raise the outer end without letting the inner end shift. The inner tube can then in most cases be pushed still further up the Eustachian tube.

Temporal and Zygomatic Abscess in Chronic Middle-Ear Suppuration—ARTHUR CHEATLE, C.B.E., F.R.C.S.—During the last year, two cases very similar in character have been under my care at King's College Hospital. Both were in female patients who had had a chronic discharge from the left ear for many years.

A large fluctuating swelling was present in front and above the auricle with surrounding œdema which in one case spread to the eyelids and cheek; the mastoid region was only slightly œdematous. The superior and postero-superior deep meatal walls were greatly swollen, almost blocking the passage. At operation a large amount of offensive pus was evacuated, but no carious opening could be found in the surface of the bone; the bone was found to be of the acellular type with a very thick and dense outer antral wall. The antrum contained pus, granulation tissue and cholesteatoma under considerable tension. There was extensive erosion of the outer attic and postero-superior deep meatal walls and it was evident that the pus had tracked along the meatal roof between the soft meatus and the bone to reach the zygomatic and temporal regions.

This is a distinct but uncommon type of complication of chronic middle-ear suppuration.

SOCIETY OF GERMAN LARYNGO-OTOLOGISTS.

Hamburg, May 1926.

(*Zeitschrift für Hals-, Nasen-, und Ohrenheilkunde*, Band xv., Heft 1-4.)

Abstracted by Sir JAMES DUNDAS-GRANT, K.B.E., M.D., F.R.C.S.

DISCUSSION ON THE PATHOLOGICAL AND CLINICAL ASPECTS OF TUBERCULOSIS OF THE UPPER AIR PASSAGES.

The Pathological Anatomy of Tuberculosis of the Upper Air Passages—MANASSE (Würzburg).—The introduction to the discussion of Tuberculosis of the Upper Air Passages at the Annual Meeting of the Society of German Laryngo-Rhino-Otologists forms a valuable monograph on the subject. It contains a statement of the recognised description revised in the light of original researches into the naked-eye and microscopical data, of which admirable illustrations are lavishly presented. Manasse rejects the more recent classifications of the various processes, such as "productive" and "exudative," and adopts the old-established grouping into Infiltration,

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Ulceration, Perichondritis and Growths. Under infiltration he includes œdema which may be "coarse-meshed" or "fine-meshed." Ulcerations in the tuberculous larynx are only with the greatest rarity non-tuberculous and these he considers to be etiologically, if not anatomically, tuberculous. Breaking down of the cartilage may occur without detachment of the perichondrium, disease of which is sufficient to interfere with the nutrition. Tuberculomata are microscopically divisible into fibro-tuberculomata and granulo-tuberculomata. The former are generally pedunculated and grow either in the interarytenoid space or on the ventricular band. The pachydermic growths can often only be recognised as tuberculous by microscopical examination which should always be carried out when removal has been called for. Among the most interesting secondary changes are those in the muscles, especially in the *musculus vocalis* in which degenerative processes may take place even when at some distance from the primary tuberculous focus in the larynx.

As to the manifestations in the different parts of the upper air-passages they vary noticeably. In the nose, tuberculosis is not very common, but it occasionally takes the form of a tumour both in lupus and in clinical tuberculosis. There is an excellent picture of tuberculosis of the pharynx and tongue. Tubercle is stated to be found by microscopical examination in the tonsils in the great majority of cases of pulmonary tuberculosis. Occasionally a granulo-tuberculoma is found in the nasopharynx and tuberculous foci with some frequency in the hypertrophied pharyngeal tonsil. The first development of tuberculosis in the larynx shows itself most frequently in the interarytenoid space, then (?) in the epiglottis, but very frequently on the vocal cords and sometimes the ventricular band. The ventricles are relatively often the seat of tuberculous infiltration, sometimes quite isolated, and the so-called prolapse of the ventricle is found generally to contain beautifully recognisable tubercle.

Lupus is distinguished by its clinical rather than its anatomical characters and is an attenuated form of tuberculosis.

Clinical Aspects of Tuberculosis of the Upper Air Passages—BLUMENFELD (Wiesbaden).—Blumenfeld finds the newest interest centring in the advance in the study of immunity and the introduction of radiotherapy. Loss of equilibrium between the infection and the "immunity-biological" resistance leads to further extension of tuberculosis in the organism. He quotes with approval Schade's view that tissue-acidosis is an important symptom of inflammation and that the tubercle bacillus (in cultures) is greatly influenced by the fluctuation in the H-ion concentration in its soil. A rise in tissue-acidosis may be brought about by "mixed" infection which at the same time makes the position *quâ* tuberculosis still worse.

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The forms assumed by tuberculosis of the upper air passages may be grouped as: 1. Tuberculous Infiltration, 2. Exstructive Tuberculosis-outgrowths, 3. Destructive Tuberculosis, 4. Tuberculous Tumours, 5. Tuberculous Perichondritis and Periostitis, 6. Lupus, 7. Secondary Œdema.

Statistics vary as to the relative frequency of laryngeal involvement in pulmonary tuberculosis and also as to the increase or decrease in its incidence, St Clair Thomson finding a decrease of from 23.96 per cent. to 14.9 in a recent decade, Schrœder an increase from 14.48 to 18.40. Tuberculin tests indicate simply the reactive power of the organism in general. There appears to be no reliable pre-tuberculous sign such as weakness of voice. Unilaterality is not of itself diagnostic.

The various modes of treatment are shortly reviewed. No special form of diet makes much difference. Climatic conditions vary in their effect in different cases, altitude being no panacea. Apart from its being indicated for the sake of the general condition and the lungs, altitude is rather contra-indicated when there is dryness of the mucous membranes or progressive tuberculous ulceration in the larynx. Artificial pneumothorax and thoracoplasty are often indirectly beneficial. In regard to specific tuberculin treatment, the method of Deyke and Much with "Partialantigens" (supplied by Kulle & Co., Biberich) is the least dangerous. Among other better known chemical caustics Blumenfeld recommends, especially in the nose, Dianol III, a combination of lactic acid and glycerine. Operative resection of removable parts, such as the inferior turbinated body, is advisable. For the relief of pain in the larynx, alcohol injection of the superior laryngeal nerve increases in favour. Diathermy is especially indicated in tuberculosis of the nose and of the tongue. It is apt to give rise to suffocative œdema if used inside the larynx. Radiation with short waves (about 297 $\mu\mu$) increases the immunity reactive power of the organism and, with Strandberg, Blumenfeld thinks this is the main factor in the good results claimed by Wessely for the local light-treatment. He holds that whatever form of radiotherapy is practised the other general and local methods are indispensable.

Leucocyte Blood-picture and Sedimentation in Relation to the Treatment of Laryngeal Tuberculosis—Vogel (Berlin). —The consideration of these two tests is recommended as a guide to the probability of healthy reaction to the various methods of treatment.

Tuberculosis of Regional Lymphatic Glands in Carcinoma of the Larynx, Pharynx and Tongue — Leicher (Frankfurt-a.-M.).—Cases showing this combination indicate that the discovery of tuberculosis in the gland does not exclude cancer in the throat. In one case there was in the pyriform fossa tuberculosis as well as carcinoma.

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The Application of Phototherapeutics in Laryngeal Tuberculosis—CEMACH (Vienna).—Cemach holds a middle view between those who, like Strandberg, trust to general light-radiation and those, like Wessely, who believe in the local. He combines the local radiation with all general means. He considers natural sunlight, which is so valuable in tuberculosis of joints, harmful in that of the larynx, and artificial sunlight to be the method of choice. Arc-light is no better than the quartz-light, and very much dearer. The intensity must be moderate and well under the erythema-dose. Blue-light has an analgesic action and is, therefore, most effective in cases of dysphagia.

A New Form of Cautery for Laryngeal Tuberculosis—KRASZNIG (Graz).—A special cupric action is obtained by means of the ordinary platinum point with a fine copper spiral round it. In an area of 2 to 3 mm. round the cautery puncture minute atoms of the metal are revealed on microscopical section. Krasznig finds the anæsthetic action better than that of the simple platinum cautery.

DISCUSSION.

WESSELY (Vienna) insisted on the great value of local radiation. General radiation, if intensive, could give rise to pyrexia, focal reactions in the lungs and even hæmoptysis.

FINDER (Berlin) held that the percentage incidence of laryngeal involvement, as shewn by statistics, varied enormously according to the class of patients from which the statistics were drawn.

ZANGE warned against X-ray treatment in people with weakened powers of general resistance, although in other cases with carefully modified dosage, good results were obtained.

BLEGVAD (Copenhagen) denied that light-therapeutists neglected the general condition of the patient. They worked hand-in-hand with the physicians. He attributed the greatest benefit to the silence-treatment but allowed a voiceless whisper.

STRANDBERG saw no necessity for intralaryngeal light-treatment and doubted if its action was in reality local. For local effect the light should fall perpendicularly on the spot to be treated.

KOBRAK dwelt on the possibility of accidental irritation as shown in the post-traumatic fresh dissemination in a case of Petzal's. He found several unfavourable cases much improved by quite small doses of Röntgen rays (10 to 12 per cent. h.e.d.).

VON D. HÜTTEN favoured the artificial immobilisation of the affected half of the larynx by recurrent-nerve blocking induced by alcohol injection and had seen no detrimental effect on the lungs or the general condition result from it. BRÜGGEMANN and LÖBELL also supported this. LEICHSENRING, who first devised it, argued on its behalf that there was with it no sensory paralysis, the superior laryngeal nerve not being involved. He insisted that the alcohol should not be in stronger solution than 50 per cent.

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BLUMENFELD, in opposing it, stated that Leichsenring's results in Breslau were not encouraging.

In response to Körner's advocacy of tracheotomy, BLUMENFELD said the results of tracheotomy in laryngeal tuberculosis were in the majority of cases catastrophic.

In regard to tuberculin, MÜHLENKAMP advised its use in the diagnosis between simple catarrhal and tuberculous laryngitis by Ponndorf's method. If at the next consultation after the injection the patient said he felt better the case was tuberculous, otherwise it was catarrhal.

CEMACH considered tuberculin treatment more efficacious than was generally supposed, but it must depend on the condition of the lungs rather than of the larynx. He preferred tuberculo-mucin (which with a satisfactory general action produced only a moderate focal reaction) to the "partigens" of Deyke and Much recommended by Blumenfeld.

Cemach considered the results of local light-treatment quite convincing.

ABSTRACTS

THE EAR.

A Contribution to the Pathology of Otosclerosis. Professor Karl Grünberg, Bonn. (*Zeitschrift für Laryngologie, Rhinologie, etc.* Bd. 15, November 1926, pp. 78-80.)

Quite accidentally the author discovered a small focus of otosclerosis in the bone of the promontory near the round window; this was in a temporal bone which was being sectioned to investigate a chronic tuberculous middle-ear suppuration. Apart from a slight erosion over the facial canal, the bony and membranous labyrinth showed no inflammatory changes.

One peculiar feature was noted in addition to the focus of otosclerosis; in the bony semicircular canals, particularly the posterior one, there were certain bulgings which tended to narrow their lumen. The author looks upon these thickenings as a congenital abnormality. Other writers (O. Mayer) have pointed out their occurrence and their association with otosclerosis. This might lend support to the theory that otosclerosis also has a congenital origin, and that it arises from the development of certain embryonic remnants in the labyrinth capsule. J. KEEN.

Unilateral Deafness following Radiotherapy. J. MOELLER. (*Archives Internationales de Laryngologie*, November 1926.)

The possible deleterious effect of radium emanations on healthy tissues is well known. The interest of the present case lies in the fact that radio-active treatment was applied to the left side of the

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