

weeks' duration. At operation the entire mastoid bone was found to be sclerosed. She had had pain in her eyes since she was very young. She apparently recovered from the operation. He saw her at intervals for six months. She died suddenly, having considerable pain at the base of the brain. *Post-mortem* examination revealed a cerebellar abscess as large as the little finger. She had not had a symptom other than the pain. Two abscesses were found on the parietal lobe of each side.

Dr. THOMAS J. HARRIS said that, judging from the discussion, it would seem that the paper had given the impression that there was nothing but the favourable to be said concerning the mastoid operation. It was his own observation, in this country and abroad, that this was not the case, that such were not the results that were being obtained. It was for this reason that Dr. Smith had been invited to discuss this subject. One had only to go into a clinic in any large city to see patients treated week after week for chronic suppuration, to see case after case of facial paralysis going in for dressings. Was it fair to consider this operation from the results of brilliant operators, or should it not be considered from the point of view of the majority of operators? As Dr. Cott had said, there were cases of death. Was death, in these cases, due to the mastoid, or was it coincidental? The mastoid operation was not performed entirely for chronic suppuration; it was performed frequently as the next step in an intracranial operation. He wished that there might at some time be a *referat*, as had been done in Dr. Yankauer's paper, so that the results of those having a small number of cases might be obtained. There was a feeling that the radical mastoid operation was being overdone, that it was done too quickly. Was that the case? After reviewing the statistics, could it be said that the results for the last fifteen years have been good?

Dr. SMITH, in closing the discussion, said when skin-grafting was first introduced, he had used it with not very satisfactory results. He discontinued the method for a number of years, and then, stimulated by Dr. Dench's results, he had taken it up again, but could make no report on the cases so treated, because they were too recent. He employed Dr. Dench's method, using one large graft and two smaller ones, all primary grafts. He had had few cases of Bell's palsy, three of which occurred previous to operation. In two cases he was called out of town on the day appointed for the radical mastoid operation, and that night Bell's palsy developed. If he had operated at the appointed time the palsy naturally would have been attributed to the surgical procedure. Deaths following the radical mastoid operation were, in his opinion, due to complications. He had never seen a death occur in an uncomplicated case.

(To be continued.)

Abstracts.

PHARYNX.

Tonsillitis with Hæmorrhagic Adenitis.—Strange, C. F. "Lancet," October 14, 1916, p. 679.

Soldier, aged twenty-two. Onset sudden, with rigor and severe headache. The following day a large swelling appeared on the right side of the neck. This was opened three days later, and proved to be a large

gland the size of which was entirely due to countless minute hæmorrhages. No pus. The gland was not removed. Operation had a striking effect, temperature going from 103° F. to normal. The wound healed in fourteen days.
Macleod Yearsley.

Clergymen's Sore-throat.—**Steele-Perkins, G.** "Lancet," October 21, 1916.

The writer, in a letter, calls attention to the fact that parsons who speak *down* to their congregation are prone to this form of pharyngitis and laryngitis, whilst barristers, who speak *up* to the bench, are not. He finds that treatment, by making the patient speak upwards, is indicated and is successful.
Macleod Yearsley.

NOSE.

Perez Bacillus and Ozæna.—**Murray, W. R., and Larson, W. P.** The "Laryngoscope," November, 1915, p. 763.

The writers give a good account of the known facts in regard to this question and have carried out some original investigations by injecting 27 rabbits with cultures of Perez organism. They were unable to confirm the work of Perez and Hofer, in which these writers state that the Perez bacillus shows a selective affinity for the nasal mucous membrane. The writers never succeeded in isolating the Perez organism from the nose save in those cases in which it was also present in the heart-blood of the animal. In none of the 27 experiments was there any evidence of atrophy of the turbinals. Murray and Larson have also examined 24 ozæna patients, but all gave negative results. Agglutination tests were made from the blood of 34 ozæna patients, but no frank agglutination reaction were recorded. The complement fixation reactions were likewise negative in the 6 cases examined. The writers have further employed vaccines in 12 cases and obtained a local reaction in 6; increased nasal discharge in 3. There was some degree of improvement in 6 cases (50 per cent.), but objective improvement in only 2 cases. The writers come to the conclusion that they have not been able to obtain any experimental evidence that the bacillus described by Perez is the cause of ozæna, and they do not believe that their clinical evidence is sufficient to warrant the belief that the Perez bacillus is the true cause of ozæna as equally good results have been obtained by other investigators who have used other forms of vaccine.
J. S. Fraser.

The Ætiology of Pansinusitis.—**Wilson, J. G.** The "Laryngoscope," December, 1915, p. 823.

Wilson has experimented on dogs. Both frontal sinuses were opened under aseptic conditions. One sinus was used as control while celloidin capsules containing the following substances were placed in the other sinus: Sterile bouillon, trypan blue, cultures of streptococci, staphylococci, *Bacillus coli*, *Bacillus ozenæ*. Such capsules permit toxins to pass through but prevent the exit of organisms. The dogs were killed at periods of from forty-eight hours to five weeks. The sinuses containing the capsules showed marked reaction in the form of serum, sero-mucous or mucopurulent discharge. Smears from the discharge showed no organisms. The mucosa of the sinus was dark red in colour in early cases, but in

those of longer duration it was pale and cedematous. The control sinuses were normal.

Wilson quotes Schäfer with regard to ciliary movement, which is so rapid that it cannot be seen except when it begins to slacken, due to the cooling of the preparation. The normal ciliated mucous membrane is impervious to organisms, and decrease of the ciliary movement is responsible for the invasion of the sinus by bacteria.

The lymphatic vessels of each sinus converge toward the ostium where they communicate with the main channels in the nose. The larger vessels pass back into the depression between the Eustachian tube and the posterior end of the inferior turbinate. The accessory sinuses are mainly supplied by the sphenopalatine artery and are controlled by a common vaso-motor mechanism.

In ordinary rhinitis we have a local inflammation and congestion of the mucosa of the nose and sinuses. Mucus is discharged into the cavities but the epithelium is still intact. As the inflammation subsides the congestion disappears and the exudate which is not absorbed is removed by ciliary movement. In severe cases, however, the cilia cannot remove the effusion which therefore accumulates. Further, there may be a lymph stasis—the initial step in a lymphatic infection. Bacterial invasion now occurs and the ciliary action is interfered with. The superficial layers of the mucosa may be invaded by micro-organisms.

J. S. Fraser.

Drainage of the Lachrymal Sac and Duct into the Unciform Fossa.—

Mosher, H. P. The "Laryngoscope," November, 1915, p. 739.

In the removal of the anterior ethmoidal cells for ethmoiditis or for gaining access to the naso-frontal duct, Mosher advocates curetting strongly forward until the instrument is stopped by the posterior edge of the ascending process of the superior maxilla. On examining anatomical specimens so operated on, Mosher noticed that in many of them the posterior half of the nasal duct was laid bare. This observation led him to think that the nasal duct could be approached in this way, opened and drained. By this method the duct is reached through soft tissues instead of through hard bone.

Mosher begins with a description of the anatomy of the region involved. He particularly mentions the unciform fossa, which is bounded posteriorly by the posterior edge of the unciform process, anteriorly by the posterior edge of the ascending process of the superior maxilla, superiorly by the inward swelling made by the unciform process, and inferiorly by the upper rim of the inferior turbinate. When stripped of mucous membrane the floor of the fossa is seen to be made by the lachrymal bone below and in front and the unciform process behind. In this region the nasal duct comes to the surface behind the ascending process of the superior maxilla. The posterior inferior corner of the fossa is membranous: this membranous area lies about a centimetre in front of the ostium of the antrum and in a line with it.

Mosher also describes the unciform or lachrymal cells which occupy the space between the upper part of the unciform process and the corresponding portion of the lachrymal bone. The unciform process, owing to its pronounced inward bulge, makes the upper, the posterior, the inferior, and the inner wall of the cell. The outer wall is made by the upper half or two-thirds of the lachrymal bone. The cell extends the whole width of the lachrymal bone and comes into relationship with the upper half of the lachrymal sac. Mosher estimates that the diameter

of the lachrymal sac, when distended, is about 6 or 7 mm., its length about 12 mm. Valves have been described in the duct: the best marked one seems to be at the junction of the sac and duct. The opening of the duct itself into the inferior meatus is of a nature to impede regurgitation.

Mosher's Operation.—The writer prefers general anæsthesia. *First step:* The anterior end of the middle turbinal is removed and as much as possible of the superior overhang taken away. The unciform process should be fully exposed. These procedures may be carried out under cocaine anæsthesia as a preliminary. The lachrymal punctum and canniculus is slit to admit the introduction of Mosher's stiff probe, and this is carried through the duct into the inferior meatus. *Second step:* An incision is made with an angled knife along the posterior edge of the ascending process of the superior maxilla, beginning at the level of the anterior attachment of the middle turbinal. The incision is carried downward and slightly backward parallel to the edge of the ascending process of the superior maxilla and stopping at the upper border of the inferior turbinate. From the bottom of the vertical incision a horizontal cut is now made along the upper rim of the inferior turbinate for about half an inch. From the top of the vertical incision a second horizontal incision is carried backwards across the upper limit of the lachrymal fossa. If this fossa is shallow it is easy to raise the flap which has been outlined. If the fossa is deep, elevation is more difficult. The flap is next tucked backward and downward. *Third step:* This consists in curetting through the inner wall of the lachrymal cell. The instrument is carried outward towards the lachrymal bone into the cavity of the cell and then brought forward against the posterior border of the ascending process of the superior maxilla. *Fourth step:* The stiff probe in the lachrymal duct is slowly withdrawn at the same time making pressure inwards with its point. As soon as the point escapes from the upper rim of the inferior turbinate it breaks through the inner wall of the nasal duct into the unciform fossa. The point of the probe is now advanced a little into the nasal cavity and then swung strongly forward. It thus lays open the inner wall of the nasal duct from the inferior turbinate into the lachrymal sac. *Fifth step:* The probe is re-introduced while the operator curettes along the whole length of the posterior surface of the ascending process of the superior maxilla with a small right-angled curette. This removes spicules of lachrymal bone clinging to the opened inner wall of the duct as well as fragments of the upper part of the unciform process. *Sixth step:* The probe is withdrawn and the bed of the nasal duct widened by biting away the anterior part of the inner wall of the canal, *i. e.* the lip of the ascending process of the superior maxilla. A ligature on a special carrier is now passed from the nose out through the slit punctum. To the nasal end of the ligature a small piece of gauze is attached, kite-tail fashion. The plug should be large enough to hold the flap of mucous membrane firmly in place after it has been smoothed into position. Traction on the ocular end of the ligature draws the plug into place. A small piece of adhesive plaster is used to hold the upper end of the ligature to the skin of the forehead and the lower end to the cheek. *After-treatment:* When the operative reaction has subsided the nasal duct is probed at intervals until the mucous membrane of the unciform fossa has healed in place and the tendency to narrowing has been overcome.

J. S. Fraser.

LARYNX.

The Operation of Laryngo-fissure. — Moore, Irwin. "Lancet," October 14, 1916, p. 675.

A useful article, which clearly describes the technique and stages of this operation. It introduces new instruments designed by the author, which, although they have been for some years in use, are now for the first time introduced definitely to the profession. The paper requires to be read *in extenso*.
Macleod Yearsley.

THYROID GLAND.

Some Functions of the Thyroid Gland and their relationship to Goitre.
—Pern, Sydney "Medical Journal of Australia," June 17, 1916.

Goitre is the result of a constant call on the thyroid's activity. Such call in a large number of cases is due to toxins. In thyrotoxic goitres of a mild type and in pronounced Graves' disease a septic focus often exists. Such foci are found in the tonsils, antra, and other nasal sinuses, and at the roots of teeth. Pern has found material benefit follow removal of a septic focus. The thyroid enlargement of pregnancy is due to the call on the gland to destroy toxins. These cases are benefited by thyroid extract.

The next function of the thyroid is vaso-dilatory, in which it is linked up with the sympathetic adrenaline system. Over-action of the adrenals, brought on by fright or shock, has to be met by a correspondingly large large thyroid output.

The third function is that of the metabolism of calcium salts. In Gippsland goitre with mild thyrotoxic symptoms is very prevalent. This is due to the absence of lime in food and water. When treated with calcium salts a large proportion of these goitres vanish.

Goitre is prevalent in limestone hill country, but in this type there are no thyrotoxic symptoms. The thyroid and parathyroids control calcium metabolism, and an excess of this element leads to hypertrophy. If there were more calcium in Gippsland and less in Switzerland and other parts, goitre would be less prevalent.
A. J. Brady.

E.A.R.

Disseminated Myelitis as Complication of an Acute Mastoid Infection.
Hunt, Ramsay. "Annals of Otology, etc.," xxv, 407.

Patient, a woman, aged thirty-five. The organism found at the operation was streptococcus longus. The mastoid operation healed well. Spinal symptoms appeared on the fourth day after operation. She improved slowly during three months, but still showed spastic paraplegia with paresthesias and a girdle sensation when discharged. The complication is unusual. A bibliography is given. Macleod Yearsley.

The Rinne Test.—Sonnenschein, R. "Annals of Otology, etc.," xxv, 455.

It may be said that the duration of air conduction is considerably longer than is ordinarily noted in the usual Rinne test. Whilst this excess is not materially different as between the normal and pathological.

cases shown in the author's series, the examination of a large number of cases, particularly those with marked nerve degeneration, may possibly show a different ratio between the air conduction, as shown in the Rinne, and that determined without first placing the fork on the mastoid process.

Macleod Yearsley.

Multiple Abscess of the Brain ; Operation ; Recovery.—Guttman, John.
 "Laryngoscope," 1915, p. 284.

Female, aged thirty-three, had acute suppurative otitis media in the left ear. In a few days the drumhead ruptured spontaneously: earache and headache then subsided. Seven weeks after the onset of the trouble, Guttman was called in and found acute mastoiditis with, in addition, headache, nausea, sleeplessness, depression, and fever. Mastoid operation performed; a little pus in the antrum. Thereafter general condition improved for two days, but on the third the temperature suddenly rose to 102° F., pulse 104; severe headache on the diseased side. One attack of vomiting during the next three days. Slight drooping of left upper eyelid and slowness of cerebration. Pulse became slow, 66, and aphasia developed. Second operation: Dura appeared normal, pulsating; director inserted anteriorly and downwards and one ounce of thin, non-fœtid, pus evacuated. Cavity packed with iodoform gauze. Next day patient much better, but amnesic aphasia still continued. Five days later the symptoms suddenly became grave again—headache, slow pulse, and aphasia. The director was now thrust upward and half an ounce of pus was evacuated. No drain inserted. The following day there was a colourless, pulsating liquid escaping from the wound, apparently cerebro-spinal fluid. The patient recovered.

J. S. Fraser.

MISCELLANEOUS.

Headache from the Oto-rhinologist's point of view.—Robertson, W. N.
 "Medical Journal of Australia," July 15, 1916.

In the nose, pressure by Sheene's spurs, enlarged turbinals, polypi, and foreign bodies is a constant source of headache. The same applies to affections of the sinuses. In dozens of cases the removal of a projecting spine on the septum has completely put a stop to regular headaches. The commonest seat of the spine is well back and low down on the septum. Hypertrophy of posterior ends of inferior turbinals is a cause of headache. The commonest cause is hypertrophy of middle turbinate with pressure on septum. In dealing with hypertrophy of the middle turbinal caused by a large air-cell, Robertson, with a strong, thin pair of nasal forceps, crushes the cell like an egg-shell. This relieves pressure and does not destroy the ciliated epithelium. Adenoids in children cause headaches. The localisation of the pain from different affections is described.

Migraine is not, as a rule, connected with any obvious lesion in the nose, yet the most striking results for its amelioration can be obtained by intranasal treatment. Migraine is a vasomotor neurosis. There is vasodilation in the temporal region, with vaso-constriction over the surface of the body. Cauterisation of the nasal septum in front and beneath the middle turbinal will relieve 75 per cent. of these absolutely. Robertson speaks from experience of 200 cases.

A. J. Brady.

Asthma: Its Cause and Treatment.—Ewbank, W. W. "The Medical Journal of Australia," July 22, 1916.

Spasmodic asthma is a dyspnoea produced by a reflex contraction of the bronchial muscles and a dilatation of the bronchial vessels. The source of irritation is in some portion of the mucous membrane lining the nose.

Defining the reflex arc, Ewbank gives a detailed description of the nerve supply of the nose. Some abnormal nasal condition is always the direct cause of asthma. This is the exciting cause, and behind this there is some predisposing cause which has not yet been determined, but in some cases may be due to a want of balance on the part of some of the endocrinous glands.

Causes and Treatment.—(1) *Chronic hypertrophic rhinitis*: When the inferior turbinal swells and touches the septum, an attack is started. On removing this portion of mucous membrane the attack ceases. Other points of contact develop, and must be dealt with in turn till all excitable areas have been removed. The patient then gets no more asthma. The treatment may take six to nine months. It would be quite easy to remove all redundant tissue at one time, but the less tissue removed compatible with cure the better. (2) *Asthmogenic points*: These are hyperæsthetic nerve-endings. They are roughly the size of a millet-seed. They occur in the region of the middle or inferior turbinated bodies, and may be eight or ten in number on one side. Sometimes they can only be detected during an attack. They must be dissected out. Ewbank condemns the use of the cautery for treating any nasal condition giving rise to asthma. (3) *Septal spurs*. (4) *Deviated septum*, if present, requires to be corrected. (5) *Œdematous patches of mucous membrane* on the outer wall of one or both fossæ. These patches become swollen and paler than the surrounding tissue. They are about half the size of a threepenny-bit. They pour out a clear fluid. They must be sought for and removed. Two or more of the above causes may be associated in one case. Ewbank says the cautery, as generally applied, does not destroy the asthma spots, or if some nerve endings are destroyed a neuroma forms under the scar. By his method of treatment in 500 cases he claims 82 per cent. cured where the cautery has not been previously applied, where it has the percentage of cures is reduced to 62 per cent. A. J. Brady.

NOTES AND QUERIES.

DR. ALBERT A. GRAY.

Dr. Albert A. Gray has been appointed Lecturer in Diseases of the Ear to the University of Glasgow and Aural Surgeon to the Western Infirmary, Glasgow, in place of the late Dr. Thomas Barr.

ANTERIOR POLIOMYELITIS.

Flexner states that the virus of infantile paralysis is known to leave the infected human body in the secretions of the nose, throat, and intestines. It also escapes from contaminated healthy persons in the secretions of the nose and throat. The virus enters the body, as a rule, by way of the mucous membranes of the nose and throat. Here it multiplies and later penetrates to the brain and spinal cord by way of the lymphatics.—A. O'REILLY, *Interstate Medical Journal*, February, 1917, p. 130.