet fever, a simple angina, or will be abortive. By the institution of adequate methods of examination it has been possible to demonstrate the presence of streptococci in 100 per cent of cases of scarlet fever while they were demonstrable in only 5 per cent of healthy subjects. Treatment must in the first instance be directed against hæmolytic streptococci.

Streptococcal and scarlet fever anginas are very favourably influenced by the insufflation of Yatren. The rhinitis of scarlet fever is likewise amenable to intranasal lavage with a 2 per cent solution of Yatren. By this means the convalescent from scarlet fever can be rendered free from streptococci in, on an average, six to ten days. This success is attributed to marked increase in the secretion produced and to an increase in its anti-bactericidal properties.

J. B. HORGAN.

A Rapid and more accurate method of determining the Pollen Content of the Air. WILLIAM W. DUKE (Kansas City). (*Jour. A.M.A.*, November 12th, 1932.)

The author has designed a blower which blows air against a greasy slide at a rate of approximately forty miles per hour. The greasy slide is exposed at an angle of forty-five degrees for a period of five minutes and then examined with a microscope. The blower is protected from the wind and must not be exposed to pollen showers blown up from the floor. The blower method of analysis eliminates the wind factor, it is more accurate than the gravity method and the air can be analysed quickly on a given day in many different places.

The article is illustrated and has two tables.

ANGUS A. CAMPBELL.