agreed with the observation of the President that it was not necessary to remove the whole of the anterior wall of the frontal sinus so long as all parts of the cavity could be thoroughly explored. In this case he had done so because the extent of the sinus could not be seen through a smaller opening. Having thoroughly removed the lining membrane, his plan was to pass the largest possible drainage-tube from the floor of the sinus through the fronto-nasal canal, leaving the end projecting a little beyond the nostril, so as to prevent any risk of reinfection of the healing sinus by shutting it off from the nose.

Abstracts.

LARYNX.

Avellis, G. (Frankfort).—*The Shape of the Ventricles in the Singer's Larynx.* "Arch. f. Laryngol.," vol. xviii, No. 3.

The writer has for some years observed that in singers the ventricles of the larynx are remarkably wide. It is only after the breaking of the voice that this is to be found. When the larynx is lowered the orifice is seen to be larger. He quotes Zuckerkandl's and Killian's observations on the larynges of great singers to the effect that the crico-thyreo-arytenoid muscles (including in this term the lateral crico-arytenoid, the superior and inferior thyreo-arytenoid, and thyreo-epiglottidean and ventricular muscles) were found (*post mortem*) exceptionally differentiated and strongly developed. Zuckerkandl believes that these can put the ventricle into a state of greater tension and therefore better adapted for vibration. (Some writers on vocalisation have over-estimated the value of the ventricular bands; perhaps some of us have under-estimated it.)

Dundas Grant.

EAR.

Bryant (New York).—*Operation for Recurrent Middle-ear Suppuration and Mastoiditis.* New York Otol. Soc. "Arch. of Otol.," vol. xxxv, No. 2.

The mastoid process and cells were removed and the posterior wall of the osseous auditory canal down to the annulus. The superior wall was also removed, opening the epitympanic space, but leaving the attachment of the membrane and ossicles intact. The hearing afterwards, as tested by the watch, was nearly perfect. (A case subjected to a similarly limited operation with satisfactory result was shown before the Otological Society of the United Kingdom, vol. iv, p. 22.) *Dundas Grant.*

Knapp, A. (New York).—*Infective Sinus Thrombosis: the Varieties of General Infection and Treatment.* "Arch. of Otol.," vol. xxxv, No. 3.

The two main forms of systemic infection are described—namely one with metastases, known as pyæmia and characterised by severe rigors and

oscillations of temperature, the other without metastases (bacteriæmia and toxinæmia), having a steadily high temperature, marked prostration, and inactivity of the wound. Practically all severe infections starting from the temporal bone are transmitted by the venous sinuses (excepting, possibly, some in children). In treatment, if at the operation we find periphlebitis of the sigmoid sinus, which has caused no symptoms or remittent fever and rigors, one is justified in not attacking the sinus. Subsequent treatment varies mainly according as the symptoms of general infection are severe or not, only in the former case ligature of the jugular being indicated. A good analysis is made of the local conditions likely to be found and their influence on treatment. The author points out the disadvantages of ligature of the jugular vein (very much as has been done in the paper on the subject in the JOURN. OF LARYNGOL., RHINOL., AND OTOL., September, 1905, D. G.), pleading also for the preservation of the facial vein He considers the infusion of a physiological salt solution as the most potent agent to counteract the general infection.

Dundas Grant.

Kopetsky (New York).—*Acute Purulent Otitis and Mastoiditis treated by means of Artificially-induced Hyperæmia, according to the Method of Bier, with Report of Cases.* "Arch. of Otol.," vol. xxxv, No. 4.

A light rubber bandage is fastened round the neck so as to produce a slight cyanosis of the face and warmth of the affected part as tested by the touch. It is retained *in situ* for twenty-four hours, then, after an interval of two hours, is replaced. Patients with arterio-sclerosis, kidney, or heart disease are ineligible. A series of cases of acute suppurative otitis with mastoid symptoms is described, in which recovery took place with considerable rapidity without any operation beyond paracentesis. It should be used early and not by persons who are incapable of recognising the supervention of conditions requiring major operation.

Dundas Grant.

Bezold (Munich).—*The Functional Examination of the Hearing with Tuning-forks in Menolateral Deafness, with Deductions on Bone-conduction and the Function of the Sound-conducting Apparatus.* "Arch. of Otol.," vol. xxxv, No. 3; German edition, vol. xlv, 1903.

The supposed hearing of an ear without a labyrinth is nothing but the reflection of the hearing of the other healthy or partially defective ear, brought about by the impossibility of excluding the healthy ear during the examination. This reflex is confined to the upper part of the tone range, and extends from the one-accented octave up to the highest limit of audition. Gaps in the hearing of the better ear are reproduced in the graphic chart of hearing of the labyrinthless ear. He considers it quite possible for sound to be conducted through the meatus of the defective ear to the labyrinth of the opposite one. He reminds us that the conducting apparatus is specially for the conveyance of deep tones and is not required for high ones. *Dundas Grant.*

Zimmermann (Dresden).—*Incorrect Deductions from Experiments with Tuning-forks on the Function of the so-called Sound-conducting Apparatus.* "Arch. of Otol.," vol. xxxv, No. 3; German edition, vol. xlv, 1903.

This author believes that if Bezold had used deep-toned organ pipes instead of tuning-forks his results would have been different, and con-

siders that he erroneously compared feeble deep tones with strong high ones. He reiterates his opinion that the ossicular chain is not a sound-conductor for deep tones, but an accommodative apparatus.

Dundas Grant.

Barr, J. Stoddart (Glasgow).—*Two Cases of Grave Complications of Purulent Ear Disease Operated upon and Reported.* "Arch. of Otol.," vol. xxxv, No. 3.

(1) A fatal case of septic thrombosis of the lateral sinus, secondary to chronic otitis media purulenta in left ear, and complicated with septic infarctions in the right lung. The symptoms of general infection had lasted for eleven days before the case came under the writer's care. He considers that with earlier operation the result might have been different.

(2) A case of otitic extra-dural abscess associated with paralysis of the sixth cranial nerve and double optic neuritis, operation and recovery. The patient recovered, the paralysis of the sixth nerve gradually passing off, and the vision being unimpaired although the haziness of the optic discs persisted.

The author considers the ocular phenomena most readily explained by a limited basal pachymeningitis extending from the sigmoid groove to the sheath of the sixth nerve or the optic commissure, either by pressure or an infective neuritis. A thrombus in the cavernous sinus is given as another possibility while it is noted that optic neuritis seems occasionally to occur in connection with simple purulent middle-ear disease.

Dundas Grant.

REVIEWS.

Operative Otology, Surgical Pathology, and Treatment of Diseases of the Ear. C. J. Blake and H. O. Reik. London: Sidney Appleton, 1906.

In this work the surgical anatomy of the temporal bone and its adnexa is first of all considered from the standpoint of the pathologist and of the surgeon, and several valuable anatomical facts are emphasised. Chapter II deals with the preparation of the patient and of the surgeon for operation, with the methods of sterilising instruments, dressings, and ligatures, and with anæsthesia and anæsthetics. In the following chapter the various morbid affections of the ear requiring surgical interference are described with considerable detail.

In dealing with the surgical treatment of cases of non-suppurative catarrhal middle-ear disease the author looks forward to the time when better results will follow such operations as mobilisation of the stapes, incudectomy and stapedectomy, according as the indications for their application become more concise and definite. He lays particular stress upon a minute study of the middle turbinated body in such cases, regarding pathological changes in the mid-meatal region (the respiratory path) as of the greatest consequence in cases of dry catarrh of the middle ear.

In discussing the treatment of chronic suppurative middle-ear disease the author considers that fully one half of the cases, even of many years' standing, recover under the influence of simple drainage and antiseptic treatment. In many of the other cases minor surgical procedures suffice,